



ICMISS 2026

7th INTERNATIONAL CONFERENCE ON MANAGEMENT, INNOVATION, ECONOMICS, AND SOCIAL SCIENCES

Organized by: COLLEGE OF INNOVATION AND MANAGEMENT
SUAN SUNANDHA RAJABHAT UNIVERSITY

Conference theme: Innovative Management and
Economic Strategies for Sustainable Development

Proceeding 2026

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MESSAGE from the President of Suan Sunandha Rajabhat University



On behalf of the Organizing Committee, it is my great pleasure to welcome you to the 7th International Conference on Management, Innovation, Economics, and Social Sciences (ICMIESS) 2026. The conference will take place at Ritsumeikan Asia Pacific University in Beppu, Fukuoka, Japan, on March 11–12, 2026.

This year's conference, sponsored by Suan Sunandha Rajabhat University and our College of Innovation and Management, brings together scholars, industry professionals, and researchers from around the world under the theme:

“ Innovative Management and Economic Strategies for Sustainable Development.”

In today's rapidly changing global landscape, our focus on sustainability is more crucial than ever. ICMIESS 2026 provides an important platform for sharing research, exchanging ideas, and building partnerships to address pressing economic and social challenges through innovative approaches.

Your participation enriches this gathering and contributes to our collective goal of developing solutions that balance economic growth with environmental responsibility and social equity. The insights and connections formed here will help shape policies and practices that support sustainable development across various sectors.

I look forward to the meaningful discussions and collaborations that will emerge during these two days. Thank you for joining us in Ritsumeikan Asia Pacific University in Beppu, Fukuoka for ICMIESS 2026.

Associate Professor Dr. Chutikarn Sriviboon

MESSAGE from the Dean of the College of Innovation and Management



Welcome to the 7th International Conference on Management, Innovation, Economics, and Social Sciences (ICMIESS) 2026, hosted at Ritsumeikan Asia Pacific University in Beppu, Fukuoka, Japan, on March 11–12, 2026.

This conference, sponsored by Suan Sunandha Rajabhat University and organized by our College of Innovation and Management, represents our dedication to advancing knowledge and practice in our fields.

ICMIESS 2026 brings together thought leaders, researchers, practitioners, and students from diverse backgrounds to exchange ideas and share innovations. Our focus this year on “Innovative Management and Economic Strategies for Sustainable Development” addresses the urgent need for solutions that balance economic growth with environmental stewardship and social equity.

We hope this gathering will spark meaningful discussions, foster new collaborations, and generate insights that contribute to sustainable practices worldwide. The challenges we face today require creative approaches and cross-disciplinary partnerships—precisely what this conference aims to facilitate.

On behalf of Suan Sunandha Rajabhat University, I thank you for your participation and valuable contributions. Your work and engagement are essential to building a more sustainable and prosperous future.

I wish you a productive and inspiring experience at ICMIESS 2026.

Asst. Prof. Dr. Cholpassorn Sitthiwarongchai

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ICMISS 2026

OPENING CEREMONY SCHEDULE

"The 7th International Conference in Management, Innovation,
Economics and Social Sciences (ICMISS) 2026"

11 – 12 March 2026, time 09.00 a.m. - 05.00 p.m. (in Japan Time)

Ritsumeikan Asia Pacific University, Beppu, Japan

And Online Via Zoom Application Meeting ID : **979 0130 1342** Zoom Room: 1

Activities	No.	ID	Title	Presenter
International present (34 articles) Chairman Asst. Prof. Dr. Muhammad Shahid Khan <u>Zoom Login</u> <u>Room 1*</u> ID: 979 013 01342 09.00 a.m. - 06.00 p.m. (Japan Time)	1		Digital Welfare Platforms and Community Economic Development	Pattara Vajsawan
	2		Service Delivery Components that Enhance The Success of Internal Quality Assurance: A Case Study of The Research and Development Institute, Suan Sunandha Rajabhat University	Watsamon Santaweesuk
	3		Strategic Management for Enhancing Service Quality Affecting The Organizational Image of The Provincial Waterworks Authority in Thailand	Cholpassorn Sitthiwarongchai
	4		Development of Product Potential for Community Enterprises to Enhance Competitiveness and Generate Economic Impact	Chumpon Rodjam
	5		Perceived Usefulness and Behavioral Intention to Use Small Electric Public Transportation of Secondary Cities in Thailand	Panida Ninaroon
	6		Technology And User Satisfaction in Harbin's Smart Sports Venues: Relationships and A Causal Model	Anuchit Kulwanich
	7		Factors Affecting The Success of Condominium Rental Business in Bangkok	Tawatchai Suphuan
	8		Consumer Attitudes Towards Social Responsibility and	Wareeya Khlungsaeng

Activities	No.	ID	Title	Presenter
			The Environment Surrounding Business	
	9		Development of Digital Marketing Strategies to Enhance The Competitiveness of Digital Training Programs at The College of Innovation and Management	Phatthanan Rotrungwat
	10		Service Innovations Affecting User Satisfaction in The Services of The Research and Academic Services Division, College of Innovation and Management, Suan Sunandha Rajabhat University	Sudarat Chirapruk
	11		The Effect of Digital Communication by Influencers on Esports Event Attendance Intention	Nuttavut Phonsri
	12		Factors Influencing Generation Z's Employment Decision-Making in Thai Organizations	Nathayu Wantayakul
	13		Factors Affecting the Work Performance of Operational Employees: A Case Study of a Low-Cost Airline in Thailand	Oraphan Decha
	14		A Spatial Development Approach to Elevate Kanchanaburi's Creative Economy Towards a Sustainable International Green Tourism Model	Wutipong Janmuangthai
	15		The Influence of Influencers on Online Platforms on Creating Own Branding of Online Audiences	Peeranthon Saensook
	16		A Study of Personnel Participation in Educational Quality Assurance of The College of Innovation and Management, Suan Sunandha Rajabhat University	Rujjaret Pinthuwat
	17		Factors Affecting The Efficiency of Academic Services to Society in Higher Education Institutions in Thailand	Wisuthtinath Wipakkitanan

Activities	No.	ID	Title	Presenter
	18		Factors Influencing the Decision to Use The Services of Suan Sunandha Palace Hotel, Suan Sunandha Rajabhat University	Mananchaya Buakao
	19		The Influence of Sport Event Quality on Sport Tourist Loyalty: A Case Study in Buriram Province, Thailand	Montipa Vilasthip
	20		Strategic Development of Ranong's Identity and Community Health Products As Wellness Soft Power for High-Potential Markets	Pannawat Chuvichian
	21		Human Capital Management to Enhance Competitive Skill of University Esports Athletes	Chaichana Wongjunya
	22		Innovative Esports Competitions for The International Promotion of Thai Sports Potential: A Case Study of The University Esports Championship	Atidtaya Bousri
	23		Marathon Running Behavior and Intrinsic Motivation Among Generation Z	Suporntip Pupanead
	24		The Influence of Social Media Use Intensity and Fan Engagement on Perceived Sustainable Economic Value Creation Among Thai Sports Fans	Boonyada Pahasing
	25		The Influence of Influencers on The Purchase Decisions of New Generation Consumers in The Digital Economy Era	Narumon ChomChom
	26		Enhancing Creative Value Through Digital Marketing Strategies: Applying Content Marketing for The Sustainability of Handmade Tonkla Achiap Community Enterprise in Pho Chon Kai, Bang Rachan, Sing Buri Province	Sathapath Kilaso

Activities	No.	ID	Title	Presenter
	27		Development of an Operational Manual for Monitoring and Evaluating Plan Implementation, Office of Academic Resources and Information Technology, Suan Sunandha Rajabhat University, Fiscal Year 2025	Chanida Chirapruk
	28		Innovative Marketing and Product Development for Enhancing Community Enterprise Competitiveness	Panyada Chantakit
	29		Sustainable Water Management by Local Government Organizations: A Case Study of Koh Larn, Chonburi Province	Nimit Ponyiam
	30		Digitalizing Academic Governance for Sustainability: A Conceptual Framework for Paperless Systems and Green Environmental Outcomes	Muhammad Shahid Khan
	31		Executive Negotiations: A Comparative Case Analysis of Speech Act Rhetoric and Contractual Risk	Tahir Khan



Opening Ceremony Schedule

"The 7th International Conference in Management, Innovation,
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11 – 12 March 2026, time 09.00 a.m. - 05.00 p.m. (in Japan Time)

Ritsumeikan Asia Pacific University, Beppu, Japan

And Online Via Zoom Application Meeting ID : [922 1050 2948](#) Zoom Room: 2

Activities	No.	ID	Title	Presenter
International present (42 articles) Chairman <i>Asst. Prof. Dr. Muhammad Shahid Khan</i> <u>Zoom Login</u> <u>Room 2*</u> ID: 922 1050 2948 09.00 a.m. - 06.00 p.m. (Japan Time)	1		Co-Creating Local Experience Value: Marketing Strategies for Cultural Tourism Products	Patsara Sirikamonsin
	2		Factors Influencing People's Decisions to Use Exercise and Fitness Center Services in Mueang District, Sisaket Province	Theerawat Pongwiset
	3		Antecedents Influencing Online Purchase Behavior of Consumers in Thailand's Andaman Provinces	Jongdee Limchuchua
	4		Key Factors Behind Gamers' Urge to Top Up Online Games in Bangkok and Vicinity	Thanarach Wongrinyong
	5		A Literature Review for Developing A Conceptual Framework to Study Factors Influencing The Intention to Purchase Green Products Online in Thailand	Suwita Prugsarporn
	6		The Marketing Mix Factors Influencing The Decision to Watch Boxing Matches Via Online Platforms	Atitaya Jindawong
	7		Factors Affecting Technology Usage Behavior Of Royal Thai Police Officers	Yosavich Daolomchan
	8		From Marine Bio-Trauma to Wearable Meaning	Xiaoyu Ma
	9		Visaual Poster Design About Marine Microplastic Pollution	Siyu Zhou
	10		Educational Management Perspective on Professional Development Training	Zhihui Tu

Activities	No.	ID	Title	Presenter
			for Young Teachers in Rural Junior High Schools	
	11		A Study on The Short Video Communication Paths and Strategies of Mianyang Paper-Cutting	Huan Wang
	12		The Impact of Employee Income, Promotion Mechanism, and Corporate Culture on Employee Loyalty in Smes of Chengdu, China	Haoyang Wang
	13		Development and Evaluation of a Virtual Simulation Education Project for Self-Management Support for Nursing Students Caring for Patients with Type 2 Diabetes Mellitus	Wenting Fang
	14		Educational Management of Students' Mental Health in Guangdong Country Garden Polytechnic	Na Huang
	15		The Role and Function of Teachers in Improving the Quality of Higher Education in Guangdong Engineering Polytechnic	Huiyan Luo
	16		The Impact of Digital Capability and Ai Acceptance on Employee Creativity in Digital Workplaces	Sirun Chen
	17		Strategies for Promoting Urban-Rural Educational Equity in The Intelligent Transformation of Primary Education in Qinzhou, Guangxi	Qianyun Chen
	18		Translation Experiment of Traditional Ink-Wash Techniques in Fantasy Illustrations: Connecting Thai Mythology with Contemporary Visual Narratives	Tian Pei
	19		Educational Management Strategies for The Cultivation of Vocational Teachers'	Ning Wang

Activities	No.	ID	Title	Presenter
			Competence in Shandong College of Traditional Chinese Medicine	
	20		Optimizing Dance Educational Management in Yunnan Kunming Art Vocational College	Huaidan Fan
	21		Guidelines for Developing Ai Competency of Teachers in Xishan High School of Kunming No.1 High School	Zhuoxun Li
	22		Enhancement of Teachers' Digital Literacy in The Transformation of Educational Management of Mingde Senior High School in Kaili City	Wenyue Deng
	23		The Guideline for Developing Personnel Administration Strategies for School Administrators of Theguandu Experimental School Affiliated to Shanghai Normal University	Wenrui Li
	24		Artificial Intellingence Management and Its Application of Dali University In Yunnan Province	Xinyuan Dong
	25		Countermeasures of Industry-Education Integration in Secondary Vocational Colleges in The New Era — A Case Study of Harbin Light Industry School in China	Zonglei Li
	26		Mechanistic Advances in Gynostemma Pentaphyllum Regulation of The Pink1/Parkin Pathway to Reverse Cisplatin Resistance in Non-Small Cell Lung Cancer	Jianfeng Meng
	27		Research on the Development and Enhancement of the Internal Teaching Quality Assurance Mechanism in Higher Education Institutions: A Case Study of Wenshan University, Yunnan Province	Jinyi Liu

Activities	No.	ID	Title	Presenter
	28		Development of Dance Education Management for Kindergarten Teacher in Wenshan University	Fangxin Li
	29		Current situation and development strategies of teacher management and teacher team building in Borderland Universities - A case study of Yunnan Wenshan University	Youqian Zhang
	30		The Innovation of Educational Management from an International Perspective in Anhui	Yan Li
	31		The Formation and Dilemmas of Professional Identity among Non-tenured Teachers and Their Impact on Team Collaboration: Primary and Secondary School Teachers in Wuhua District, Kunming, China	Yanwen Wang
	32		Transforming Challenges into Opportunities: A Case Study of Educational Technology Integration at Yangzhou University	Fangfang Zhang
	33		Educational Management Factors and Occupational Burnout among Administrative Personnel in Chinese Higher Education Institutions	Qian Yang
	34		Guideline for Developing Educational Resources Management of Chengdong Experimental Primary School	Yuying Lin
	35		Innovative Research on Internationalization in Educational Management at Frontier Local Universities in the New Era: A Case Study of Wenshan University	Zhenqiong Xu
	36		The Role of Yunnan Sports Vocational and Technical College in Promoting	Shuai Fu

Activities	No.	ID	Title	Presenter
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	37		Teacher Retention Management in Border Areas of Wenshan College	Yuna Zhang
	38		An effective study on the development path of minority football in western Yunnan	Guo Lianchang
	39		Animal Imagery as Semiotic Tool for Environmental Communication in Fashion Photography	Yun Wen
	40		A Study on Narrative Structure and Multi-Sensory Rhythmic Immersive Wedding Space Design: Taking “Weaving Realm” as an Example	Qinyao Chen
	41		Factors that influence the Decision to Attend Ratchaburi FC	Atittiya Pimpa
	42		Nutrition for esports athletes	Wannapa Somprosong
	43		Development of esports-related tourism routes	Pornnapus Saowakon
	44		A literature review for developing a conceptual framework to study the structural relationships among antecedent factors influencing the organizational performance of the seafood industry in the country	Yenjit Kongpan
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DIGITAL WELFARE PLATFORMS AND COMMUNITY ECONOMIC DEVELOPMENT

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ABSTRACT

In the digital era, information technology has become an integral part of everyday life and a key driver of social and economic transformation. Access to social welfare and community economic development has been reshaped by digital platforms that now function not only as communication tools but also as critical infrastructures for delivering public services.

Digital welfare systems—such as state welfare cards, government applications, and direct cash transfer schemes—can help reduce inequality, improve targeting, and enhance the efficiency and transparency of state management (Suwara Nakayos, 2022). At the same time, community economies, which form the foundation of national development, increasingly benefit from online commerce, digital marketing, and local business networking supported by digital platforms (Tech For Good Institute, 2022). These developments empower communities to be more self-reliant, resilient, and competitive in broader markets.

This article uses a literature-based analytical approach to examine how digital welfare platforms function as “intermediaries of trust” that connect citizens to rights, services, and economic opportunities. It also analyzes the implications for inclusive and sustainable community economic development, drawing on empirical evidence from Thailand, Estonia, Sub-Saharan Africa, Japan, and the United States.

Keywords: digital platforms, social welfare, community economy, digital government, financial inclusion

INTRODUCTION

Rapid advances in digital technology have transformed how citizens interact with the state and the market. Governments around the world are increasingly adopting digital platforms to deliver welfare services, manage public data, and support local economic development. Digital tools such as e-Government portals, mobile payment systems, and online marketplaces can lower transaction costs, increase transparency, and broaden access to opportunities—especially for disadvantaged groups (Espinosa & Pino, 2024; World Bank, 2024).

In Thailand, digital government development and the expansion of the digital economy are key policy priorities under long-term national strategies and sectoral plans. The rise of e-commerce, digital finance, and platform-based services has created new channels for community enterprises, farmers' groups, and social enterprises to reach wider markets. Yet challenges remain, including digital inequality, infrastructure gaps, and concerns about data privacy and security (Jongwanich, 2024).

This article focuses on the intersection between digital welfare platforms and community economic development. It argues that digital platforms can be understood as welfare infrastructures and “intermediaries of trust” that link citizens, state agencies, and market actors. By reviewing international and Thai literature, the article explores (1) how digital platforms shape access to welfare; (2) how they support community economies; and (3) what policy directions can enhance inclusiveness and sustainability.

Conceptual Framework and Related Literature

2.1 Social Welfare Concepts

Social welfare generally refers to rights, benefits, and services provided by the state to ensure basic security and well-being for citizens. These include education, healthcare, income support, pensions, and social assistance for vulnerable groups. In many countries, welfare policies aim to reduce poverty and inequality, strengthen human capital, and promote social cohesion.

The introduction of digital platforms into welfare management has transformed policy implementation in several ways:

Improved targeting and access: Digital registration systems and e-payment tools help identify eligible beneficiaries and deliver benefits more quickly and directly, reducing reliance on intermediaries and minimizing leakages (World Bank, 2024).

Transparency and accountability: Digital records of transactions and beneficiary data create auditable trails, which can reduce corruption and enhance public trust in welfare programs (Espinosa & Pino, 2024).

Cost reduction and efficiency: Automation and database integration help reduce administrative costs, eliminate duplication, and speed up service delivery.

In Thailand, the State Welfare Card program illustrates both the potential and limitations of digital welfare initiatives. It has helped reduce socio-economic inequality among low-income groups, but challenges remain, including coverage gaps, complex registration procedures, and ensuring that benefits reach the intended target groups (Suwara Nakayos, 2022).

2.2 Community Economy

Community economy refers to economic activities organized at the local level, based on local resources, knowledge, and social relations. It emphasizes:

Self-reliance: Strengthening the community's capacity to meet its own needs. Fair distribution of income: Reducing intra-community inequality and ensuring that benefits are shared among members. Sustainable use of local resources: Preserving natural and cultural capital for future generations. Linking community economies with digital platforms can expand market access and diversify income sources. For example, e-marketplaces and social commerce allow local producers to sell products beyond their immediate geographic area; social enterprise platforms can connect communities with impact investors or ethical consumers. Evidence from Southeast Asia suggests that digital platforms, when designed with public benefit in mind, can support inclusion, reduce inequalities, and promote sustainable development (Tech For Good Institute, 2022). Farmer groups and entrepreneurs in agricultural tourism communities are the primary drivers of the local economy. Rodjam, C., Chantahkit, P., Chotianusorn, E. (2024).

In Thailand, community products such as OTOP (One Tambon One Product) increasingly use online channels—Facebook shops, Line Official Accounts, Shopee, Lazada, and other platforms—to reach national and international customers. This shift requires not only digital infrastructure but also skills in digital marketing, content creation, and online customer service.

2.3 Digital Government Platforms in Thailand

Thailand has advanced its digital government agenda under the 2023–2027 Digital Government Development Plan led by the Digital Government Development Agency (DGA). The plan's vision is to provide “convenient, transparent, and modern public services that meet citizens' needs”.

A central feature of this agenda is the creation of four core platforms:

Government Data Exchange (GDX): A secure system for data sharing among government agencies, reducing redundant data collection and improving service integration.

Open Government Data Portal: A platform for publishing government datasets that can be reused by citizens, researchers, and businesses, thereby supporting innovation and evidence-based policymaking.

Government Business Portal: A one-stop portal for business-related services—for example, business registration, licensing, and tax filing—intended to improve the business environment and attract investment.

Citizen Portal (e.g., the “Tang Rat” super app): An integrated application that allows citizens to access various public services, welfare benefits, and public information in one place.

In parallel, Thailand has introduced the Digital Platform Services (DPS) Regulation, which aims to protect users, reduce fraud risks, and build trust in online services. These frameworks are intended to ensure that digital platforms operate fairly and that users' rights and data are safeguarded.

Overall, digital government platforms in Thailand serve multiple roles: enabling welfare delivery, supporting business activities, and generating open data that local communities can use for planning and innovation (Jongwanich, 2024).

2.4 Related Research

Several strands of literature inform this study:

Digital platforms for public benefit: The Tech For Good Institute (2022) argues that digital platforms in Southeast Asia can generate “public benefit” when they are intentionally designed to reduce inequality, enhance sustainability, and promote inclusive growth. Digital platforms are conceptualized as intermediaries that connect users to services, information, and economic opportunities, and can be harnessed for goals beyond profit maximization (Tech For Good Institute, 2022).

Digital economy in Thailand: Jongwanich (2024) provides an in-depth analysis of the Thai digital economy between 2017–2021. The study finds that the digital economy grew faster than overall GDP, increasing from approximately USD 41 billion in 2017 to USD 66 billion in 2021, and from 9% to 13% of GDP. Key drivers include digital industries, e-commerce, digital finance, and digital tourism, while major challenges relate to infrastructure gaps and digital skills among citizens (Jongwanich, 2024).

E- Government as a development strategy: Espinosa and Pino (2024) analyze Estonia's experience and argue that e-Government should be seen as a comprehensive development strategy rather than merely an administrative tool. Estonia's digital-first society, X-Road data exchange platform, and e-Residency program demonstrate how digital government can enhance transparency, trust, and competitiveness, thereby improving quality of life and state capacity (Espinosa & Pino, 2024).

Mobile money and financial inclusion: The World Bank (2024) and recent empirical studies highlight the role of Mobile Money in expanding financial access in Sub-Saharan Africa. Mobile money accounts have become a primary driver of financial inclusion, enabling users to store money, make payments, and access savings and credit (World Bank, 2024). Building on this, Hornuf et al. (2025) and Kouandou and Legras (2025) provide systematic evidence that mobile fintech and mobile banking are associated with improved welfare outcomes, particularly among rural and low-income populations.

Sustainability of welfare programs: In the Thai context, Suwara Nakayos (2022) examines the State Welfare Card program and proposes a sustainability model that emphasizes effective management, community participation, private sector collaboration, and digital infrastructure development. The study shows that digital welfare programs can reduce inequality but must address issues of coverage, accessibility, and long-term institutional support.

Together, these studies support the core idea of this article: digital welfare platforms function as infrastructures of trust that connect citizens with state rights and services, and they can be extended to support community economic development through information access, cost reduction, and new business opportunities.

OBJECTIVES

1. To analyze the roles and functions of digital welfare platforms in improving welfare access, transparency, and service efficiency.
2. To examine how digital platforms support community economic development, particularly through online commerce, financial inclusion, and digital participation.
3. To propose strategic policy directions for enhancing inclusive and sustainable linkages between digital welfare systems and community economies.

METHODOLOGY

This article employs a qualitative analytical approach based on a literature review. Sources include:

- Academic journal articles on digital platforms, e-Government, and mobile money;
- Policy reports and discussion papers from international organizations (e.g., World Bank) and Thai institutions;
- Research reports and dissertations related to the Thai State Welfare Card program and community development; and
- Case studies from various countries illustrating digital welfare and community economy initiatives.

The collected documents are comparatively analyzed along three dimensions:

1. Roles of digital welfare platforms in expanding access, reducing costs, and improving transparency;
2. Impacts on community economies in terms of income generation, employment, and local enterprise development;
3. Challenges and policy directions for inclusive and sustainable digital welfare systems.

FINDINGS

Roles of Digital Welfare Platforms

The review identifies three primary roles of digital welfare platforms: Expanding access to welfare services. Digital platforms have made it easier for citizens to register for and receive welfare benefits such as child support grants, income support, and targeted subsidies. For example, mobile-based applications and e-wallets can deliver cash transfers directly to beneficiaries, reducing the need for physical visits to government offices (World Bank, 2024). Reducing administrative costs and improving efficiency, automation and digital data management reduce paperwork, accelerate processing times, and limit duplication across agencies. This leads to lower administrative costs and more efficient use of public funds, as seen in Estonia's integrated digital government systems (Espinosa & Pino, 2024). Enhancing transparency and accountability, digital records of registrations, transactions, and program outcomes enable more effective monitoring and evaluation. They also provide the basis for public oversight and independent audits, thereby strengthening accountability and public trust.

Impacts on Community Economy

Digital platforms influence community economies in several ways:

Promoting online commerce: Community products—such as local food, crafts, and agricultural goods—can be sold through e-marketplaces (e.g., OTOP online markets, social commerce, and major e-commerce platforms). This helps expand customer bases beyond local markets and can increase community income.

Creating new employment opportunities: The growth of platform-based services has generated jobs in logistics, delivery, digital marketing, content creation, and platform management. Young people in rural communities, in particular, can leverage digital skills to create micro-enterprises or freelance work.

Strengthening community enterprises: Digital platforms provide tools for branding, customer engagement, and data-driven decision-making. Community enterprises can use online reviews, social media analytics, and digital payment records to better understand customers and improve products.

Overall, the evidence suggests that digital welfare platforms and related digital ecosystems can support community economic development by lowering barriers to entry, broadening market access, and fostering grassroots-level innovation (Tech For Good Institute, 2022; Jongwanich, 2024).

DISCUSSION

While digital welfare platforms offer significant benefits, several limitations and risks must be addressed:

Digital inequality

Access to digital services remains uneven across regions, age groups, and socio-economic status. Elderly people, low-income households, and rural residents may lack smartphones, stable internet connections, or the digital skills needed to use online platforms effectively (World Bank, 2024).

Infrastructure gaps

In many rural areas, internet and mobile network coverage is still insufficient. This limits the reach of digital welfare programs and e-commerce initiatives, reinforcing existing inequalities between urban and rural communities.

Data privacy and security concerns

The increasing use of personal data in digital welfare systems raises concerns about privacy, surveillance, and potential misuse. Strong regulatory frameworks and technical safeguards are required to protect citizens' data and maintain trust in digital platforms (Espinosa & Pino, 2024).

Institutional capacity and coordination

Effective digital welfare systems require coordination across multiple agencies, as well as adequate human resources and technical capacity. Fragmented databases and overlapping responsibilities can undermine the potential benefits of digital platforms.

Development Directions

To enhance the contribution of digital welfare platforms to community economic development, this article suggests three key directions

User-centered and inclusive design

Platforms should be designed with simple interfaces, multi-language support, and features accessible to people with disabilities or low digital literacy. Offline support channels should remain available during the transition.

Digital literacy and community capacity building

Training programs for community leaders, local entrepreneurs, and vulnerable groups can help them use digital platforms for both welfare access and economic activities.

Multi-stakeholder collaboration

Effective digital welfare ecosystems require cooperation among government agencies, private sector firms (e.g., telecom companies, platform providers), civil society organizations, and local communities. Public-private partnerships can foster innovation while ensuring public benefit (Tech For Good Institute, 2022; Suwara Nakayos, 2022).

Case Studies

To illustrate how digital welfare platforms and community economies interact in practice, several case studies are highlighted.

Thailand

Mae Lan Fresh Mart, Pattani: A local food delivery system using social media and messaging applications to connect community producers with customers, demonstrating how digital tools can expand local markets and provide convenience for consumers.

Lak Hok Municipality, Pathum Thani: The municipality uses social media and digital platforms to engage citizens, enabling residents to report local issues, participate in consultations, and receive real-time information.

Organic Farming Group, Lamphun: An organic farming community uses e-commerce platforms such as Shopee and Lazada to sell organic products nationwide. Digital platforms support branding, logistics, and payment systems that would be difficult to manage individually.

The Thai State Welfare Card program also demonstrates how digital welfare tools can be combined with community networks to reach low-income households, though issues of coverage and sustainable impact remain (Suwara Nakayos, 2022).

Japan and the United States

Japan follows a conservative welfare regime characterized by extensive social insurance, including universal health insurance and pensions. Digitalization in Japan's welfare system supports elderly care and health service delivery, but must address demographic challenges and labor market inequalities.

The United States represents a liberal welfare regime where Social Security and Medicare form the core of the welfare system. Digital tools have improved access to information and benefits—such as online Medicaid and digital Social Security services—but challenges persist, including unequal access and the affordability of healthcare.

RESULTS

1. Digital welfare platforms significantly expand access to welfare services and improve administrative efficiency. They reduce transaction costs, accelerate benefit delivery, and strengthen transparency through digital identity systems, e-payment mechanisms, and integrated government databases.

2. Digital platforms contribute directly to community economic development. Online marketplaces, mobile banking, and digital marketing tools increase market access, create new employment opportunities, and strengthen community enterprises through branding, analytics, and digital financial services.

3. The effectiveness of digital welfare and community economic development depends on digital literacy, infrastructure readiness, and institutional coordination. Areas with strong connectivity and digital skills show higher welfare uptake and stronger community enterprise performance, while inequality in digital access remains a major constraint.

CONCLUSION AND FUTHER WORK

Digital welfare platforms are transforming how states deliver social protection and how communities participate in the economy. By functioning as intermediaries of trust, these platforms connect citizens to rights, services, and economic opportunities at the grassroots level.

The literature reviewed in this article shows that:

- Digital platforms can expand access to welfare, reduce administrative costs, and enhance transparency;
- When aligned with community needs, they can promote community economic development by facilitating online commerce, creating new jobs, and strengthening community enterprises;
- However, digital inequality, infrastructure gaps, and data governance issues must be addressed to ensure that digital welfare systems are genuinely inclusive and sustainable.

For Thailand, further progress requires investment in digital infrastructure, targeted digital literacy programs, and multi-stakeholder cooperation that integrates government, private sector, and communities. By learning from international experiences—such as Estonia's digital government and Sub-Saharan Africa's mobile money ecosystems—Thai policymakers and local communities can design digital welfare platforms that not only reduce inequality but also empower communities to drive their own development.

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SERVICE DELIVERY COMPONENTS THAT ENHANCE THE SUCCESS OF INTERNAL QUALITY ASSURANCE: A CASE STUDY OF THE RESEARCH AND DEVELOPMENT INSTITUTE, SUAN SUNANDHA RAJABHAT UNIVERSITY

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ABSTRACT

This research aims to explore satisfaction and dissatisfaction among service recipients with the services provided by the Research and Development Institute at Suan Sunandha Rajabhat University. The sample consisted of 45 service recipients. The data collection tool was a five-point Likert-scale questionnaire, complemented by open-ended questions to capture opinions and qualitative suggestions. Data were analysed using descriptive statistics, including means and standard deviations. The findings revealed that overall satisfaction was very high (4.55). Among the aspects, service quality received the highest mean score (4.63), followed by personnel (4.60), facilities (4.48), and the service process/steps (4.47), all at high levels. Qualitative data indicated that service recipients desire faster, more accurate, and more accessible services, as well as additional academic support such as training and research consultancy. Furthermore, factors that promote the success of internal quality assurance operations include management support, staff participation, resource readiness, and a continuous, quality-focused organisational culture. These are all essential components for elevating service standards and sustainable development. The research results provide empirical evidence to guide quality improvement efforts, particularly in reducing procedural complexity, increasing online service channels, developing communication systems, and expanding academic support. These measures will help enhance satisfaction, confidence, and the sustainability of the university's internal quality assurance system.

Keywords: Service Delivery Components, Internal Quality Assurance, Research and Development Institute, Suan Sunandha Rajabhat

INTRODUCTION

Internal Quality Assurance (IQA) is a crucial mechanism that helps higher education institutions operate in accordance with quality standards and stakeholder expectations. This encompasses graduate production, knowledge creation, research, academic services, and cultural preservation within a context

where government oversight is less stringent, competitive capabilities are increasing, and international indicators serve as benchmarks. Quality assurance systems should not be viewed merely as 'evidence preparation for evaluation' but as embedded quality management systems that support routine processes, inform data-driven decision-making, and drive continuous improvement through the PDCA cycle. They should also align with the EdPEX framework, with a primary focus on the recipient-centred dimension.

The Research and Development Institute at Suan Sunandha Rajabhat University plays a strategic role in enhancing the university's research capacity, from developing researcher potential and managing research funding to establishing ethical research practices involving humans, supporting publication efforts, and managing intellectual property. The success of these missions depends on standardised processes, accurate and timely data, and effective cross-departmental coordination mechanisms. Therefore, internal quality assurance operations are the primary mechanism ensuring sustainable, realisable research and academic service outcomes that are aligned with the university's strategy and reflect societal value.

However, research activities face specific challenges, such as the diversity of service recipients (faculty, researchers, students, external partners), the complexity of indicator data, changing regulations and practices, and limitations in resources, personnel, and digital skills. Without appropriate support factors, systemic problems may arise, including non-standardised workflows, incomplete documentation, inaccurate data, inadequate communication, and reactive rather than planned improvements aimed at elevating quality to achieve 'excellent results.' The institution must continuously develop a system to listen to the voice of the customer (VOC), covering satisfaction, dissatisfaction, needs, expectations, and engagement of each group. When user experience data is linked with service process maps (Service Blueprint/ Customer Journey), it helps identify bottlenecks, risks, and moments of truth in key services such as funding systems, ethics review, publication support, and intellectual property management. Survey results can be translated into operational quality indicators, such as the Customer Satisfaction Index (CSI), the Customer Engagement Index (CEI), complaint rates, approval times, first-contact resolution rates, and document accuracy. These indicators reflect both user experience and process efficiency, leading to the setting of service standards, quality targets, and improvement measures aligned with EdPEX and the PDCA cycle: P (setting standards and targets based on findings), D (developing processes, technology, and personnel roles), C (monitoring with experience and process indicators), and A (raising standards or expanding best practices). Kakhai, K, Pranee, S, Saeng-on, P, Kumpetch, N. (2023).

Conceptual Framework

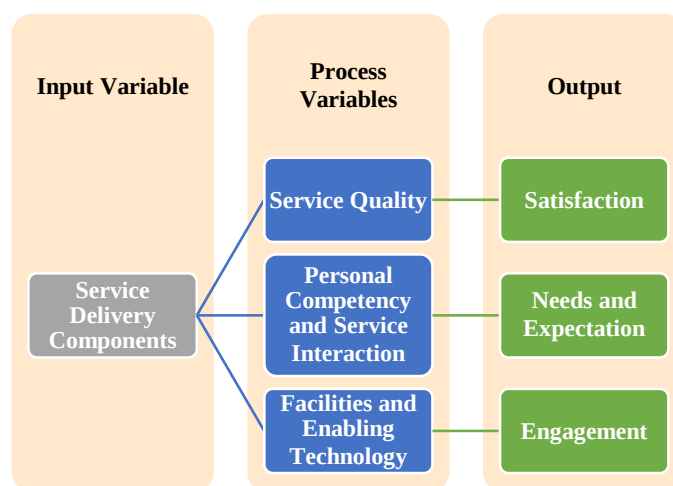


Figure 1

OBJECTIVE

1. To evaluate the experience of service recipients regarding satisfaction, needs, expectations, and attachment, to serve as data for designing and improving the service system in line with IQA standards.
2. To analyze the process factors, personnel, and support systems that affect the service recipients' experiences concerning satisfaction, needs, expectations, and engagement.

METHODOLOGY

This research is a mixed-methods study combining quantitative methods with qualitative insights to explore levels of satisfaction, needs, expectations, and attachment among service recipients. It also examines the factors influencing service recipients' experiences with the services provided by the Research and Development Institute at Suan Sunandha Rajabhat University.

Population and Sample

The population used in this research includes internal and external personnel of the university who received services from the Research and Development Institute, totaling 45 people. A purposive sampling method was used, as the sample group consists of actual service users who can provide experience-based information relevant to the point.

Research Instruments

The tools used for data collection include: Part 1 - General information of the service recipients; Part 2 - Satisfaction and dissatisfaction with the service; Part 3 - The needs of the service recipients (what the recipients need the most); Part 4 - The expectations of the service recipients (what the recipients expect, which may or may not occur); and Part 5 - The commitment of the service recipients (whether they feel like returning for the service or recommending it to others).

Data collection

Conducted both online and offline within a period of 2-3 weeks, explaining the purpose to respondents and ensuring the confidentiality of the data.

Data Analysis

Descriptive statistics, including the mean and standard deviation, are used to assess the level of experience of the service recipients. If further analysis of influencing factors is required, utilize correlation or multiple regression. For qualitative data, analyse by categorising issues (Thematic Coding) and summarising content (Content Analysis) to reflect the problems and suggestions of the service recipients.

RESULTS

Based on the research project titled "Factors Affecting the Success of Internal Quality Assurance Operations at the Research and Development Institute, Suan Sunandha Rajabhat University," the researcher collected data from a sample of 45 individuals, including both academic staff and personnel from inside and outside the institute. A rating-scale questionnaire was used, along with open-ended questions to elicit opinions and suggestions. The findings revealed that the service recipients' overall satisfaction was the highest (4.55). When considered separately, the overall service quality had the highest

average score (4.63), followed by service personnel (4.60). The facilities (4.48) and the service process/steps (4.47) were also rated highly, indicating that service recipients have high confidence in the quality of service and the organization's personnel. However, it also showed that the organization should improve its convenience, speed, and publicity to enhance service efficiency.

The analysis of open-ended responses indicated that most service recipients wanted the organization to develop faster, more accurate service delivery, increase access convenience, and maintain continuous communication. Additionally, they expected more academic support, such as training or consultancy related to research work. Factors that fostered a sense of attachment and a willingness to recommend the service included polite, attentive service and the trustworthiness of the personnel.

Furthermore, the research results identified factors influencing the success of internal quality assurance operations at the research and development institute, including management support that prioritises service quality, collaborative work among staff at all levels, the availability of resources and support tools, and an organizational culture focused on quality and continuous development. These factors are fundamental in enabling quality assurance operations to achieve tangible results and sustainability.

In summary, this research highlights that the institute's strengths lie in its personnel and service quality, which are crucial for building satisfaction and trust among service recipients. It also proposes improvement strategies, such as reducing procedural complexity, expanding online service channels, and organising academic activities, to elevate service quality and promote the success of internal quality assurance operations, making them more efficient and sustainable for the university.

CONCLUSION AND FUTURE WORK

This research reflects that service recipients generally have a high level of satisfaction, particularly in terms of overall service quality and the personnel providing the service, which received the highest evaluation. These factors demonstrate the potential of the research and development institute to manage and deliver quality services in accordance with standards, including the readiness of personnel (Bousri, A., & Santaweek, W., 2023), providing accurate and complete information, and offering polite and attentive service (Asubonteng, McCleary, & Swan, 1996). All of these elements align with the principles of internal quality assurance in education, which emphasise the simultaneous development of people and systems. However, the survey results also highlight areas for improvement, such as ease of access to services, speed, and publicity, which, although rated highly, still elicit diverse opinions (Alyasein, Ojha, & Sadeghi, 2025). This indicates that processes and facilities still face certain limitations. Listening to this feedback is a mechanism of 'stakeholder feedback' (Boksberger & Melsen, 2011), which is central to the quality assurance system in education, as it helps organisations make targeted improvements aligned with actual needs.

When linking these factors to the success of quality assurance, it is found that the success of the research and development institute is not solely dependent on service quality (Borghi & Mariani, 2024), but also on management support that prioritises quality work, the participatory involvement of personnel at all levels, resource readiness, and the cultivation of organisational culture focused on quality and continuous development. Having personnel recognised by service recipients for their politeness and attentiveness reinforces the success of fostering a quality culture within the organisation (Brynjolfsson & Hitt, 2000). Meanwhile, feedback from service recipients on faster, more convenient access (Mariani & Borghi, 2024) underscores the need for agencies to utilise evaluation data for process improvements systematically.

Therefore, this survey not only provides an overview of satisfaction and dissatisfaction among service recipients but also directly links to factors influencing the success of internal quality assurance. In other words, data from service recipients serve as a 'confirmation' that support from management, staff participation, and adequate resource management can lead to highly satisfactory outcomes (Panayiotou & Stergiou, 2020). At the same time, it clearly indicates avenues for development that can make the quality assurance operations more comprehensive and sustainable

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STRATEGIC MANAGEMENT FOR ENHANCING SERVICE QUALITY AFFECTING THE ORGANIZATIONAL IMAGE OF THE PROVINCIAL WATERWORKS AUTHORITY IN THAILAND

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ABSTRACT

Effective service quality management strategies are essential for ensuring high-quality service delivery within the Provincial Waterworks Authority (PWA) in Thailand, as they impact the business's image. The study examines how strategic management approaches can enhance service quality and, consequently, strengthen the overall image of the PWA. This research aims to 1) investigate the service quality management strategies of the PWA, 2) examine the organizational image of the PWA, and 3) analyze the service quality management strategies that influence the organizational image of the PWA in Thailand to provide practical implementation guidelines. Data were collected using a structured questionnaire administered to a randomly selected sample of 400 respondents. The data were analyzed using a commercially available statistical software package. Descriptive statistics, including frequencies, percentages, means, standard deviations, and minimum and maximum values, were employed. Additionally, inferential statistical analyses, including Pearson's correlation coefficient, tolerance, variance Inflation factor (VIF), and stepwise multiple regression analysis, were used to test the hypotheses. All statistical analyses were at a significance level of 0.05.

The research outcomes successfully fulfilled all three objectives, as summarized below:

The demographic data collected from the 400 Provincial Waterworks Authority (PWA) service users in Thailand indicated that the majority of respondents were male (55.3%). Most Users were married, possessed an educational level below a Bachelor's degree, had more than 11 years of experience as a PWA user, and reported an average monthly income of approximately 15,000 baht. The overall level of **service quality management strategies** implemented by the PWA in Thailand was also rated at a high level. Ranked from the highest to the lowest, the identified aspects included: 1) Reliability, 2) Understanding Customer Behavior while fostering positive public relationships, 3) Customer confidence as providing confidence in the safety of tap water usage, 4) Tangible Service relates the quality of service, and 5) Customer responsiveness by the ability to respond to customer needs. The overall **organizational image** of the PWA in Thailand was likewise. Evaluated at a high level. All specific dimensions were consistently rated highly. Ranked from the highest to the lowest, the organizational image dimension included: 1) Reputation, 2) Impressive service, 3) Interpersonal communication, 4) Organizational identity, and 5) Physical environment. The results confirmed that the five service quality factors were acceptable. independence for multiple regression analysis, with an inter-correlation no more than 0.80 (multi-collinearity). These factors are Tangible Service, Reliability, Customer Responsiveness, Customer Confidence, and Understanding Customer Behavior. We collectively found that we had a statistically significant influence on the overall organizational image of the PWA in Thailand. The model representing strategic factors in service quality management that influence the organizational image of the PWA in Thailand was expressed as follows: a statistical value of Service quality management strategies affected the organizational image of PWA = $0.274 + (0.269 * \text{understanding customer behavior}) + (0.156 * \text{reliability}) + (0.201 * \text{customer confidence}) + (0.154 * \text{customer responsiveness}) + (0.146 * \text{tangible service})$. The findings indicate that the service quality factor models explain factors influencing service quality that affect the organizational image of the PWA in Thailand by 89.8% and a standard error of estimate of ± 0.173 .

Keywords: Strategic Management, Enhancing Service Quality, Organizational Image, Provincial Waterworks Authority

INTRODUCTION

His Majesty King Bhumibol Adulyadej the Great (Rama IX) was more interested in water resource development than in any other type of project. His Majesty's speech at Chitralada Palace on March 17, 1986, in part, stated, "The most important principle is to have water for drinking, for use, and for agriculture, because life is there. If there is water, people can survive. If there is no water, people cannot survive. If there is no electricity, people can survive. But if there is electricity but no water, people cannot survive." (Yenthun, 2010: 44)

Water is widely recognized as a valuable natural resource and a vital element for sustaining life. Consequently, ensuring a supply of clean, high-quality water for human consumption is crucially important and safe for use. In contemporary contexts, tap water has undergone quality enhancement processes to meet consumption standards. Accordingly, the Provincial Waterworks Authority (PWA) shows a vital role in supporting communities throughout Thailand. The rapid economic and social development in Thailand has significantly escalated the demand for high-quality water supply. In response, the PWA has established specific standards for delivering clean and safe tap water to the public, commonly referred to as "drinkable tap water." (Sathien, 2016)

There is a common public misconception that tap water production involves simply pumping water from natural sources and distributing it through pipelines for public use and drink. However, for the public to reliably access clean, safe tap water for daily consumption, the raw water must undergo a comprehensive, multi-step production process. This involves securing a source of sufficient, quality raw water, followed by testing, quality improvement, contaminant removal, sedimentation, filtration, disinfection, and final water quality testing prior to distribution. Substantial capital investment is necessary for upgrading and developing raw water sources, as well as for constructing and expanding the water distribution network to enlarge the service area. This is to ensure consistent tap water service and to provide those who otherwise would not have access to tap water with the opportunity to use tap water through the investment in expanding the distribution area. (Provincial Waterworks Authority, 2009, cited in Homsakul, 2014).

The Provincial Waterworks Authority (PWA) is a state enterprise under the Ministry of Interior, established by government policy to provide quality tap water services. They are responsible for producing, transmission, and distribution of tap water nationwide for public utility purposes, prioritizing the benefits and public health. Currently, the PWA operates across ten operational areas, each managing its own waterworks offices. Its service units cover municipalities, sub-district administrative organizations, and villages across the country, excluding Bangkok, Nonthaburi, and Samut Prakan. The PWA focuses on providing impressive and reliable service to the public while strictly adhering to tap water quality standards. This focus emphasizes various aspects of service delivery, including convenience and speed, aiming for the highest customer satisfaction through consistently excellent standards in both service quality and tap water quality (Provincial Waterworks Authority of Thailand (2015), cited in Luangchangthong and Chantuk (2016)).

The current era is characterized by rapid global social and economic transformations driven fundamentally by globalization. Consequently, the PWA's the operations of organizations like the PWA are increasingly subjected to rigorous comparisons and international benchmarking, particularly concerning service quality. This globalization requires the organization to adapt both technology and customer behavior. It requires the organization to place greater emphasis on developing service quality and product standards in various forms. Competition in well-being and higher expectations for a better quality of life are also increasing. Therefore, the organization must continuously improve its services in conjunction with service quality management strategies. It includes developing executives and employees at all levels, both core and support functions, to be innovative and adapt to the changing global

landscape. They must also work together to develop and improve service towards a common goal: management strategies to develop the quality of products or services for both internal and external customers, resulting in public satisfaction and achieving international-level service quality. However, the PWA focuses on providing satisfying services to customers anytime, anywhere, and continuously implements the same standards nationwide. Public perception of the PWA's staff's services and public perception of tap water usage are also important factors. Any services improve the quality of service. Hence, public satisfaction is a necessity that the organization attends to and responds to successfully by the organization in terms of administration (Homsakul, 2013).

Accordingly, the research team has focused its efforts on examining service quality management strategies and their impact on the organizational image of the PWA in Thailand. The researchers are expected to yield valuable conclusions and practical guidelines for enhancing the strategies implemented by the PWA. Ultimately, this research aims to support the PWA (a key organization in Thailand) in maintaining excellent service quality, thereby cultivating a positive image and reinforcing public confidence in the safety of clean, drinkable tap water.

OBJECTIVES

1. To investigate the service quality management strategies of the Provincial Waterworks Authority in Thailand.
2. To examine the organizational image of the Provincial Waterworks Authority in Thailand.
3. To analyze the service quality management strategies to enhance the image of the Provincial Waterworks Authority in Thailand, providing a guideline for implementation.

METHODOLOGY

To study concepts and theories related to service quality strategies affecting the image of the Provincial Waterworks Authority in Thailand, the researchers selected Leblanc and Nguyen's (1996) concept of the Provincial Waterworks Authority's image in Thailand, cited in Bunklang (2017), Parasuraman and Berry's (2013) concept of service quality, cited in Chaengwetchachai (2016), and Barber and Goodman's (2011) customer service quality management strategy.

Population and Sample

The population used in this research consisted of 400 Provincial Waterworks Authority (PWA) service users in Thailand.

Research Instruments

This research utilized a five-item checklist questionnaire. The questionnaire was divided into four Parts: Part 1, which examined demographic characteristics, including gender, age, education level, and length of service use. Part 2, which examined the PWA's service quality management strategies in Thailand, consisted of 25 items. The questionnaires addressed five dimensions: tangible service, reliability, customer responsiveness, customer confidence, and understanding customer behavior. Each dimension comprised five items. Part 3 is about the image of the Provincial Waterworks Authority in Thailand. There are 25 questions in 5 components: organizational identity, reputation, physical environment, service and interpersonal communication. Each dimension comprised five items. Questions in Part 2 and Part 3 are Likert scale questionnaires with 5 levels: 5 = most and 1 = least. Part 4 is about suggestions on service quality management strategies that affect the image of the Provincial Waterworks Authority in Thailand. It is an open-ended question to express opinions.

Instrument Validation

The quality of the research instrument consisted of assessing the content validity of the measurement instrument using the Index of Item-Objective Congruence (IOC) technique. Three experts assessed the consistency index of the questionnaires to be at least 0.5, indicating that the questions were consistent with the research objectives and could be used for questionnaire purposes. The researchers

also measured reliability. This study tested the revised questionnaires with a non- test population of 30 participants. All variables had Cronbach's alpha coefficients, resulting in a reliability score of 0.977.

Data Collection

The research used questionnaires to collect data directly from a sample group. Permission to collect data was obtained from the sample group. Upon receiving permission, the research team administered the questionnaires and explained the topics to the sample group. After the sample completed the questionnaires, the study checked the completeness and accuracy of the questionnaires. If any incomplete responses were found, the researchers requested further questions. A total of 400 questionnaires were collected, meeting 100% of the target.

Data Analysis and Statistics

The researchers analyzed the data using statistics to calculate statistical values. The steps were as follows:

1. Descriptive statistical analysis: Describe the demographic characteristics of the data collected from the samples included in the study were frequency and percentage. They were measured using maximum, minimum, mean, and standard deviation. The relationship between waterworks service quality and the image of the Provincial Waterworks Authority (PWA) was measured using mean and standard deviation.

2. Inferential statistical analysis was used to test the following hypotheses:

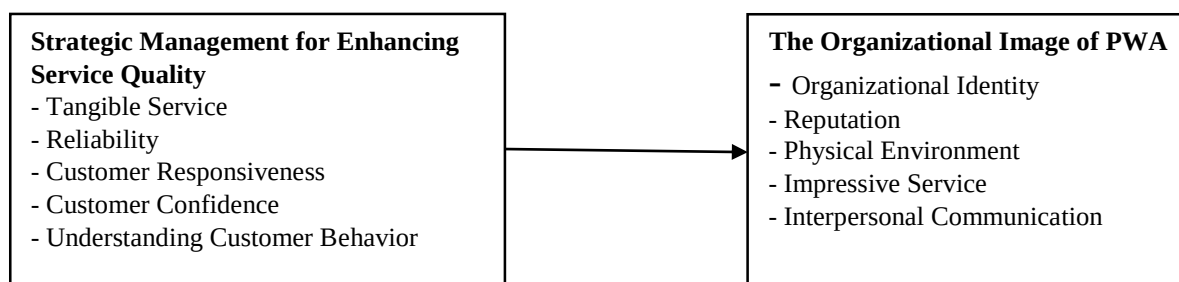
2.1 Correlation analysis was performed between all independent variables according to the conditions specified in the preliminary agreement of the linear regression analysis. Pearson's product-moment correlation coefficient was employed to examine the relationship between two quantitative variables: the PWA's service quality management strategy and the PWA's organizational image.

2.2 Developing a model of service quality that influences the image of the Provincial Waterworks Authority (PWA) in Thailand.

$$\begin{aligned} \text{Using the equation} \quad Y &= b_0 + b_1x_1 + b_2x_2 + b_3 + x_3 + \dots + b_nx_n + e \\ b_0 &= \text{Intercept} \\ b_1, b_2, b_3, \dots b_n &= \text{Regression Coefficients} \\ x_1, x_2, x_3, \dots x_n &= \text{Predictors} \\ e &= \text{Error term or Disturbance} \end{aligned}$$

Conceptual Framework

The study formulated the conceptual framework based on relevant studies, concepts, theories, and empirical research related to service quality management strategies and organizational image. Accordingly, the research conceptualization can be presented as follows:



RESULTS

The results of research on the **service quality management strategies** of the Provincial Waterworks Authority in Thailand found that the overall level of importance was at a high level. Each variable, from the highest to the lowest, was: Reliability, Understanding Customer Behavior, Customer Confidence, Customer Responsiveness, and Tangible Service as shown in Table 1.

Table 1

Service Quality Management Strategies of the Provincial Waterworks Authority in Thailand

Satisfaction Level

Mean and standard deviation of service quality management strategies of the Provincial Waterworks Authority in Thailand, by aspect and overview.

Service quality management strategy of the Provincial Waterworks Authority in Thailand	Satisfaction Level		
	$\bar{X}$	S.D.	Interpretation
1. Reliability	4.07	.682	high
2. Understanding Customer Behavior	4.07	.631	high
3. Customer Confidence	4.07	.614	high
4. Tangible Service	4.06	.602	high
5. Customer Responsiveness	4.03	.687	high
Overview	4.03	.537	high

The research results on the **Organizational Image** of the Provincial Waterworks Authority in Thailand focused on the service-related behavior of the employees. The overall picture was at a high level. Each variable was found to have a level of importance, ranked from the highest to the lowest, namely Reputation, Impressive Service, Interpersonal Communication, Organizational Identity, and Physical Environment, as shown in Table 2.

Table 2

The Organizational Image of the Provincial Waterworks Authority in Thailand

Satisfaction Level

Mean and standard deviation of the image of the Provincial Waterworks Authority in Thailand by personnel behavior, each aspect and overview.

Service quality management strategy of the Provincial Waterworks Authority in Thailand	Satisfaction Level		
	$\bar{X}$	S.D.	Interpretation
1. Reputation	4.03	.670	A lot
2. Impressive Service	4.02	.662	A lot
3. Interpersonal Communication	4.00	.671	A lot
4. Organizational Identity	3.99	.629	A lot
5. Physical Environment	3.98	.678	A lot
Overview	4.03	.537	A lot

Research results on the service quality management strategies of the Provincial Waterworks Authority to enhance the image of the Provincial Waterworks Authority in Thailand. The service quality management strategy consists of Reliability, Understanding, Customer Behavior, Customer Confidence, Tangible Service, and Customer Responsiveness. The five variables were found to have a relationship of no more than 0.80. In conclusion, all independent variables in this research did not have a multi-collinearity relationship between factors. Therefore, all five independent variables could be used in a stepwise multiple regression analysis, as shown in Table 3.

Table 3

The results of the correlation coefficient analysis between Service Quality Management Strategies affecting the Organizational Image of the Provincial Waterworks Authority in Thailand.

Factors	Z	X ₁	X ₂	X ₃	X ₄	X ₅
1. Z	1.000					

2. X ₁	.743*	1.000				
3. X ₂	.817*	.684*	1.000			
4. X ₃	.807*	.595*	.725*	1.000		
5. X ₄	.834*	.615*	.696*	.695*	1.000	
6. X ₅	.839*	.592*	.652*	.666*	.729*	1.000

*Statistically significant at the level of 0.05

Analysis of service quality management strategy models affecting the image of the Provincial Waterworks Authority in Thailand. The PWA's image in Thailand was $0.274 + (0.269 * \text{Customer Behavior Understanding}) + (0.156 * \text{Trustworthiness}) + (0.201 * \text{Customer Confidence}) + (0.154 * \text{Customer Responsiveness}) + (0.146 * \text{Service Tangibility})$. This factor can explain 89.80% ($R^2 = 0.898$) of the PWA's image in Thailand, with a standard error of $\pm .173$. Table 4 as showed following:

Table 4
Analysis of Service Quality Management Strategies Models (Understanding Customer Behavior, Reliability, Customer Confidence, Customer Responsiveness, Service Tangibility) affecting the Organizational Image (Organizational Identity, Reputation, Physical Environment, Impressive Service, Interpersonal Communication) of the PWA, Thailand.

Service Quality Management Strategies affecting the Organizational Image of PWA	Model 1	Model 2	Model 3	Model 4	Model 5
Constants	1.122	.677	.470	.428	.274
1. Understanding Customer Behavior	.715	.454	.328	.290	.269
2. Reliability	-	.370	.277	.209	.156
3. Customer Confidence	-	-	.270	.223	.201
4. Customer Responsiveness	-	-	-	.165	.154
5. Tangible Service	-	-	-	-	.146
R ²	.704	.831	.868	.885	.898
S.E.	.293	.221	.196	.183	.173
F	947.177*	977.674*	865.990*	758.688*	690.852*
P – value of F	.000	.000	.000	.000	.000

CONCLUSION AND FUTURE WORK

Based on the findings of this research, the researchers discuss the key findings that address the study's objectives as follows:

1. The findings indicate that the service quality management strategies of the Provincial Waterworks Authority in Thailand consist of five variables, prioritized as follows: Reliability, Understanding Customer Behavior, Customer Confidence, Tangible Service, and Customer Responsiveness. All factors are at a high level. The research found that PWA employees in Thailand employed service quality management strategies. Kakhai, K, Pranee, S, Saeng-on, P, Kumpetch, N. (2023). Employing service quality management strategies enables service staff to deliver services that encompass both tangible and intangible attributes, meet public or user expectations. Service providers can build reliability and gain a deeper understanding of customer behavior, attentive, reassuring practices, and the responsiveness of high-quality services to customers. Furthermore, services meet customer expectations, which include reliable and high-quality service, and build confidence through tangible responses to customer needs. This consequently enhances customer satisfaction and fosters

service loyalty and customer retention. Furthermore, this finding aligns with the theory of Parasuraman and Berry (2013), as cited in Chaengwetchachai (2016), who state that service quality is an expected requirement for all customers. Service performance can be evaluated in five dimensions: tangible service quality; employees building reliability by providing quality, accurate, and appropriate service, consistent service quality by delivering on time as promised, responsiveness by employees' willingness to assist customers promptly, building customer confidence by employees providing accurate information; employees' skills and prompt response to customer needs; and understanding customer behavior through employees' attentive, friendly service and treating each customer like family. The findings align with the concept of Inkaew (2007, as cited in Suwanpho, 2018), who states that the significance of service quality is demonstrated through its ability to benefit service businesses by enhancing customer satisfaction, reducing operating costs, and encouraging customer retention due to timely or accurate service delivery. Specifically, the research on service tangibility also supports service quality management strategies that aim to impress customers. This is consistent with Barber and Goodman (2011), who agree that all levels of employees and managers require continuous training and development in quality service to deliver satisfying services. Conversely, Zhan, Zhang, Yang, and Guo (2025) suggest a contradiction, arguing that employees' emotional self-awareness is a crucial strategy for quality service management in addition to traditional training and development. They emphasize that organizations must motivate teams to compete and self-develop to provide excellent service, primarily by actively listening to customer feedback.

2. Research found that the Organizational Image of the PWA, Thailand, which comprises Reputation, Impressive Service, Interpersonal Communication, Organizational Identity, and Physical Environment, is perceived at a high level. This suggests that the PWA's organizational image reflects the organization's personality or employee behavior, which is displayed publicly to create a positive impression among consumers. Consequently, cultivating a positive organizational image helps to build reliability, enhance customer confidence, and encourage continued patronage. This finding is consistent with the theory of Leblanc and Nguyen (1996, as cited in Bunklang, 2017), which discusses the service business image and its relation to organizational identity and reputation. A strong organizational image can thus ensure reliability in service delivery by providing guidelines for evaluating service quality within the physical environment. This involves identifying customers' true needs and ensuring clear communication during service provision to meet the unique requirements of each customer. Moreover, this perspective aligns with the concept of Siwaow (1993, as cited in Kasiphan, 2014), who asserts that the organizational image is vital for all employees to convey effectively to a large customer base. Therefore, employees must be comprehensively aware of their organization's identity. This necessitates studying and learning from the opinions of employees who hold positive attitudes toward the organizational image. Conversely, if the majority of employees hold negative attitudes, management must urgently implement development programs to enhance employees' knowledge and understanding of how to collaborate in creating a positive image for the organization. This intervention is crucial to preventing image deterioration and subsequent damage to the organization's overall performance."

3. The research results concerning service quality management strategies and their effect on the organizational image of the PWA, Thailand, provide guidelines for implementation, particularly concerning the tangible service that the results of tangible service cover intangible feelings of their overall perception of the service, such as the water users' overall sentiment toward the service delivery. Furthermore, Understanding Customer Behavior exhibited a statistically significant correlation with enhancing service quality, which in turn affects the organizational image (0.269), at a statistically significant level at 0.05. It was found to correlate highly with the PWA's organizational image at 0.898 (89.80), with a standard deviation of ± 0.173 . When analyzed collectively, all five dimensions were found to correlate significantly with service quality management strategies affecting the organizational image at a statistically significant level of 0.001. (all $P < 0.001$). In conclusion, Understanding Customer Behavior, Reliability, Customer Confidence, Customer Responsiveness, and Tangible Service were identified as the variables within service quality management strategies that significantly predict the organizational

image. These relationships are expressed by the standard score regression equation: $0.274 + (0.269 * \text{understanding customer behavior}) + (0.156 * \text{Reliability}) + (0.201 * \text{Customer Confidence}) + (0.154 * \text{Customer Responsiveness}) + (0.146 * \text{Tangible Service})$. These findings are consistent with the theory of Leblanc and Nguyen (1996), as cited in Bunklang (2017), who state that the image in the service business comprises the organization's identity (related to Reputation), the ability to guarantee service reliability, and the Physical Environment (where employees can explain why customers choose the service). This image is also reinforced by Interpersonal Communication, ensuring clarity and meeting individual needs. Furthermore, the results align with the concept of Si Khao (1993, as cited in Kasiphan, 2014), who asserts that the organizational image is critically important for all departments, and is significantly influenced by the collective opinion of most employees. If the majority of employees hold a negative attitude toward the organizational image, management must urgently initiate programs to create a positive image. Failure to do so will result in an organizational image that negatively impacts the employees, potentially leading to reputational damage and a consequent decrease in organizational performance.

Conclusion

The research decisively indicates that the PWA's service quality management strategies, comprising five high-level variables (Understanding Customer Behavior, Reliability, Customer Confidence, Customer Responsiveness, and Tangible Service), are highly effective predictors of its Organizational Image. The PWA's ability to manage these factors ensures the distribution of both tangible and intangible services that not only meet but also build positive sentiment and enhance service quality among water users, thereby strengthening the organization's overall image and performance.

Recommendations

Recommendations from the Application of the Research Results:

Based on the variables of Reliability, Understanding Customer Behavior, Customer Confidence, Tangible Service, and Customer Responsiveness, the PWA management team must prioritize customer needs. This requires actively soliciting customer feedback and utilizing the insights gained to enhance strategic service provision. These strategic variables are expected to strengthen the overall effectiveness of service quality management by ensuring continuous customer care, which promotes confidence, reliability, and consistent customer retention for the PWA. The research suggests that the PWA's organizational image (including Organizational Identity, Reputation, Physical Environment, Impressive Service, and Interpersonal Communication) requires continuous improvement and refinement. Specifically, the PWA should focus on staff training and professional development to enhance service quality management skills, successfully build confidence and trust among its customers. The findings reveal that the identified variables related to service quality strategic management, and organizational image can serve as the foundation for developing training curricula for front-line PWA staff. The effectiveness of these courses must be systematically evaluated to ensure successful implementation.

Limitation and Future research

The study, although rigorous, is geographically limited to the context of the PWA in Thailand. As a result, the predictive model for organizational image may have limited generalizability across individual PWA service regions and provinces, thereby constraining a comprehensive understanding the emotional and intangible aspects of water user perceptions across different service areas.

Future research should compare the model with the Metropolitan Waterworks Authority (MWA) and expand the scope to specific PWA regions to improve generalizability and precision. A qualitative study is also recommended to explore how customers' intangible (feelings) self-awareness regarding frontline staff can be integrated into training to enhance the explanatory power of the "Understanding Customer Behavior" variable and guide the development of standardized PWA knowledge management.

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DEVELOPMENT OF PRODUCT POTENTIAL FOR COMMUNITY ENTERPRISES TO ENHANCE COMPETITIVENESS AND GENERATE ECONOMIC IMPACT

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ABSTRACT

This study aims to develop the product potential of community enterprises to enhance their competitiveness and generate sustainable economic impact. It employs a mixed-methods approach, integrating both qualitative and quantitative methodologies across three core objectives: (1) to examine internal organizational environments, development needs, and participatory factors related to product potential and (2) to construct a strategic framework for product development. The research involved four target groups: community leaders, enterprise chairpersons and members, participants of training and development initiatives (n=30), and subject-matter experts (n=30), with a total sample size exceeding 200 individuals. Instruments included semi-structured interviews, causal relationship path analysis, satisfaction and prototype evaluation questionnaires, all of which demonstrated acceptable content validity (IOC 0.88-0.92) and internal consistency (Cronbach's Alpha 0.87-0.90). Findings reveal that while community enterprises exhibit strong adaptability and foundational awareness of product development, limitations persist in innovation adoption, value creation strategies, and access to broader markets. Quantitative results from structural equation modeling (SEM) confirm that product innovation is the strongest predictor of value addition ($\beta = 0.87$) and product development ($\beta = 0.76$), underscoring innovation as a key driver of competitiveness. The proposed development framework integrates product design, sustainable production practices, digital technology adoption, and open innovation principles. Pilot implementation of the model through the development of a localized cosmetic product—mushroom-based facial cream—demonstrated high consumer satisfaction, with evaluation scores averaging above 4.5 out of 5 across all key metrics including effectiveness, usability, and market readiness. The study concludes that systematic product development, anchored in innovation and contextual adaptability, is essential for transforming community enterprises into competitive and economically impactful ventures. The model developed herein serves as a transferable framework that can be customized for similar community-based enterprises seeking market expansion and sustainable growth.

Keywords: Product Development, Community Enterprises, Innovation, Competitiveness, Economic Impact, Structural Equation Modeling

INTRODUCTION

Community enterprises have emerged as critical agents of grassroots economic development in Thailand, particularly in rural and semi-rural areas. These enterprises often integrate local wisdom, natural resources, and community collaboration to create unique value-added products that reflect regional identity and heritage. In recent decades, the Thai government and development agencies have increasingly promoted community enterprises as mechanisms for inclusive economic growth, poverty alleviation, and sustainable rural transformation (Gligorijević & Rusić, 2020; Choi & Yu, 2022). However, despite strong sociocultural foundations, many of these enterprises face limitations in product innovation, marketing capability, and strategic competitiveness, which restrict their potential to thrive in broader commercial markets.

The contemporary economic landscape shaped by digital transformation, shifting consumer preferences, and global market integration demands more than traditional product development approaches. Community enterprises must now adapt to market-driven imperatives, including brand positioning, differentiation, and innovation-led value creation (Kalantari et al., 2024). Empirical studies highlight that innovation, when integrated with local context and sustainable practices, enhances competitiveness and commercial viability (Danish, 2020; Wang et al., 2024). Yet, community enterprises in Thailand often operate with fragmented structures, lack access to formal research and development (R&D) support, and remain dependent on local markets with limited growth potential (Niederreiter & Riccaboni, 2021). As a result, their ability to develop commercially competitive products that generate tangible economic impact remains constrained.

To address these challenges, there is a pressing need to design systematic, scalable frameworks that guide product development through innovation, stakeholder participation, and contextual adaptability. Such frameworks should not only focus on improving the intrinsic quality of products, but also encompass market-oriented strategies, brand communication, and sustainable production models. Moreover, successful transformation of community enterprises requires a deeper understanding of internal organizational dynamics, community readiness, and the external factors influencing market integration (Choi & Yu, 2022). These multidimensional considerations call for a research approach that combines empirical evidence with practical application, allowing community enterprises to transition from subsistence models to commercially viable ventures.

This study responds to these demands by developing a strategic framework aimed at enhancing the product potential of community enterprises in Thailand. The research integrates qualitative insights and quantitative analysis to identify critical factors that influence innovation adoption, value creation, and market competitiveness. The study also includes a pilot implementation phase to evaluate the practicality and impact of the proposed model. Through this approach, the research not only contributes to theoretical understanding but also offers actionable guidance for practitioners, policymakers, and enterprise leaders seeking to elevate the role of community enterprises in national economic development.

By focusing on product innovation, marketing strategies, and stakeholder engagement, the study bridges the gap between traditional enterprise practices and modern commercial requirements. The anticipated outcomes include improved product quality, increased consumer appeal, and enhanced competitiveness of rural enterprises. Ultimately, the research aims to generate scalable economic impact by empowering community enterprises to engage effectively in the commercial economy, both domestically and internationally.

OBJECTIVES

1. To investigate the internal organizational environment, development needs, and key factors influencing participatory processes in enhancing the product potential of community enterprises.
2. To design a strategic framework for developing product potential that integrates innovation, sustainability, and market responsiveness, aiming to improve competitiveness.

METHODOLOGY

Research Design

This study employed a mixed-methods research design to explore, develop, and evaluate strategies for enhancing the product potential of community enterprises, with a specific focus on improving competitiveness and generating measurable economic impact. The integration of qualitative and quantitative approaches ensured methodological rigor and allowed for triangulation of findings to increase the validity and depth of interpretation (Creswell & Plano Clark, 2018).

1) Phase One: Exploratory Qualitative Research. The initial phase involved in-depth interviews and focus group discussions with key stakeholders including community leaders, enterprise members, and local development officers. This phase aimed to identify internal challenges, community expectations, and contextual variables influencing product development. The qualitative data were analyzed using content analysis to extract themes relevant to innovation, market readiness, and local participation.

2) Phase Two: Quantitative Model Construction. Building on the qualitative findings, the second phase utilized a structured questionnaire to collect quantitative data from a broader population. The data were analyzed using descriptive statistics and Structural Equation Modeling (SEM) to validate latent constructs such as innovation capacity, sustainability, and value creation. This phase provided empirical support for the theoretical framework guiding the study (Kline, 2016).

Population and Sample

To ensure a comprehensive understanding of the factors influencing product development in community enterprises, this study adopted a multi-group sampling strategy based on relevance to the research objectives. The selection criteria emphasized both stakeholder diversity and contextual specificity, aiming to capture a wide range of perspectives necessary for developing a practical and scalable development framework.

1) Community Leaders and Enterprise Members. A purposive sampling technique was applied to identify 50 key informants, including community leaders, chairpersons of enterprises, and active members with decision-making roles. These participants provided insights into organizational structures, leadership capacity, and the practical constraints of product development at the community level.

2) Entrepreneurs. A stratified random sample of 140 enterprise operators from Bang Khonthi District, Samut Songkhram Province was selected to represent various product categories and operational scales. This group contributed to the quantitative phase of the study, particularly in measuring latent variables such as innovation capacity, sustainability practices, and market engagement (Yamane, 1967).

3) Training Participants and Innovation Trainees. An additional group of 30 individuals who had participated in government or university-led training programs related to community enterprise development was included to assess the impact of capacity-building interventions on innovation readiness and market adaptation.

4) Subject-Matter Experts. A panel of 30 experts in community-based product development, innovation, and rural entrepreneurship was selected for validating the conceptual framework and evaluating the relevance of research instruments. Their feedback provided a higher-order perspective on the feasibility, transferability, and sustainability of the proposed development strategies.

This multi-tiered sample structure ensured both empirical robustness and contextual depth in addressing the challenges and opportunities facing community enterprises.

Research Instruments

The research instruments used in this study were designed to effectively measure the variables related to the development of product potential in community enterprises, particularly in the context of enhancing competitiveness and generating sustainable economic impact. The instruments were developed and validated through expert consultation and empirical testing to ensure reliability and construct validity.

1) In-depth Interviews and Focus Group Discussions. Semi-structured interviews and focus groups were conducted with community leaders, enterprise members, and development officers to gain qualitative insights into current product challenges, innovation needs, and strategic gaps. These tools enabled the capture of nuanced contextual data that informed the subsequent stages of instrument design and model construction (Guest et al., 2006).

2) Structured Questionnaires. Three types of questionnaires were utilized: (a) a causal relationship analysis tool measuring latent variables such as innovation, value creation, and sustainable production; (b) a product satisfaction survey for assessing consumer perceptions of product quality, design, and usability; and (c) a prototype evaluation form for assessing feasibility, relevance, and market readiness. All questionnaires employed a 5-point Likert scale and were tested for content validity (IOC = 0.88–0.92) and internal consistency (Cronbach's Alpha = 0.87–0.90), confirming their statistical adequacy (Likert, 1932; Hair et al., 2017).

3) Expert Validation Tools. Specialized interview guides were developed for experts in product development and innovation to assess the appropriateness, completeness, and transferability of the proposed development framework. Data from these expert evaluations played a crucial role in refining both instrument design and strategic recommendations.

Data Analysis

The data analysis process in this study was designed to comprehensively examine the factors influencing the development of product potential in community enterprises, in alignment with the goal of enhancing competitiveness and generating economic impact. A mixed-methods design was employed to integrate both descriptive and inferential statistical techniques with qualitative insights, ensuring a robust and multidimensional interpretation of the data.

1) Descriptive Statistics. Descriptive analysis was conducted to summarize demographic data, organizational characteristics, and key response patterns from the survey participants. Measures of central tendency and dispersion, including means and standard deviations, were calculated to assess general trends in perceptions of innovation, product development, and sustainability practices (Hair et al., 2017). This provided foundational insights into the existing readiness and capacity of the community enterprises.

2) Inferential Statistics. Structural Equation Modeling (SEM) was applied to examine causal relationships among latent variables such as product development, innovation capacity, value creation, and sustainable practices. SEM was chosen for its capacity to test complex models and latent constructs simultaneously, allowing validation of the theoretical framework proposed in the study (Kline, 2016). Goodness-of-fit indices (e.g., CFI, RMSEA) were utilized to confirm model adequacy and refine structural relationships.

3) Qualitative Analysis. To supplement the statistical findings, qualitative data obtained from focus group discussions and expert interviews were analyzed using content analysis. Themes related to stakeholder participation, market challenges, and innovation constraints were identified and triangulated with quantitative findings. This combination of methods ensured greater credibility and contextual relevance of the study's conclusions (Creswell & Plano Clark, 2018).

RESULTS

1. Organizational Readiness and Participatory Factors in Product Potential Development

The study revealed that community enterprises possess a solid foundational structure in terms of organizational adaptability, leadership vision, and community cohesion. Key internal factors such as resource availability, leadership support, and collaborative culture were found to positively influence engagement in product development initiatives. However, gaps were identified in innovation-related competencies, digital marketing skills, and access to advanced production technologies. Stakeholder interviews and survey data further indicated a high level of awareness regarding the importance of sustainability and value addition, yet limited mechanisms were in place for translating these perceptions into actionable strategies.

1.1 Qualitative Insights from Community- Based Focus Group Discussions The qualitative phase of the study employed focus group discussions to explore local knowledge, experiences, and shared perspectives within community enterprises. Using content analysis techniques, key dimensions of participation emerged across three strategic areas: product development, sustainable production, and product innovation. Participants consistently emphasized the importance of community-driven branding, environmental stewardship, and leveraging local wisdom through innovation. These insights helped shape the foundation for a context-sensitive model that reflects both the capacity and aspirations of rural enterprises. Table 1 presents these dimensions in detail, highlighting their relevance in aligning internal practices with external market demands.

Table 1

Integrated Participation Components in the Development of Product Potential for Community Enterprises

Participation Dimension	Key Factors	Examples of Activities / Key Findings
Product Development	Marketing and Distribution Channels	• Utilization of online marketplaces (e.g., Shopee, Lazada, Facebook) • Use of social media for product promotion • Storytelling to communicate product identity • Branding through community names • Certification and product standards • Participation in trade fairs and exhibitions
Sustainable Production Practices	Resource and Environmental Management	• Use of renewable energy in production • Application of green technologies • Quality control systems • Adoption of circular economy principles (e.g., resource recovery, product life cycle design)
Product Innovation	Market Access and Brand Creation	• Diversification of distribution channels (online platforms, direct sales, trade shows) • Social media and content marketing strategies • Community-based branding • Narrative-driven product positioning

Participation Dimension	Key Factors	Examples of Activities / Key Findings
		Product quality assurance and certification initiatives

The development of product potential in community enterprises requires not only technological or design-based interventions, but also active and systematic stakeholder participation. The findings summarized in Table 1 reveal how integrated participation plays a strategic role across three key dimensions: product development, sustainable production, and product innovation. Each dimension is supported by context-specific activities and localized strategies that contribute to enhancing competitiveness and generating long-term economic value.

In the area of product development, community members were actively involved in market-oriented practices, such as the use of digital sales platforms (e.g., Shopee, Lazada) and social media channels for promotion. These practices were complemented by storytelling techniques that connect product identity with cultural heritage, reinforcing brand authenticity. Branding strategies that leveraged community names and participation in product exhibitions contributed to raising visibility and fostering trust among consumers.

With regard to sustainable production practices, the focus shifted toward environmental responsibility and efficient resource management. Community enterprises were found to adopt renewable energy solutions, green technologies, and quality control systems. Importantly, principles of the circular economy—such as the reuse of materials and design for sustainability—were recognized and gradually integrated into local production processes, demonstrating environmental adaptability alongside economic goals.

In the third dimension, product innovation, the emphasis was placed on expanding market access and building brand equity. Strategic activities included the diversification of distribution channels, content marketing, and narrative-driven product positioning. The deliberate use of social media and community-based branding not only enhanced product differentiation but also strengthened local ownership of innovation processes. Certification and quality assurance were also seen as critical enablers for scaling up.

Overall, the integration of participatory mechanisms into the enterprise value chain plays a foundational role in aligning internal capabilities with external market demands. This reinforces the central thesis that sustainable competitiveness stems from bottom-up innovation coupled with inclusive stakeholder engagement.

1.2 Quantitative Data Analysis: Structural Equation Modeling (SEM) The structural equation modeling (SEM) analysis was employed to examine the causal relationships among key latent variables proposed in the conceptual framework for enhancing the product potential of community enterprises. Prior to analysis, statistical assumptions were assessed and confirmed. A sample size of 140 respondents was deemed appropriate for SEM procedures, and the data met normality assumptions, with skewness and kurtosis values for all indicators falling within acceptable thresholds (± 2), consistent with best practices in SEM analysis (Kline, 2016).

Figure 1

Structural Equation Model (SEM) Illustrating the Causal Relationships among Innovation, Product Value Addition, Development Capacity, and Resource Efficiency in Community Enterprises

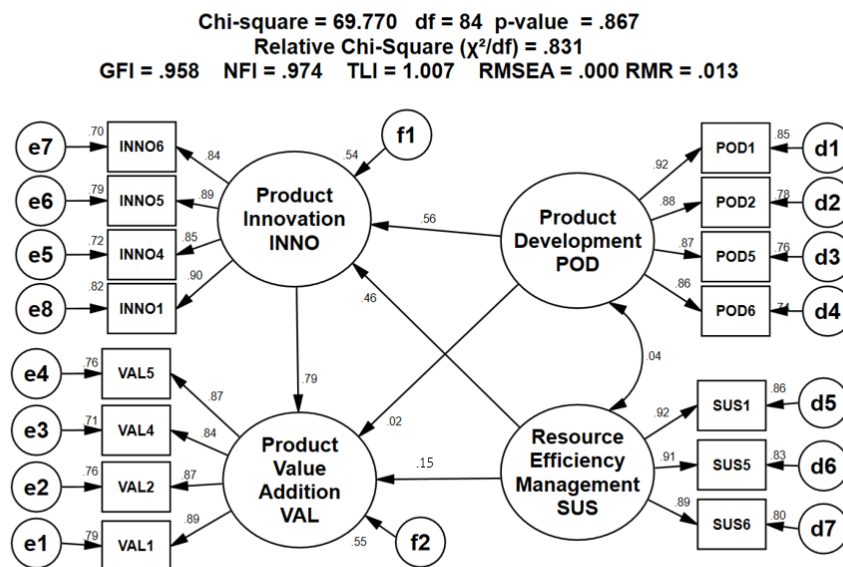


Figure 1 presents the validated structural model, which comprises four latent constructs: Product Innovation (INNO), Product Value Addition (VAL), Product Development (POD), and Resource Efficiency Management (SUS). The model demonstrates excellent fit with empirical data, as evidenced by the fit indices: Chi-square (χ^2) = 69.770, degrees of freedom (df) = 84, p-value = 0.867, relative χ^2/df = 0.831, GFI = 0.958, NFI = 0.974, TLI = 1.007, RMSEA = 0.000, and RMR = 0.013. These values confirm that the hypothesized relationships closely align with observed data. The strongest direct effect was observed between Product Innovation and Product Value Addition (β = 0.87), indicating that innovation plays a pivotal role in enhancing value creation within community-based enterprises. Additionally, Product Innovation significantly influenced Product Development (β = 0.56), underscoring its central role in driving capacity building and product quality. In contrast, the effect of Product Value Addition on Resource Efficiency Management was minimal (β = 0.15), suggesting that value creation activities have not yet translated into improved sustainability practices. This may reflect limited access to green technologies or gaps in operational knowledge at the enterprise level. Overall, the results validate the theoretical proposition that innovation-driven strategies are instrumental in advancing both the competitive edge and economic sustainability of community enterprises. The SEM confirms that fostering innovation not only boosts value creation but also strengthens product development capacities essential for market competitiveness and long-term impact.

2. Development of a Strategic Framework for Enhancing Product Potential Based on empirical data, literature review, and theoretical synthesis, a strategic framework was constructed comprising four integrated dimensions: (1) product innovation (This research selected a prototype product, namely Golden Oyster Mushroom Skin Cream, which is a prototype product of the community kiss enterprise from the Creative Mushroom Village Enterprise), (2) sustainable production practices, (3) value-added strategies, and (4) market expansion mechanisms. This framework emphasized the importance of aligning local wisdom with technological adaptation and open innovation. The process included context analysis, prototype design, resource optimization, and iterative feedback from stakeholders. The resulting framework served not only as a model for capacity building but also as a tool for mobilizing internal and external partnerships for long-term competitiveness.

Table 2

Summary of expert evaluation of the prototype product (Golden Oyster Mushroom Cream Community Product) : development Product Potential for Community Enterprises

Evaluation Criteria	Quantitative Assessment	Qualitative Expert Feedback
1. Accuracy of the Prototype (Correctness)	Mean = 4.66 (SD = 0.424) Rated between high and very high	The formulation and cream texture align well with principles of natural skincare. Experts confirmed the prototype's scientific validity and suggested adding examples of quality testing procedures to increase product credibility.
2. Appropriateness for Target Users (Suitability)	Mean = 4.54 (SD = 0.423) High level of agreement	Experts agreed with the suitability of the formula and packaging. They recommended adjusting the fragrance and texture to match local climate conditions and conducting real-use product trials.
3. Feasibility of Community-Based Production (Feasibility)	Mean = 4.40 (SD = 0.442) High feasibility reported	The prototype is considered highly feasible for community-level replication. Experts advised developing contingency plans for raw material sourcing and implementing internal quality control systems.
4. Practical Benefits of the Prototype (Usefulness)	Mean = 4.66 (SD = 0.410) Very high user benefit perception	Consistent with quantitative findings, experts noted that the cream effectively increases skin hydration and offers good perceived value. Long-term use monitoring and expansion to other skincare products were also recommended.

The expert evaluation of the prototype product developed under the research framework to enhance the product potential of community enterprises demonstrated consistently high levels of quality, feasibility, and applicability across four key assessment dimensions. The assessment incorporated both quantitative and qualitative measures to provide a holistic evaluation of the product's market readiness and developmental strength.

In terms of accuracy of the prototype, experts assigned a high-to-very-high mean score of 4.66 (SD = 0.424), affirming that the formula and cream texture aligned well with principles of natural skin care. Qualitative feedback supported this finding and further suggested the inclusion of documented quality testing procedures to enhance credibility and scientific rigor.

The appropriateness of the product received a mean score of 4.54 (SD = 0.423), indicating a strong fit with the needs and preferences of the target users. Experts emphasized the suitability of the formula and packaging but recommended minor adjustments to scent and texture to better align with the local climate. They also proposed real-world product trials to further validate usability.

Regarding feasibility, the mean score was 4.40 (SD = 0.442), indicating strong potential for community-level production and replication. Experts recognized that sourcing ingredients locally and managing production within the community was realistic, although they recommended developing backup plans for raw material procurement and implementing internal quality control measures.

Lastly, the practical benefits of the prototype were rated very highly, with a mean score of 4.66 (SD = 0.410). Experts noted that the product provided noticeable improvements in skin hydration and was perceived as delivering good value for quality. Recommendations included conducting long-term use evaluations and expanding the product line to include related skincare items.

Overall, the evaluation results support the validity of the prototype as a competitive, community-based innovation. The findings reinforce the research objective by demonstrating that a well-structured, locally rooted product development model can effectively strengthen the market capacity and economic impact of community enterprises.

DISCUSSION

1. Organizational Capacity and Participatory Dynamics in Innovation Development The analysis of internal organizational conditions, development needs, and participatory dynamics revealed that community enterprises possess a foundational readiness to engage in product development. This readiness is characterized by adaptability, community cohesion, and leadership commitment, particularly in recognizing the value of sustainability and innovation. However, the data also indicated structural weaknesses, including limited capacity for value creation, fragmented strategic planning, and insufficient access to innovation resources. These limitations are consistent with the challenges commonly faced by rural enterprises operating within informal or semi-formal economic systems in line with the concept of Choi & Yu, (2022) and Gligorijević & Rusić (2020). Quantitative findings, particularly from structural equation modeling, confirmed that product innovation significantly influences both product potential and value-added outcomes. The strong causal relationship between innovation and competitiveness reinforces the notion that innovation is not an optional enhancement, but rather a central driver of rural economic resilience in line with the concept of Kalantari et al. (2024). However, the moderate scores associated with innovation-related variables in this study suggest that awareness alone is insufficient; targeted investment in innovation capacity, such as training, access to technology, and design thinking, is necessary to bridge this implementation gap. Furthermore, the integration of stakeholder feedback through qualitative methods emphasized the importance of community involvement in shaping development trajectories. Participatory processes ranging from focus groups to prototype evaluation—enabled knowledge exchange and fostered ownership over innovation initiatives. This aligns with the view that community-based innovation is most effective when it draws upon both endogenous knowledge and external expertise in line with the concept of Danish (2020). Consequently, a key implication of this study is the need to establish support mechanisms that facilitate such hybrid innovation models, which combine local insight with structured development tools to elevate rural enterprises into the competitive commercial space.

2. Applicability and Adaptability of the Strategic Innovation Framework The development of a strategic framework for enhancing the product potential of community enterprises marks a significant contribution to both theoretical and practical discourse on rural innovation. The framework, grounded in empirical findings and refined through expert validation, integrates key dimensions product development, sustainability, innovation, and value creation into a cohesive model for enterprise advancement. This multidimensional structure reflects the growing recognition that successful community enterprises must evolve beyond production-centered models and adopt innovation as a systemic, strategic function in line with the concept of Kalantari et al. (2024) and Rodjam, C., Chanthakit, P., Chotianusorn, E., Janmuangthai, W., Woraphong S. and Czarnecki, D., (2024: 3096-3104). The process of framework design in this study was methodologically rigorous, combining qualitative insights with quantitative validation through structural equation modeling. This approach ensured that the resulting model is not only theoretically sound but also practically adaptable to community-specific contexts. The integration of stakeholder participation, local wisdom, and market-oriented thinking exemplifies in line with the concept of Danish (2020) describes as context-sensitive innovation where traditional knowledge systems are leveraged alongside formal R&D to maximize product-market fit. By emphasizing adaptability, the framework accommodates the diverse capabilities and constraints of rural enterprises, thus avoiding the pitfalls of one-size-fits-all solutions. Moreover, the participatory design approach enhanced community ownership of the framework, increasing the likelihood of its sustained use and impact. This aligns with in line with the concept of Choi and Yu (2022); Chumpon Rodjam,

Panyada Chantakit, Eakolarn Chotianusorn and Preecha Panoram. (2022: 160-168) and Tawatchai Suphuan. (2022: 1-11) who argue that community engagement in innovation processes leads to stronger commitment and long-term viability. The framework not only facilitates tangible improvements in product quality and branding but also serves as a decision-making tool for planning, resource allocation, and market expansion. As such, it offers a scalable and transferable model for rural development practitioners and policymakers seeking to enhance the competitiveness of grassroots enterprises while fostering inclusive economic growth.

Recommendations

1. Recommendations for Practical Application

1.1 The proposed framework should be adapted and pilot-tested in different communities based on their local resources, skills, and market conditions.

1.2 Multi-sectoral support networks involving government, private, and academic actors should be established to promote sustainable, inclusive innovation systems.

2. Recommendations for Future Research

2.1 Future studies should explore specific product categories such as health, herbal, and organic goods to develop targeted innovation strategies.

2.2 Localized tools for assessing enterprise capacity and product quality should be created to guide decision-making at the community level effectively.

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PERCEIVED USEFULNESS AND BEHAVIORAL INTENTION TO USE SMALL ELECTRIC PUBLIC TRANSPORTATION OF SECONDARY CITIES IN THAILAND

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ABSTRACT

Small electric public transportation systems are now seen as an essential part of creating sustainable mobility infrastructures due to Thailand's secondary city growth and the increasing need to lessen environmental effects. This conceptual study seeks to integrate existing knowledge and present a framework elucidating the relationship between perceived utility and the behavioral intention to utilize tiny electric public transportation in Thailand's secondary cities. An examination of both domestic and international literature indicates that perceived usefulness encompasses three principal dimensions: (1) perceived service quality, which includes safety, convenience, cleanliness, and reliability; (2) perceived relative advantage over existing services, such as cost-effectiveness, environmental sustainability, and enhanced comfort; and (3) perceived risk, which involves apprehensions regarding safety, system reliability, and unfamiliarity with the technology.

The results show that passengers' propensity to use small electric public transportation services rises when they believe that these services provide better quality, more safety, and an improved travel experience. This study presents an integrated conceptual framework that can underpin future empirical research and offer critical insights for policy development and strategic planning of small electric public transportation systems in Thailand's secondary cities. The framework seeks to facilitate the creation of secure, effective, and sustainable mobility solutions.

Keywords: Perceived Usefulness, Behavioral Intention, Small Electric Public Transportation, Secondary Cities

INTRODUCTION

Thailand's public transportation infrastructure is under mounting pressure due to rapid urban expansion, increased private vehicle use, and intensifying environmental challenges. These challenges are especially pronounced in secondary cities, where infrastructural deficiencies, limited access to public transportation, and insufficient system integration have heightened the demand for more adaptable and sustainable mobility solutions. Compact electric public transportation options, such as microtransit vehicles and e-tuktuks, which have been implemented in many nations (Buenavista et al., 2024; Base et al., 2024; Siriket & Luksamee-Arunothai, 2023), have emerged as viable alternatives. This trend aligns with Thailand's transportation decarbonization policy, which indicates that the transport sector accounts for roughly 32% of the country's total CO₂ emissions and underscores the adoption of electric vehicles as a strategic approach to achieving the Net Zero objective (Pipitthanathunyathorn et al., 2025). Likewise, numerous Asian nations, such as the Philippines, China, and Indonesia, have accelerated the transition to electric public transportation to reduce pollution, alleviate traffic congestion, and lower energy costs (Wu et al., 2019; Buenavista et al., 2024). These accomplishments collectively highlight the significant potential of tiny electric public transit as a sustainable mobility solution for Thailand's secondary cities.

Examining the determinants of individuals' intention to use electric public transportation has emerged as a pivotal focus in modern transportation research. Common theoretical frameworks in this field are the Technology Acceptance Model (TAM) and the Theory of Planned Behavior (TPB), which assert that perceived usefulness (PU) and perceived ease of use (PEOU) significantly affect behavioral intention (BI) (Davis, 1989; Wu et al., 2019). Empirical research on the adoption of electric public transportation, including autonomous shuttles, e-jeepneys, e-tuktuks, and microtransit, consistently reveals that perceived advantages such as cost efficiency, safety, environmental sustainability, and convenience are pivotal factors influencing users' attitudes and decisions to embrace these services (Golbabaee et al., 2022; Base et al., 2024; Zulueta et al., 2024). Furthermore, environmental concern has been recognized as a significant factor that enhances the perceived usefulness of green technologies and positively influences the intention to adopt electric vehicles (Wu et al., 2019). In the Thai context, Siriket and Luksamee-Arunothai (2023) discovered that the simplicity of use and physical attributes of cars greatly influence the decision to utilize micro transit services like MuvMi. Research on e-Tuktuk and e-jeepney services indicates that service quality, including safety, reliability, and convenience, significantly impacts users' behavioral intentions (Base et al., 2024; Zulueta et al., 2024).

This conceptual article seeks to examine the theoretical underpinnings and empirical data concerning perceived usefulness and the intention to utilize small electric public transportation, specifically within the context of Thailand's secondary cities, an area where systematic research is scarce. This research synthesizes pertinent studies to identify the principal elements affecting the acceptance of electric public transit, which include usability, safety, service quality, environmental concern, and support from policies and urban environments. The essay presents a cohesive conceptual framework intended to underpin future empirical research. This framework is anticipated to enhance the design and implementation of efficient and sustainable small electric public transportation systems in Thailand's secondary cities.

OBJECTIVE

To develop the conceptual framework, the antecedent and consequent of the perceived usefulness and behavioral intention to use small electric public transportation.

Theoretical Background

1. Sociodemographic Ability to Use Public Transportation

An individual's ability to use public transportation services is influenced by socio-demographic factors, including age, gender, income, educational level, household size, private vehicle ownership, and economic standing. These attributes directly affect travel patterns and public transportation utilization behavior. Kafi et al. (2024) assert that the essential ability of individuals to utilize public transport services is a pivotal determinant of travel decisions, especially in Southeast Asia, where income inequality and infrastructural deficiencies are significant.

Several studies demonstrate how important demographic considerations are in influencing how people use public transportation. For example, advancing age is frequently linked to a heightened demand for transportation systems that are secure and user-friendly, whereas younger and working-age demographics typically favor travel alternatives that are more rapid and adaptable (Limtanakool et al., 2006). Income is a pivotal factor influencing travel options; persons with higher earnings generally prefer private vehicle usage, whereas those with lower incomes tend to depend on public transportation. Jakobsson et al. (2011) discovered that gender disparities and family configurations affect travel frequency and patterns, highlighting that women prioritize safety more than males.

Individual capability is particularly important in the setting of small electric public transit in Thailand's minor cities. These localities frequently encounter limitations associated with household income levels and restricted access to transportation infrastructure. The effectiveness and affordability of new mobility services are especially important to low-income and older populations. Consequently, comprehending socio-demographic factors in public transportation access is crucial for developing electric transit systems that correspond with the structural constraints and distinctive traits of local communities.

2. Public Transport Provision Capability

External factors that enable the utilization of public transportation significantly influence travel behavior, especially through the elements that comprise public transport provision capacity. This competency includes service availability, accessibility, and quality, as defined by Michie et al. (2011). Kafi et al. (2024) assert that the availability of transport services influences customers' actual access to public transportation an especially critical consideration in developing nations where transportation networks are often fragmented and inequitable. Multiple studies highlight that the availability and frequency of services are fundamental to consumers' mode choice decisions; regular and punctual operations significantly enhance the desire to utilize public transport (Dell'Olio et al., 2011; Borhan et al., 2019). Research on e-Tuktuks and contemporary jeepneys in the Philippines indicates that inconsistent service frequency and schedule unpredictability serve as substantial obstacles to user acceptance (Base et al., 2024; Zulueta et al., 2024).

In addition to the provision of safe walkways, boarding locations, and infrastructure that efficiently links to key routes, accessibility is another important spatial determinant (Murray & Stimson, 1998). Transport for London (2010) indicates that an ideal walking distance to encourage public transport utilization is between 400 and 500 meters. In Thailand's secondary cities, where pedestrian pathways and infrastructure are frequently inadequate, accessibility emerges as a fundamental criterion for service design. According to earlier studies (Eboli & Mazzulla, 2009; Hu et al., 2015), users' happiness and propensity to utilize public transportation are significantly influenced by factors such as safety, comfort, cleanliness, information availability, and dependability. Research conducted in Asia demonstrates that

electric vehicles offer a more comfortable experience, produce reduced noise, and are more ecologically sustainable elements that augment customers' perceived utility.

The capacity of public transport provision serves as an external structural aspect influencing the viability of adopting electric public transport. It acts as a vital catalyst for promoting behavioral changes towards the adoption of tiny electric public transit in secondary cities.

3. Sustainable Public Transportation

Green transportation denotes transportation systems engineered to mitigate environmental effect, decrease carbon emissions, and foster enduring sustainable mobility. This notion includes the use of clean-energy cars, the development of efficient transportation system designs, and infrastructure that facilitates environmentally sustainable travel practices. Adlim et al. (2025) assert that green mobility is a crucial strategy for advancing Sustainable Development Goals (SDGs) 11 and 13 by reducing carbon emissions and improving quality of life in educational and urban environments. The fundamental elements of green transportation encompass: (1) the utilization of electric vehicles (EVs) that produce minimal greenhouse gas emissions (Ghosh, 2020); (2) the incorporation of renewable energy sources, such as solar or hydropower, for EV charging (Mikalsen, 2021); (3) efficient and multimodal public transportation systems that diminish reliance on private vehicles (Oeschger et al., 2020); (4) supportive infrastructure for walking, cycling, and EV usage, including dedicated bike lanes, pedestrian pathways, and EV charging stations (Sun et al., 2020); and (5) governmental policies that advocate for emission reduction, such as EV tax incentives or limitations on private car usage in urban environments (Banister, 2008).

In Thailand, the advancement of tiny electric public transit in secondary cities closely adheres to the tenets of sustainable transportation. These technologies help reduce air pollution, lower noise levels, and provide safe, clean mobility options for local people, thereby advancing national objectives for sustainable and environmentally responsible urban growth. Additionally, it underscores the importance of sustainable natural resource management and addressing environmental challenges, such as pollution. Chuwichian, P, Soonthornpipit, H, Kulawanich, A, Yoowattana, P, Pongpeng, T, (2025).

4. Motivation for Choosing Environmentally Friendly Public Transportation

The motivation to utilize public transportation encompasses various psychological elements, such as beliefs, social conventions, and perceived behavioral control. Ajzen (1991) posits that behavioral intention is influenced by three key determinants: attitude toward the behavior, subjective norms, and perceived behavioral control. Research on green transportation and electric vehicles (Wu et al., 2019; Base et al., 2024) reveals that customers frequently make decisions based on perceived advantages, including energy efficiency, environmental sustainability, and enhanced travel convenience. An affirmative disposition towards these features directly augments the inclination to utilize such services. Social norms function as a significant motivator, especially in Asian countries characterized by robust communal influence. Kafi et al. (2024) emphasize that social support and environmental values substantially increase persons' incentive to utilize electric public transit.

Hu et al. (2015) illustrate that perceived behavioral control influences users' intentions to utilize public transport when they perceive the service as easily accessible and manageable, such as through frequent vehicle arrivals, conveniently situated stops, or user-friendly booking systems. Empirical research on micro transit systems in Thailand, including MuvMi, confirms that user-friendliness is a pivotal factor in service acceptance (Siriket & Luksamee-Arunothai, 2023).

Motivation variables reflect a set of psychological dynamics that influence people's decisions to use electric public transportation. These elements closely interact with perceived usefulness, socio-demographic capacity, and public transport provision competence to influence behavioral intentions toward the adoption of environmentally friendly mobility services.

METHODOLOGY

This study uses a qualitative research approach to identify relevant factors and explain their interrelationships by doing a thorough literature review and document analysis. The literature was integrated into the study according to established inclusion criteria. A preliminary systematic review was performed to collect concepts and theoretical frameworks concerning socio-demographic capabilities in public transport utilization, eco-friendly public transportation, and motivational factors affecting individuals' choices to utilize green transport services, from both Thai and English sources. The examined literature included both quantitative and qualitative investigations, unrestricted by geographical study sites in Thailand's secondary cities, journal articles, conference papers, master's theses, doctoral dissertations, and other pertinent academic and empirical sources were gathered to discuss the perceived utility and behavioral intention to use small electric public transportation. These documents provided the basis for integrating current knowledge and examining how perceived utility and behavioral intention influence the adoption of small electric public transit.

RESULTS

One crucial strategic solution to new mobility and environmental issues is Thailand's secondary cities' shift to small electric public transportation systems. Secondary cities frequently encounter restricted travel alternatives, disjointed transport systems, and inadequate infrastructure; hence, comprehending passenger behavior is crucial for formulating policies and services that correspond with local requirements. This study conceptualizes perceived usefulness as a crucial antecedent affecting the behavioral intention to utilize small electric public transportation, consisting of three dimensions: perceived service quality, perceived relative advantage, and perceived risk, all of which significantly influence user decision-making.

1. Perceived Service Quality refers to passengers' evaluation of the standards, efficacy, and provision of electric public transport services, encompassing convenience, safety, cleanliness, punctuality, and reliability. Previous research consistently indicates that service quality is a significant factor influencing perceived usefulness, which represents the value passengers obtain from the service (Eboli & Mazzulla, 2009; Dell'Olio et al., 2011). Studies on e-Tuktuk and contemporary jeepney services in the Philippines indicate that comfort, safety, and reduced noise levels are distinguishing characteristics that improve service perceptions relative to traditional modes (Base et al., 2024; Zulueta et al., 2024). In Thailand, microtransit services such as MuvMi demonstrate that enhanced accessibility, clearly designated pickup locations, and app-based reservation systems elevate perceived service quality (Siriket & Luksamee-Arunothai, 2023). Moreover, the performance of service professionals has been shown to positively affect user satisfaction in public van services (Songjarern, Kongpan, & Sansuk, 2022). In general, superior service quality elevates perceived utility and directly increases passengers' desire to embrace the service.

2. Perceived Relative Advantage denotes the degree to which customers regard electric public transit as preferable to current alternatives, like minibuses, motorcycles, or private automobiles. Research from the Philippines and China demonstrates that customers acknowledge the environmental

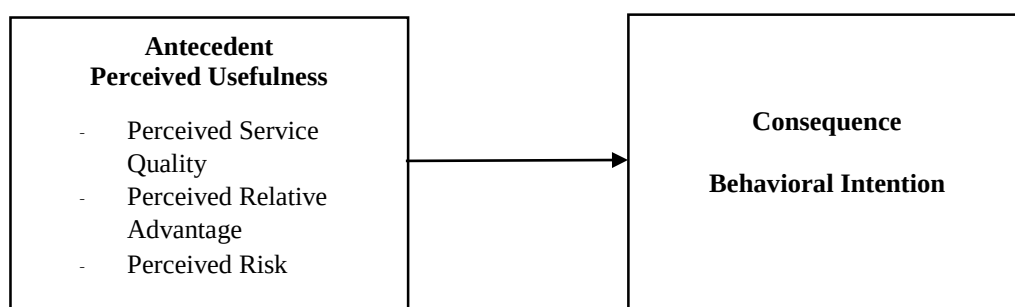
advantages, improved safety, decreased travel expenses, and increased comfort linked to electric vehicles, promoting a transition from conventional transportation methods (Buenavista et al., 2024; Wu et al., 2019). In Thailand's secondary cities, where current systems frequently face challenges with cleanliness, reliability, and safety, the perception of electric transport as a contemporary, silent, low-emission, and more agreeable alternative markedly increases its popularity.

3. Perceived Risk denotes the level of uncertainty passengers attribute to utilizing small electric public transportation, including apprehensions regarding battery depletion, the safety of compact vehicles, inconsistent service frequency, or unfamiliarity with technology. Prior studies indicate that perceived risk adversely affects attitudes and behavioral intentions (Wu et al., 2019). Local information suggests that passengers are apprehensive regarding vehicle durability, route reliability, and maintenance. Kafi et al. (2024) assert that perceived risk constitutes a motivational factor; elevated perceived risk diminishes consumers' sense of control over the trip experience, thereby decreasing their intention to utilize the service.

4. Behavioral Intention to Use Electric Public Transport denotes an individual's preparedness, dedication, or probability of opting for electric public transit. The Theory of Planned conduct (Ajzen, 1991) and the Technology Acceptance Model (Davis, 1989) emphasize that behavioral intention is a strong psychological predictor of actual conduct. It embodies a synthesis of beliefs, attitudes, environmental perceptions, benefit evaluations, and risk assessments. In secondary cities, behavioral intention is influenced not only by perceived convenience but also by passengers' perceptions of the service's reliability, safety, quality, and suitability for populations with infrastructural limitations. Consequently, intention is reinforced when users recognize distinct functional advantages and when perceived risks remain within acceptable levels.

Consequently, the researcher has delineated the conceptual framework for the study, as illustrated in Figure 1

Figure 1
Conceptual Framework



CONCLUSION AND FUTURE WORK

An integrated conceptual framework for comprehending the behavioral dynamics related to small electric public transportation use in Thailand's secondary cities is proposed by this study. At the core of this approach is perceived utility, which encompasses perceived service quality, perceived relative advantage, and perceived risk, all of which that jointly affect people' decision to use electric

public transportation. A synthesis of domestic and foreign studies indicates that when users regard electric transport services as superior in quality, convenience, safety, and cost-effectiveness compared to existing options, their desire to utilize these services significantly rises. On the other hand, perceived risks such as worries about safety and the unpredictability of service continue to be significant obstacles that could deter adoption. These findings corroborate previous studies highlighting the significance of service quality and safety in influencing the uptake of electric transportation solutions in developing contexts.

The conceptual analysis indicates that secondary cities encounter structural obstacles, such as inadequate infrastructure, disjointed transit systems, and unequal access to public services. Thus, small electric public transit systems possess significant potential to enhance quality of life and mitigate environmental impacts. The creation of such systems must include demographic features, technical accessibility, and transit service opportunities, as these elements enhance perceived utility and reduce perceived hazards. Policy and service design must be customized to local contexts, prioritizing accessible service sites, suitable route planning, and dependable information systems to guarantee user confidence and safety. The synthesis indicates that behavioral intention will be optimized when electric public transport systems concurrently fulfill user expectations regarding quality, value, and safety.

This study indicates multiple gaps in future research that necessitate more exploration. This includes the impact of social and cultural variables, environmental attitudes, and travel experiences on user behavior in secondary cities. Furthermore, integration of electric transportation with alternative mobility systems via multimodal strategies is still inadequately investigated within the Thai environment. Empirical studies assessing actual behavioral intentions and pilot testing service models in practical settings would provide significant insights and enhance the evidence base for effective policy formulation.

Future developments in small electric public transit should focus on improving user experience and minimizing perceived hazards. This may entail real-time tracking technologies, vehicle designs adapted to secondary-city environments, driver training initiatives, and seamless integration with user-friendly digital payment systems. Further policy-oriented studies on governmental incentives, financial support mechanisms for operators, and long-term environmental effect assessments are also advised. These initiatives will facilitate the integration of tiny electric public transportation as a sustainable and essential element of mobility systems in Thailand's secondary cities. The conceptual ideas articulated herein establish a crucial basis for forthcoming strategic planning in research, service development, and public policy.

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TECHNOLOGY AND USER SATISFACTION IN HARBIN'S SMART SPORTS VENUES: RELATIONSHIPS AND A CAUSAL MODEL

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ABSTRACT

This paper extracts and develops a subset of objectives from a thesis on smart sports venues in Harbin. The aims are: (1) to analyze how technology investment and intelligent infrastructure—operating through technology integration—relate to user satisfaction, and (2) to specify and test a causal model with technology integration as a mediator. A mixed-methods design was used; the quantitative arm surveyed 240 sports-venue users in Harbin and applied structural equation modeling (SEM) with Bootstrap mediation tests. The model achieves strong fit on key blocks (e.g., $\chi^2/df \approx 1.315$; GFI ≈ 0.955 ; CFI ≈ 0.988 ; RMSEA ≈ 0.036). Path estimates show positive effects from technology investment and intelligent infrastructure on technology integration, and from technology integration on user satisfaction; Bootstrap results support significant mediation of technology integration between both investment/infrastructure and satisfaction.

Keywords: Smart sports venue; user satisfaction; user experience (UX); sports management

INTRODUCTION

Smart sports venues have emerged as living laboratories where sensing, connectivity, analytics, and service design converge to enhance user experience and operational performance. In the broader “Internet and digital age” of sport, digitalization reshapes value creation across venue operations, fan engagement, and data-driven decision-making (Jiawu, 2019). At the facility level, intelligent construction integrates networked infrastructure, computational platforms, and interoperable systems—an “Internet+” approach—to deliver seamless, real-time services at scale (Jingyun, 2021; Li, 2019). Parallel advances in IoT, AI, and cloud architectures provide the technical backbone for “smart stadiums,” enabling automation, monitoring, and responsive user interfaces that can lift satisfaction when effectively integrated (Mahdi et al., 2021; Molanes et al., 2018; Panchanathan et al., 2019).

Despite these advances, the mechanism linking technology investment and intelligent infrastructure to user satisfaction remains under-specified unless we account for the integration layer—how systems, processes, and staff capabilities knit technologies into a smooth, end-to-end service. Recent scholarship emphasizes digital technologies as enablers of new service scenarios and performance uplift across the sports service industry, but it also implies that benefits materialize through coherent integration rather than isolated hardware upgrades (Liu et al., 2022; Li & Li, 2021; Li et al., 2021). In entertainment-oriented deployments, IoT-led modernization can transform spectator experience and venue efficiency, reinforcing the need to model both direct and mediated pathways from investment and infrastructure to satisfaction (Navandar et al., 2025; Mahdi et al., 2021).

This study responds to that gap by focusing on technology integration as a mediating mechanism in Harbin's smart sports venues. Using structural equation modeling (SEM), we jointly estimate measurement and structural relations among technology investment, intelligent infrastructure,

technology integration, and user satisfaction. SEM is well-suited to this task because it tests theoretical fit and directional paths simultaneously while benchmarking model adequacy against stringent criteria (e.g., χ^2/df , RMSEA, GFI, CFI, TLI) that guide interpretability and generalizability. Consistent with recommended thresholds (e.g., $\chi^2/df \approx 1-3$; $RMSEA \leq .08/.05$; $GFI/CFI \geq .90$ with $\geq .80$ acceptable), our model attains very good fit, supporting subsequent inferences about direct and indirect effects (Hou & Wen, 2005; Wu, 2012, as summarized in the thesis).

Together, these considerations motivate two aims presented in the accompanying paper: (1) to analyze how technology investment and intelligent infrastructure—operating through technology integration—relate to user satisfaction in Harbin's venues; and (2) to specify and test a causal model in which integration mediates the upstream effects on satisfaction. By centering the integration layer, the study clarifies where managers should concentrate resources to translate digital capacity into meaningful user outcomes. (See Results and Discussion sections in the main paper for fit indices and path estimates.)

OBJECTIVE

1. To identify and quantify the relationships among technology investment (TI), intelligent infrastructure (II), technology integration (TIN), and user satisfaction (US), distinguishing direct and indirect links.
2. To create and validate a causal prediction model (SEM) in which TIN mediates the effects of TI and II on US, reporting fit indices, reliability/validity, and total effects for decision use.

METHODOLOGY

Research Design

This study employs a quantitative, cross-sectional survey design to examine relationships among technology investment (TI), intelligent infrastructure (II), technology integration (TIN), and user satisfaction (US). Measurement quality is established through confirmatory factor analysis (CFA), followed by structural equation modeling (SEM) to estimate direct, indirect, and total effects and to assess overall model fit. Fit benchmarks (e.g., χ^2/df , RMSEA, GFI, CFI, IFI, AGFI) follow recognized criteria summarized in the thesis.

Population and Sample

The target population comprises users of sports venues in Harbin. A random sample of 240 venue users was planned, with the sample size justified at $20\times$ the number of observed items (12 indicators $\square$ 240 respondents), exceeding the common 5–10 $\times$ rule of thumb to ensure robustness and statistical power. Sampling was conducted across several sports venues in Harbin, with clear instructions to provide truthful responses to support representativeness.

Data Collection

Data were gathered via a **questionnaire survey** administered **online and offline** (using Questionnaire Star), with **anonymous** participation. Instrument development followed a literature review on TI, II, TIN, and US to ensure content alignment. The questionnaire included:

Data Analysis

Descriptive Analysis

We first profiled respondents and scale behavior to establish context and data quality. Demographic and usage variables (e.g., gender, age, purpose/frequency of venue use) were summarized with frequencies and percentages; for each construct—technology investment (TI), intelligent

infrastructure (II), technology integration (TIN), and user satisfaction (US)—we computed item-level and composite means and standard deviations to gauge central tendency and dispersion. Prior to modeling, we screened missing data, outliers, and distributional shape (skewness/kurtosis). Factorability diagnostics then confirmed adequacy for confirmatory analysis: KMO = 0.873–0.899 with Bartlett's test $p < .001$, indicating sufficient shared variance for latent-construct modeling.

Inferential Analysis

Measurement quality was established via CFA for TI, II, TIN, and US. The model achieved excellent global fit— $\chi^2/df = 1.315$, GFI = 0.955, AGFI = 0.931, IFI = 0.988, CFI = 0.988, RMSEA = 0.036—meeting recommended thresholds. Convergent validity was supported by standardized loadings $> .60$ with CR $> .70$ and AVE $> .50$, and discriminant validity was verified by $\sqrt{\text{AVE}}$ exceeding inter-construct correlations.

structural equation model (SEM) using maximum likelihood to test direct, indirect, and total effects among TI, II, TIN, and US. The final structural model retained excellent fit— $\chi^2/df = 1.312$, GFI = 0.956, AGFI = 0.928, IFI = 0.984, CFI = 0.983, RMSEA = 0.036—and statistical significance of paths was assessed via critical ratios (C.R. ≥ 1.96 at $p < .05$) with standardized coefficients (β) reported for interpretation and comparability.

RESULTS

Descriptive Results

A total of 240 venue users in Harbin were surveyed. Demographic and usage characteristics (e.g., gender, age, purpose, and frequency of venue use) were summarized with frequencies and percentages to contextualize the analytic sample and assess representativeness across multiple venues. Construct-level and item-level descriptive statistics (means, standard deviations) were computed for technology investment (TI: IoT, mobile applications, AI), intelligent infrastructure (II: intelligent security, mobile communication, intelligent navigation), technology integration (TIN), and user satisfaction (US) to profile central tendency and dispersion prior to modeling. Factorability diagnostics indicated adequate shared variance for latent-construct modeling: KMO = 0.873–0.899 and Bartlett's test $p < .001$.

Inferential Results

Measurement Model (CFA)

Confirmatory factor analysis established the reliability and validity of TI, II, TIN, and US. The measurement model achieved **excellent global fit— $\chi^2/df = 1.315$, GFI = 0.955, AGFI = 0.931, IFI = 0.988, CFI = 0.988, RMSEA = 0.036**—consistent with recommended thresholds. Convergent validity was supported by standardized loadings $> .60$ and by **CR $> .70$ and AVE $> .50$** ; discriminant validity was evidenced by **$\sqrt{\text{AVE}}$ exceeding inter-construct correlations**. Together, these findings justified proceeding to structural estimation.

Structural Model (SEM)

The structural equation model retained **excellent fit— $\chi^2/df = 1.312$, GFI = 0.956, AGFI = 0.928, IFI = 0.984, CFI = 0.983, RMSEA = 0.036**—indicating strong correspondence between the hypothesized structure and the observed covariance matrix. Path significance was evaluated via **critical ratios (C.R. ≥ 1.96 , $p < .05$)** with standardized coefficients (β) reported for interpretability.

Table 2. Standardized Path Coefficients (SEM)

Structural Path	β	C.R.	p	Support
TI $\rightarrow$ TIN	0.351	3.069	.002	Supported
II $\rightarrow$ TIN	0.476	3.878	< .001	Supported
TIN $\rightarrow$ US	0.271	2.146	.032	Supported
TI $\rightarrow$ US	0.333	2.999	.003	Supported
II $\rightarrow$ US	0.292	2.339	.019	Supported
Notes: All direct paths are positive and significant, indicating TI and II shape both TIN and US, while TIN contributes to US.				

These estimates indicate that (a) upstream inputs—**TI** and **II**—positively shape the **integration layer** (TIN) and user outcomes (US), and (b) **TIN** itself contributes positively to **US**. Mediation (Bootstrap Table 3. Mediation Effects (Bootstrap, 5,000 resamples; 95% BC CI) To test whether TIN mediates the effects of TI and II on US, bias-corrected Bootstrap procedures (5,000 resamples; 95% CIs) were applied. Mediation was inferred when the indirect-effect CI excluded zero ($H_0: a \times b = 0$).

Chain	Effect Type	Estimate	95% CI (BC)	p	Interpretation
TI $\rightarrow$ TIN $\rightarrow$ US	Direct	0.279	[0.091, 0.569]	.006	Significant
	Indirect	0.080	[0.003, 0.253]	.040	Partial mediation
	Total	0.359	[0.162, 0.636]	.001	Significant
II $\rightarrow$ TIN $\rightarrow$ US	Direct	0.307	[0.004, 0.670]	.048	Significant
	Indirect	0.136	[0.012, 0.423]	.033	Partial mediation
	Total	0.443	[0.195, 0.745]	.001	Significant
Notes: Mediation is inferred where the 95% BC CI for the indirect effect excludes zero. Both chains show partial mediation by TIN.					

Synthesis of Inferential Evidence

The excellent model fit, significant direct effects from TI and II to both TIN and US, and significant indirect effects via TIN together confirm an integration- first mechanism: while investment and infrastructure each improve satisfaction on their own, a larger share of value is realized when technologies are coherently integrated into user- facing processes and supports. This pattern justifies managerial prescriptions that prioritize improvements in system responsiveness, interoperability/process simplicity, and staff capability as the most efficient route to raising US under real-world resource constraints.

CONCLUSION AND FUTURE WORK

This study addressed two linked aims: (1) to clarify how technology investment (TI) and intelligent infrastructure (II) relate to user satisfaction (US) in smart sports venues, and (2) to validate a causal model in which technology integration (TIN) operates as the core mechanism translating upstream inputs into user outcomes. Using a cross-sectional survey of venue users in Harbin and a rigorously validated SEM, we find a consistent pattern: TI and II each improve US directly, and their

impact is amplified when effects flow through TIN. In short, technology becomes experience through integration.

Measurement quality underpins these inferences. Constructs display adequate reliability and convergent/discriminant validity, and global fit indices for both measurement and structural models meet widely accepted thresholds, reducing concern about model misspecification. Structurally, all hypothesized links are positive and significant: TI $\rightarrow$ TIN, II $\rightarrow$ TIN, and TIN $\rightarrow$ US, with additional direct paths from TI and II to US. Bootstrap tests confirm partial mediation in both chains (TI $\rightarrow$ TIN $\rightarrow$ US; II $\rightarrow$ TIN $\rightarrow$ US). Thus, while investment and infrastructure deliver some satisfaction gains on their own, a larger and more reliable portion of value is realized when technologies are coherently integrated—systems interoperate, processes are simplified, and staff can resolve issues quickly.

These findings yield a practical, integration-first principle for managers. Rather than defaulting to hardware accumulation, sequence budgets toward (a) dependable connectivity and unified access/payment rails; (b) user-facing surfaces that close information gaps in real time (mobile app, wayfinding, in-bowl displays); and (c) operating routines and training that enable staff to handle common failure modes. Track a tight KPI set aligned to the model (CSAT/NPS, entry/checkout time, payment success rate, feature use, complaint rate) and review changes in a regular “integration retro” to link outcomes to specific process or system adjustments.

Theoretical contribution follows from this reframing: TIN is a mediating capability, not a side effect. Two venues can own similar technologies yet produce different user outcomes because the capability to integrate—APIs/SDKs, data handoffs, service flow design, and human support—determines whether upstream inputs reach users as seamless experiences. For funders and policy makers, this implies evaluating integration readiness alongside capital budgets.

Limitations remain. Cross-sectional, self-reported data limit causal certainty; the model centers on satisfaction rather than downstream behaviors (loyalty, advocacy, spend); and segment/venue-type heterogeneity was not tested. Wantayakul N., Decha O., Whangmahaporn B. (2025). Future work should therefore: (1) employ longitudinal or quasi-experimental designs around discrete integration upgrades; (2) run multi-group and venue-type invariance tests to locate the highest marginal returns; and (3) field-test integration bundles (interoperability + staff enablement + real-time support), pairing survey outcomes with operational traces (queue times, app feature usage, incident logs).

Future Work

1. Longitudinal/ Quasi- Experimental Evaluation Implement before- and- after or difference- in-differences designs around specific integration upgrades (e.g., unified access + cashless). Track cohorts across events to estimate causal lift on US and behavior (dwell time, spend, complaints).
2. Multi- Group and Venue- Type Invariance Test measurement invariance and path differences across user segments (age, tech familiarity, visit purpose) and across venue archetypes (arena vs. stadium vs. training facility). Identify where integration investments yield the highest marginal returns.
3. Field Experiments on Integration Bundles Convert the model into A/ B/ n play- tests (e. g. , interoperability + staff enablement vs. interoperability only). Compare total effects on US and operational KPIs; compute cost-to-impact ratios to generate a prescriptive, budget-aware playbook for scale.

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FACTORS AFFECTING THE SUCCESS OF CONDOMINIUM RENTAL BUSINESS IN BANGKOK

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ABSTRACT

This research aims to study the factors affecting the success of condominium rental business in Bangkok. This is a mixed methods research to make the study more effective ; quantitative research : The population and sampling group residents living in condominium in Bangkok of 400 samples by non-probability sampling method and random sampling method and qualitative research : The population and sampling consists of condominium rental business in Bangkok as key informant totaling 10 individuals, using purposive sampling without relying on probability sampling. The research results found that most were aged 31- 40 years. They were single. They had a bachelor's degree, were employed in private companies and had an average monthly income of 30,001- 40,000 baht. The research results found that most people chose an condominium because it was convenient to travel and good location. The reason for moving condominium was because they changed their workplace. They would make the decision themselves. They paid 10,001- 15,000 baht per month in condominium rent. They stayed for less than 1 year and lived alone. They found information from relatives recommendations. They decided to rent a studio room. They chose a furnished condominium and they chose the condominium location because it was close to their workplace. The findings of the marketing mix that influenced the decision to use condominium rental services overall was at the highest level of importance and The findings of the overall success factors in operating an condominium rental business were at a very important level. The hypothesis test result found that different behaviors in using condominium rental services have different effects on the success of condominium rental businesses in Bangkok at a significance level of 0.05. and the different marketing mix factors have different effects on the success of apartment rental business in Bangkok at a significance level of 0.05.

Keywords: success, condominium rental, business

INTRODUCTION

The condominium rental business in Bangkok is one of the high-growth real estate markets due to the rapidly expanding urban structure. The growth of mass transit systems such as the MRT and BTS Skytrains has led to a continuous increase in demand for high-rise housing, particularly among urban workers, the new generation (Gen Y-Z), and expatriates who come to work or reside long-term (Knight Frank Thailand, 2024). Condo rentals have therefore become an important alternative to purchasing a home due to their cost flexibility and mobility (CBRE Thailand, 2022)

However, despite the high potential of the rental condo market, competition has intensified due to an oversupply of units in many locations, as well as changing tenant behavior. Current tenants

prioritize location with access to transportation, safety, building quality, management, service, and reasonable rental prices (REIC,2025). Furthermore, economic changes, such as inflation, maintenance costs, and building control laws, necessitate developers to adjust their strategies to maintain competitiveness (Bank of Thailand, 2025).

Post-COVID-19, Bangkok's condominium rental market has seen a significant recovery, with average occupancy rates recovering to 85–90%. However, tenant behavior has become more sensitive, requiring fully furnished units with high-quality furniture, smart home systems, and high security (area, 2024). Therefore, the key success factors for developers are not just a good location, but also include value proposition strategies, customer experience management, after-sales service, and innovative differentiation.

In addition, the Thai condo rental business is facing competition from new platforms such as Airbnb and online short-term rentals, resulting in legal challenges and requiring operators to adapt their management models to meet tenants who need convenience through digital technology. (kasikornresearch,2025) These factors make the study of the factors affecting the success of the rental condominium business important, both from the perspective of real estate developers, retail investors, project managers as well as public sector policymakers.

Therefore, this research is necessary to analyze the key elements that influence the success of the condominium rental business in Bangkok. This will help operators develop strategies to increase revenue, reduce vacancy rates, and create tangible business sustainability.

OBJECTIVE

To study the factors affecting the success of condominium rental business in Bangkok.

Hypothesis

Hypothesis 1: Different behaviors in using apartment rental services have different effects on the success of condominium rental businesses in Bangkok.

Hypothesis 2: Different marketing mix factors have different effects on the success of condominium rental business in Bangkok.

METHODOLOGY

To study the factors affecting the success of condominium rental business in Bangkok. This is a mixed methods research to make the study more effective. The study methods are as follows:

Population and sample group

Quantitative research : The population includes tenants or residents living in condominium in Bangkok. The sample group includes tenants or residents living in condominium in Bangkok of 400 samples. Operators selected from the vicinity of Incheon Monument and Ratchadaphisek road. Because the occupancy rate of apartments is basically high, a 95% confidence determination is obtained from the size determination of the sample population of Taro Yamane (1973) and the deviation value is equal to 0.05 and sampling by non-probability sampling method and random sampling method.

Qualitative research : The population consists of condominium rental business operators in Bangkok. The sample includes condominium rental business operators in Bangkok, selected from local operators as Key Informant totaling 10 individuals, using purposive sampling without relying on probability sampling.

Research tools

The research tools of this research created a tool for collecting data : quantitative data, questionnaire, qualitative data, in-depth interview.

Data analysis

Data Analysis In this study, the researchers analyzed the data obtained from the questionnaires and in-depth interviews using the following data and statistical analysis guidelines. Quantitative data analysis The researchers analyzed the data obtained from the questionnaires using the following statistical tests. Descriptive statistics Frequency, Percentage, average and standard deviation inferential statistics.

The data obtained from the questionnaire is analyzed for statistical values using techniques for factor analysis and path analysis and processed using t-test statistics and one way anova statistics to prove the assumption at the percentage confidence level. 95 with a ready-made computer program and in order to test consistency and be used for hypothesis testing and qualitative data analysis, the researchers analyzed the data obtained from in-depth interviews with the sample group using content analysis.

RESULTS

The findings of factors affecting the success of condominium rental business in Bangkok aimed to study the factors affecting the success of condominium rental business in Bangkok as follows;

Part 1 : The findings of most were male and female. Most were aged 31- 40 years. They were single. They had a bachelor's degree, were employed in private companies and had an average monthly income of 30,001-40,000 baht.

Part 2 : Data on condominium rental management behavior. The research results found that most people chose an condominium because it was convenient to travel and good location. The reason for moving condominium was because they changed their workplace. They would make the decision themselves. They paid 10,001-15,000 baht per month in condominium rent. They stayed for less than 1 year and lived alone. They found information from relatives recommendations. They decided to rent a studio room. They chose a furnished condominium and they chose the condominium location because it was close to their workplace.

Part 3 : The findings of the marketing mix that influenced the decision to use condominium rental services overall was at the highest level of importance (mean = 4.22). When considering each aspect, it was found that the product aspect was at the highest level of importance (mean = 4.36), followed by the distribution channel aspect at the highest level of importance (mean = 4.26), the physical characteristics aspect at the highest level of importance (mean = 4.24), the promotion aspect at the highest level of importance (mean = 4.22), the price aspect at the high level of importance (mean = 4.10), the personnel aspect at the highest level of importance (mean = 4.11) and the process at the high level of importance (mean = 4.00), respectively.

Part 4 : The findings of the overall success factors in operating an condominium rental business were at a very important level (mean = 4.13). When considering each aspect, it was found that satisfaction was at the highest level of important level (mean = 4.21) and loyalty was at the high level of important level (mean = 4.05), respectively.

Part 5 : The hypothesis test result found that:

The results of the Hypothesis 1 : Different behaviors in using condominium rental services have different effects on the success of condominium rental businesses in Bangkok as follows;

1. The reasons for deciding to rent different condominium have an effect on the success of running an condominium rental business in Bangkok at a significance level of 0.05.
2. The individuals who have different influences on the decision to use condominium rental services have different influences on the success of the apartment rental business in Bangkok at a significance level of 0.05.
3. The different condominium rental costs have different effects on the success of condominium rental business in Bangkok at a significance level of 0.05.
4. The length of time staying in the current condominium has different effects on the success of operating the condominium rental business in Bangkok at a significance level of 0.05.
5. The different sources of information in deciding to rent an condominium have different effects on the success of operating an condominium rental business in Bangkok at a significance level of 0.05.
6. Single rooms and suite room have different effects on the success of condominiums rental business in Bangkok at a significance level of 0.05.
7. The characteristics of unfurnished and furnished condominium have a statistically significant effect on the success of condominium rental business in Bangkok at a significance level of 0.05.

The results of the Hypothesis 2: Different marketing mix factors have different effects on the success of condominium rental business in Bangkok as follows;

1. The different marketing mix factors have different effects on the success of apartment rental business in Bangkok at a significance level of 0.05.
2. The results from in- depth interviews, findings revealed that most entrepreneurs possess all three characteristics of condominium rental business operators: 1) Risk-taking: Most entrepreneurs accept risks that may arise from losses or failures in business operations. This requires entrepreneurs to make quick and careful decisions based on reliable information; 2) Creativity: Most entrepreneurs are creative, seeing opportunities and channels for creating businesses in various environments and 3) Competitors : Able to compete with competitors by creating a business that has unique features and is different, and by using technology to help make it more modern.
3. The findings revealed that external environmental factors have an effect on the success of operating condominium rental businesses in Bangkok, namely : 1) the cultural and social environment and the social conditions of Bangkok as a metropolitan society with a high growth rate; 2) the changing values of condominium living; 3) technological changes; 4) government investment in building the BTS stations or MRT stations or Redline stations; and 5) changing economic factors.

4. The survey results show that the factors that affect the success of condominium rental business in Bangkok include: 1) Floor and location; 2) The room design should be comfortable; 3) The price should be appropriate; 4) room environment; 5) the room is clean and tidy; 6) security system; and 7) corporate condo

CONCLUSION AND FUTURE WORK

The findings of The different marketing mix factors have different effects on the success of apartment rental business in Bangkok at a significance level of 0.05 with Pahasing,B., et al. (2022) ; As for the hypothesis testing, it was determined that business innovation products and processes affect online shopping behavior in terms of cost per time with a significance level of .01, and that innovations in technology and products affect online purchase frequency (times/month) with a statistically significant level of 0.1, and that online shopping behavior cost per time and purchase frequency (times/month) are related to the trend of using the service for future purchases and refinancing.

The results from in-depth interviews, findings revealed that most entrepreneurs possess all three characteristics of condominium rental business operators: 1) Risk-taking: Most entrepreneurs accept risks that may arise from losses or failures in business operations. This requires entrepreneurs to make quick and careful decisions based on reliable information; 2) Creativity: Most entrepreneurs are creative, seeing opportunities and channels for creating businesses in various environments and 3) Competitors : Able to compete with competitors by creating a business that has unique features and is different, and by using technology to help make it more modern with Miller(2020) ; Entrepreneurial Orientation concept in Modern Entrepreneurial Behavior ; Innovativeness, Risk-taking, Creativity and proactiveness / competitive posture.

The findings revealed that external environmental factors have an effect on the success of operating condominium rental businesses in Bangkok, namely : 1) the cultural and social environment and the social conditions of Bangkok as a metropolitan society with a high growth rate; 2) the changing values of condominium living; 3) technological changes; 4) government investment in building the BTS stations or MRT stations or Redline stations; and 5) changing economic factors. with kasikornresearch (2025) ; A key factor influencing the decision to rent a condo in the current era is the development of rail mass transit infrastructure. The expansion of the BTS, MRT, and Red Line train routes has made the areas surrounding BTS stations popular residential areas for those seeking convenient transportation. They also serve as strategic locations that enhance the potential for real estate investment.

The findings revealed that the factors that affect the success of condominium rental business in Bangkok include: 1) Floor and location; 2) The room design should be comfortable; 3) The price should be appropriate; 4) room environment; 5) the room is clean and tidy; 6) security system; and 7) corporate condo with kasikornresearch (2025) ; The residential preferences of urbanites, particularly working-age people in Bangkok, have changed significantly. Previous preferences for low-rise housing have shifted to condominiums, which offer greater convenience. This is a result of rapidly growing urban society, a fast-paced lifestyle, and time constraints. This has led the new generation to choose residences that reduce travel time and accommodate urban lifestyles. In addition, the working age group also attaches importance to privacy, safety and indoor facilities, resulting in a rapid recovery of the Bangkok rental condo market after the COVID-19 situation.

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CONSUMER ATTITUDES TOWARDS SOCIAL RESPONSIBILITY AND THE ENVIRONMENT SURROUNDING BUSINESS

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ABSTRACT

This research aims to investigate consumer attitudes towards Corporate Social Responsibility (CSR). Specifically, the study examines how consumer attitudes toward CSR, encompassing the dimensions of: Economic Responsibility, Legal Responsibility, Ethical Responsibility, Philanthropic Responsibility (or Social Contribution Activities) influence the overall Social Responsibility of Business. The target sample group consists of 400 residents within the Bangkok Metropolitan Area. The research instrument utilized is a questionnaire whose quality has been verified for reliability. Data analysis will be conducted using Multiple Regression Analysis (MRA).

The research results revealed that consumer attitudes towards Ethical Responsibility ($\beta = 0.464$) ranked highest in influence. This was followed by consumer attitudes towards Philanthropic Responsibility (Social Activities) ($\beta = 0.437$), Legal Responsibility ($\beta = 0.265$), and lastly, Economic Responsibility ($\beta = 0.146$). The resulting prediction equation explained 51.6% of the variance in participation (Adjusted $R^2 = 0.516$). This indicates that consumers exhibited the strongest attitude towards the Ethical dimension with statistical significance. The findings can be effectively applied to develop policies and strategies concerning corporate social responsibility for businesses.

Keywords: Consumer, Attitudes, Social Responsibility

INTRODUCTION

The 20-Year National Strategy (B.E. 2561 – 2580 / 2018 – 2037), as mandated by Section 65 of the Constitution of the Kingdom of Thailand B.E. 2560 (2017), stipulates that the state shall establish the National Strategy as the goal for sustainable national development under the principle of good governance. This strategy is intended to serve as a framework for the coherent and integrated preparation of various plans, and must be operationalized to ensure Thailand achieves the vision: “Thailand is a secure, prosperous, and sustainable developed country, driven by the philosophy of the Sufficiency Economy” (Dhanarak Asset Development Co., Ltd.2022).

The dimension of management for sustainability, aimed at becoming a good corporate citizen, comprises three pillars: Environment, Social, and Governance (ESG), integrated with business operations. The goal is to sustainably build strength and stability for Thai society through the dimensions of human resource development, community, and society. This is combined with fostering consciousness in the conservation and restoration of natural resources and the environment, coupled with promoting participation and managing the impacts of business operations on the communities surrounding the establishments. This is considered a matter of business imperative (PTT Public Company Limited, 2022). Corporate Social Responsibility (CSR) is a concept that stimulates organizations to assume accountability

towards society. It is considered an element that helps establish a competitive advantage over rivals in the same business sector, thereby leading to consumer affection or loyalty toward the business (Carroll & Shabana, 2010). Consequently, CSR is viewed as another crucial strategy for conducting business in the contemporary, highly competitive era. This is because it is not merely about generating profit, but also about considering the impact on the public—including the community, society, and the environment. This practice helps to foster trust, credibility, establish a favorable corporate image, and garner support for various initiatives designed to stimulate social change, a matter which large business organizations have begun to prioritize in earnest (Khwanjai Techasensakul, 2021). The implementation of corporate social responsibility activities is also interconnected with the corporate image. If an organization possesses a thorough understanding and consistently conducts these activities, it demonstrates that the administration and management of the organization are voluntarily founded on virtuous principles. This involves considering comprehensive impacts on both internal and external society, thereby establishing an equilibrium among the economy, society, and the environment. This achievement is considered a genuine benefit derived from demonstrating social responsibility. These efforts and actions can be accurately and clearly communicated to consumers and the public, allowing them to perceive the organization through the dimension of a desirable corporate image (Piyapong Aimsamran and Siripak Siritho, 2012). Presently, consumers attach significant importance to businesses that demonstrate social responsibility. This is because such conduct influences consumer attitudes, as modern consumers are highly aware and increasingly concerned about society and the environment.

Consequently, the conventional business model focused exclusively on maximizing profit and minimizing costs may not meet the demands of the current global context. Businesses are therefore necessitated to adapt to ensure they can achieve mutually beneficial growth and generate sustainable returns. This adaptation is essential for building confidence and trust from consumers, which, in turn, leads to enhanced credibility and a positive corporate image. By studying consumer attitudes, businesses or marketers can effectively develop environmentally friendly marketing strategies. This includes planning production processes, and improving quality and standards. Such efforts lead to the creation of a competitive advantage and enable the resolution of issues to meet the demands of consumer segments that prioritize environmentally friendly businesses (Chanakan Unaphrom et al., 2023).

OBJECTIVE

To examine consumer attitudes regarding the social responsibility of business.

METHODOLOGY

For the calculated sample size of 400 individuals, data collection will be conducted using Convenience Sampling. This process involves collecting data from residents within the Bangkok Metropolitan Area. This sampling method is deemed appropriate because the population is large, highly dynamic (or fluctuating), and the true population size cannot be precisely determined/is unknown. The research instrument utilized in this study is a multiple-choice questionnaire, incorporating both open-ended and closed-ended questions, as well as Rating Scale items. The questionnaire was developed by the researcher through the study and synthesis of relevant documents, textbooks, and various research works, ensuring consistency and applicability to this specific study.

The questionnaire used in this research is divided into four sections, as follows:

Part I: Demographic Data / Personal Factors (Including Gender, Age, Education Level, Marital Status, Occupation, and Average Monthly Income)

Part II: Questionnaire on Consumer Attitudes Towards Corporate Social and Environmental Responsibility This section utilizes a Rating Scale questionnaire, where responses are measured and scored using a standardized rating scale (or summated rating scale) based on the total score. There are four dimensions available for selection: Economic Responsibility, Legal Responsibility, Ethical Responsibility, Philanthropic Responsibility (or Social Contribution Activities).

Part III: Questionnaire on the Level of Corporate Social Responsibility and;

Part IV: Other Suggestions / Recommendations. The finalized questionnaire was administered as a pilot test (Try-out) to a sample group to validate the instrument. The sample group used for this pilot testing was not the same as the sample group to be utilized in the main research study. A total of 30 subjects were used for the questionnaire pilot test. The reliability of the questionnaire (specifically the rating scale section) was determined using Cronbach's Alpha (α), which assesses internal consistency. The calculated reliability coefficient of the instrument will be compared against an appropriate standard reliability threshold. The criterion for an acceptable level of reliability for the test instrument is set at 0.7. If any section of the questionnaire yields a reliability coefficient below the established criterion, it must be revised and corrected before being utilized for data collection. The Cronbach's Alpha coefficients obtained from the test are displayed as follows: Economic Cronbach's Alpha is 0.872. Legal Cronbach's Alpha is 0.907. Ethical Cronbach's Alpha is 0.72. Philanthropic Responsibility (Social Activities) Cronbach's Alpha is 0.905. Overall Social Responsibility Cronbach's Alpha is 0.802.

Descriptive Statistics

Descriptive Statistics were employed to characterize the data collected from the study sample. Specifically, Percentages (%) were used to discuss and analyze the sample's demographic factors, including Gender, Age, Education Level, Marital Status, Occupation, and Average Monthly Income.

Arithmetic Mean

The Arithmetic Mean was used to analyze the questionnaire in Part II: Consumer Attitudes Towards Corporate Social and Environmental Responsibility. This includes the following dimensions: Economic Responsibility, Legal Responsibility, Ethical Responsibility, and Philanthropic Responsibility (Social Activities).

$$\bar{x} = \frac{\sum_{i=1}^N x_i}{n}$$

$\bar{x}$ Instead of the arithmetic mean of the sample

$\sum$ Instead of the sum of all points. and n Instead of the number of samples

Standard Deviation

The Standard Deviation was employed to analyze and interpret data, specifically for variables measured on the Interval Scale and Ratio Scale. It is used in conjunction with the Mean to demonstrate the dispersion/spread of scores for each instance/item.

Inference Statistics

Step 1: The researcher identified the independent variables hypothesized to be related to the dependent variable in the study. In this research, the researcher consulted relevant textbooks, documents, and research studies, which provided variables with substantial academic evidence. It was hypothesized that Economic Responsibility, Legal Responsibility, Ethical Responsibility, and Philanthropic Responsibility would be the independent variables related to the dependent variable: Corporate Social Responsibility.

Step 2: Checking the Relationship Between Variables

It is necessary to check the relationship between the variables, ensuring that all independent variables are not highly correlated with one another. If the independent variables are correlated, it will lead to the problem known as Multicollinearity. The method used to test for the existence of correlation among the independent variables is the Variance Inflation Factor (VIF). This analysis will be conducted using statistical software.

Step 3: The empirical model is constructed by writing the relationship in the form of a linear equation.

Step 4: The relationship between the independent variables and the dependent variable is examined using One-Way Analysis of Variance (ANOVA).

RESULTS

General Information of Respondents The analysis of quantitative data collected from a sample of 400 consumers is presented as follows:

Part I: Analysis of Demographic Characteristics

The analysis of the basic data of the 400 consumers is categorized by demographic factors, namely Gender, Age, Education Level, Marital Status, Occupation, and Average Monthly Income. This analysis utilized Percentage and Frequency Distribution statistics and is displayed in Table

Table 1
Shows the frequency and percentage of basic Data

Basic information	number	percentage
.1 gender		
1.1 Male	201	50.25
2.1 Female	193	48.25
3.1 Other	6	1.50
total	400	100
.2 age		
1.2 Age 24 - 18 years old	136	00.34
2.2 Age 35 - 25 years old	129	25.32

3.2Age 45 – 36 years old	78	50.19
4.2Age 55 – 46 years old	46	50.11
5.2Age over 55 years	11	75.2
total	400	100
.3Education Level		
1.3Below a Bachelor's Degree	143	75.35
2.3Bachelor's Degree	215	75.53
3.3Master's Degree	31	75.7
4.3doctorate	11	75.2
total	400	100
.4Marital Status		
1.4single	241	60.25
2.4marry	152	38.00
3.4Divorced/Widowed/Separated	7	1.75
total	400	100
.5Occupation		
1.5Students	201	25.50
2.5Business Owner/Entrepreneur	101	25.25
3.5Employees of private companies	54	50.13
4.5Civil servants/employees of state enterprises	18	50.4
5.5Self-employed	23	75.5
6.5other	3	75.0
total	400	100

From Table 1 : The frequency and percentage distributions of the respondents' basic demographic data are presented as follows: Gender The majority of the respondents were male (n = 201, 50.25%), followed by female (n = 193, 48.25%).AgeThe largest proportion of respondents was aged 18-24 years (n = 136, 34.00%). This was followed by the 25-35 age group (n = 129, 32.25%), the 36-45 age group (n = 78, 19.50%), the 46-55 age group (n = 46, 11.50%), and finally, the group aged over 55 years (n = 11, 2.75%), respectively. Education Level In terms of education, the majority held a Bachelor's degree (n = 215, 53.75%). This was followed by those with less than a Bachelor's degree (n = 143, 35.75%), a Master's degree (n = 31, 7.75%), and finally, a Doctoral degree (n = 11, 2.75%), respectively. Marital Status The majority of respondents were single (n = 241, 60.25%). This was followed by married individuals (n = 152, 38.00%), and finally, those who were divorced/widowed/separated (n = 7, 1.75%). Occupation The largest

occupational group consisted of students (n = 201, 50.25%). This was followed by business owners/entrepreneurs (n = 101, 25.25%), private company employees (n = 54, 13.50%), self-employed individuals (n = 23, 5.75%), government/state enterprise employees (n = 18, 4.50%), and finally, others (n = 3, 0.75%), respectively.

For this research, the researcher investigated data concerning consumer attitudes towards corporate social and environmental responsibility within the Bangkok Metropolitan Area. The analysis was categorized into the following dimensions: Economic Responsibility, Legal Responsibility, Ethical Responsibility, Philanthropic Responsibility (Social Activities), and the Level of Corporate Social Responsibility.

Table 2
Results of Multiple Regression Analysis

Independent variant	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	-1.014	0.383		-2.647	.000***
Social aspects	0.437	0.034	0.455	12.759	.000***
Legal	0.265	0.061	0.282	4.383	.000***
Ethics	0.464	0.132	0.132	3.529	.000***
Economy	0.146	0.064	0.142	2.280	.000***
F-value	107.492				
Sig. (F)	.000***				
R	0.722				
R ²	0.521				
Adjusted R ²	0.516				

Based on the aforementioned table, the researcher can summarize the results of the hypothesis testing as follows: Research Hypothesis 1: Consumer attitude towards Economic Responsibility was found to have a significant influence on Corporate Social and Environmental Responsibility ($p = 0.000$), with a standardized regression coefficient of 0.146.

Research Hypothesis 2: Consumer attitude towards Legal Responsibility was found to have a significant influence on Corporate Social and Environmental Responsibility (0.000), with a standardized regression coefficient = 0.265.

Research Hypothesis 3: Consumer attitude towards Ethical Responsibility was found to have a significant influence on Corporate Social and Environmental Responsibility (0.000), with a standardized regression coefficient of 0.464.

Research Hypothesis 4: Consumer attitude towards Philanthropic Responsibility (Social Activities) was found to have a significant influence on Corporate Social and Environmental Responsibility (0.000), with a standardized regression coefficient = 0.437.

The analysis revealed that the predictive equation developed from this research demonstrated an accuracy of 51.6% in predicting consumer attitudes towards corporate social and environmental responsibility Adjusted $R^2 = 0.516$. The form of the predictive equation is as follows: Consumer attitudes = $-1.014 + \text{Consumer attitudes towards economic responsibility Influence on social responsibility and the surrounding environment of the business } (0.146) + \text{Consumer attitudes Legal responsibility influences social and environmental responsibility around the business } (0.265) + \text{Consumer Attitudes on Ethical Responsibility Influence on social responsibility and the surrounding environment of the business} (0.464) + (0.437)$

CONCLUSION AND FUTURE WORK

Conclusion

Study consumers' attitudes towards business responsibility

It was found that the level of opinion of consumer attitudes on economic responsibility The overall average was 3.44, which is considered moderate It is subdivided into: A business that focuses on maximizing profits and being financially stable. will be more trusted by consumers. A business with transparent and auditable financial management is part of good ethics and social responsibility A business with a certain level of social responsibility is a business that creates jobs and pays fair compensation to employees. A business that continues to grow and is highly profitable will benefit society in the long run Businesses that pay taxes correctly and completely according to the law are the most important thing. This is in line with the concept of social responsibility management and economic responsibility ethics. The first responsibility is to sell products or services that must be satisfied with customers so that the business can sell and survive.

In terms of consumer attitudes towards legal responsibility The overall average is 3.35, which is considered moderate It is subdivided into Businesses that are reliable and socially responsible when they comply with the law. Ensuring that businesses pay taxes and fully comply with government regulations is the most fundamental and most important duty Compliance with labor laws and fair wages to employees is an important factor. Consumers will immediately have negative feelings about the business if they find that the law has been ignored or circumvented Consumers will support businesses that clearly demonstrate that they have transparent and auditable legal management This is in line with the concept of social responsibility management and legal responsibility ethics that all businesses should comply with the law and taxation Compliance with labor laws because if they do not do business, they will be prosecuted.

Consumer Attitudes on Ethical Responsibility The overall average is 3.02, which is considered moderate It is subdivided into businesses, must communicate information about products and services honestly and without exaggeration. Businesses must source raw materials ethically and fairly. Businesses must have a clear policy against corruption or bribery. Businesses must show respect for the diversity and equality of all employees. Non-discriminatory Businesses must be responsible for fully and quickly resolving issues arising from their products or services This is in line with the concept of social responsibility management and ethical responsibility. The ethical aspect of business is related to the

expectations of society that expects a very profitable business. There will be more ethical responsibility than a less profitable business.

Consumer attitudes towards social activities, the overall average was 2.95, which is considered moderate. By supporting businesses that participate in projects or activities that solve current social problems. Businesses that implement social projects continuously and consistently. Reliable Businesses should have social activities related to their products or services. Businesses that implement social projects continuously and consistently. Reliable. Businesses should have social activities related to their products or services. Businesses should innovate to directly solve social and environmental problems. Businesses should provide opportunities for consumers to participate in their social activities. This is in line with the concept of social responsibility management and social responsibility ethics, which is seen as something that businesses can do voluntarily. If the activity is carried out, it will be very popular with the society

A study of consumers' attitudes towards social responsibility and the surrounding environment around the business. The results of the joint multivariate regression analysis showed that

- Consumer Attitudes on Ethical Responsibility ($\beta = 0.464$) The next highest level is consumer attitudes towards social responsibility ($\beta = 0.437$) Consumer attitudes towards legal responsibility ($\beta = 0.265$) Consumer attitudes towards economic responsibility ($\beta = 0.146$) From the above sequence, it can be concluded that the ethical responsibility aspect of the business It has a direct impact on consumer attitudes rather than social activities, laws, and economics It also shows the effectiveness of the business's social responsibility, the driving force for the business's social responsibility views, policies, or strategies.

The results show that ethical responsibility, which consists in communicating information about goods and services, is honest and unpretentious. Raw materials are procured ethically and fairly. is a clear policy against corruption or bribery. Respect for the diversity and equality of all employees It is responsible for fully and promptly resolving problems arising from its products or services It has the highest regression coefficient ($\beta = 0.464$). This indicates that consumers value the ethical aspects of their business Both ethics for consumers and ethics for employees in the organization.

Responsibilities for social activities, which include: Having a project or activity that solves current social problems. There are continuous and consistent social projects Social activities related to products or services. Creating innovations to directly solve social and environmental problems Provide opportunities for consumers to participate in the social activities of the business ($\beta = 0.437$) This indicates that consumers attach importance to the social activities of businesses, such as solving social problems.

Legal Responsibilities This consists of strict compliance with consumer protection laws. Pay taxes and fully comply with government regulations Comply with labor laws and pay fair wages. Do not ignore or avoid the law. Transparent and auditable legal management has the second regression coefficient. ($\beta = 0.265$) This indicates that consumers attach importance to compliance with the law strictly This is what businesses need to do to avoid being prosecuted .

Economic responsibility, which includes Financially stable business. Financial management is transparent and auditable. Jobs are created and fair remuneration is paid to employees. It has the potential to create benefits for society in the long term Pay taxes correctly and completely According to the law, it has the least regression coefficient. ($\beta = 0.146$) This indicates that consumers value the economic side

of the business This aspect is the first responsibility that businesses must do on the basis of accuracy. And if this first step is not followed, it will not be possible to continue the business.

Policy Recommendations

According to the findings, consumers' attitudes towards social responsibility and the surrounding environment of the business § Significant Implications for Business Social Responsibility Therefore, to encourage the social responsibility of businesses. Businesses should consider doing the following:

1. Formulate business policies with an emphasis on creating shared value (CSV) By integrating responsibilities into core business strategies For example, develop products that reduce sugar and sodium. To meet consumer health problems Procurement of environmentally friendly raw materials. Reduce energy consumption and reduce waste in the production process.

2. Give importance to stakeholders to employees, customers, and partners. Community, Environment For example, providing a safe and fair working environment. Provide accurate and transparent product information Build good relationships with the surrounding community. Strictly comply with environmental laws.

Academic Feedback

1. Expand the knowledge of "Social Responsibility of Business" to raise awareness of social responsibility

2. Creating a network of academics and businessmen interested in CSR to exchange knowledge and experience, which will help achieve continuous development

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DEVELOPMENT OF DIGITAL MARKETING STRATEGIES TO ENHANCE THE COMPETITIVENESS OF DIGITAL TRAINING PROGRAMS AT THE COLLEGE OF INNOVATION AND MANAGEMENT

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ABSTRACT

This research aimed to (1) study the competitive situation of digital training programs, (2) analyze factors influencing participants' decision to enroll, and (3) develop appropriate digital marketing strategies for the College of Innovation and Management. A mixed-methods approach was employed using questionnaires from 100 participants and in-depth interviews with 5 administrators and staff members. The findings revealed that course quality, organizational credibility, digital media publicity, and online information accessibility significantly influenced enrollment decisions. The developed digital marketing strategies comprised four key components: (1) brand building through social media, (2) value-based and content marketing, (3) interactive online platform development, and (4) data-driven communication strategies. The pilot implementation showed a 25% increase in enrollment and high participant satisfaction (Mean = 4.32, SD = 0.56). These results indicate that the proposed digital marketing strategies effectively enhanced the competitiveness of the college's digital training programs.

Keywords: Digital Marketing Strategies, Competitiveness, Digital Training Programs

INTRODUCTION

Digital technology plays a crucial role in higher education and training. The College of Innovation and Management, Suan Sunandha Rajabhat University, has consistently implemented digital training programs to develop the potential of its personnel and the wider community. However, increasing competition from both educational institutions and the private sector has necessitated developing digital marketing strategies to remain competitive and build a distinctive image. By utilizing content marketing as the core marketing strategy and employing various digital marketing media, (Phokajang, A, Chomchom, N, Decha, O., 2024), Suan Sunandha Rajabhat University.

Digital technology has become a major transformative force in higher education and professional training, reshaping how individuals access knowledge, develop competencies, and engage in lifelong learning. The rapid advancement of digital platforms, artificial intelligence (AI), cloud-based learning systems, data analytics, and online learning ecosystems has significantly influenced the way educational institutions design and deliver training programs. In particular, the shift toward flexible, learner-centered, and technology-driven learning environments has enabled universities to expand their roles as digital knowledge providers in response to evolving societal and labor-market demands. As a result, higher education institutions must continuously innovate their instructional and marketing approaches to remain competitive and relevant in the digital era.

The College of Innovation and Management, Suan Sunandha Rajabhat University, has long recognized the importance of digital capability development and has actively implemented various digital training programs aimed at students, faculty members, professionals, and the broader community. These programs include digital literacy training, digital marketing courses, creative content development workshops, and professional development programs aligned with the skill requirements of the twenty-first century. The university's commitment to supporting digital transformation reflects its strategic mission to promote innovation, enhance human capital, and strengthen community engagement through education and training.

However, despite these efforts, the landscape of digital training has become increasingly competitive. Educational institutions, government agencies, private companies, and international online platforms are continuously expanding their digital course offerings. Many providers offer low-cost or even free training opportunities, which attract large numbers of participants and reduce the competitive advantage of traditional institutions. This situation poses challenges for the College of Innovation and Management, particularly in sustaining its visibility, maintaining enrollment numbers, and differentiating its programs within a crowded marketplace. The rising influence of large-scale open online courses (MOOCs), micro-credential platforms, and corporate training services further intensifies market pressures, compelling institutions to strengthen their strategic positioning and value propositions. Philip Kotler (2016, No preview). Four key dimensions of holistic marketing are woven throughout the text: Internal marketing—ensuring everyone in the organization embraces appropriate marketing principles, especially senior management.

Moreover, the behavior of learners has shifted dramatically due to digital influences. Potential participants increasingly rely on online information, social media engagement, peer reviews, and digital content when making decisions about training enrollment. Factors such as institutional credibility, course quality, user experience, and the accessibility of digital information play crucial roles in shaping their choices. Modern learners expect timely communication, personalized content, intuitive online interfaces, and meaningful learning experiences that align with their personal and professional goals. Traditional marketing approaches are no longer sufficient to capture the attention of these digitally oriented learners; instead, institutions must adopt comprehensive digital marketing strategies that combine data analytics, targeted communication, content marketing, branding, and interactive engagement.

In this context, developing effective digital marketing strategies is essential to enhancing the competitiveness of the college's digital training programs. A well-designed digital marketing approach can increase brand awareness, strengthen institutional credibility, expand market reach, and support evidence-based decision-making. It also enables the college to create distinctive value by offering relevant content, employing effective communication channels, and designing learner-centered digital experiences. Such strategies contribute to attracting new participants, increasing enrollment, and fostering long-term engagement, thereby enhancing the sustainability of the college's training initiatives.

Therefore, this study aims to examine the competitive environment surrounding digital training programs, analyze the factors influencing training enrollment decisions, and develop appropriate digital marketing strategies tailored to the context of the College of Innovation and Management. The findings are expected to serve as a practical guideline for improving marketing communication, enhancing public relations efficiency, and supporting strategic planning for digital training programs. U "The process of integrating digital technology into business enables digital technologies to support inclusive and sustainable economic growth." National Statistical Office. (2023). binately, the insights gained from this research will help position the college as a leading provider of digital training and capacity-building initiatives in Thailand, contributing to national development and digital skill advancement in an increasingly technology-driven society.

OBJECTIVE

1. To study the competitive situation of digital training projects.
2. To analyze factors influencing participants' training decision-making.
3. To develop appropriate digital marketing strategies for training projects.

METHODOLOGY

In today's era, digital technology plays a crucial role in promoting learning and training. This has led to the popularity and intense competition of digital training programs from both educational institutions and the private sector. Many offer affordable training programs, while others offer no training fees at all. This puts the College of Innovation and Management at risk of losing competitive opportunities and revenue from this type of training program. Therefore, developing a digital marketing strategy to enhance competitiveness is essential to maintain the stability and sustainability of the College of Innovation and Management's digital training program.

This research was a mixed methods study using both quantitative and qualitative data. The sample consisted of 100 participants in the digital training program and 5 executives/staff. The tools used included questionnaires and semi-structured interviews. Data analysis used descriptive statistics and content analysis.

The research covers the current situation, problems, and factors affecting the competitiveness of digital training programs. It also analyzes trends in target audience needs, and develops appropriate digital marketing strategies for the College of Innovation and Management, Suan Sunandha Rajabhat University. The focus is on developing public relations approaches, building brand image, and utilizing digital technology to effectively reach target audiences and increase training program revenue. Currently, digital marketing should be given significant attention. With the advancement of technology and easier access to the internet, consumer behavior has changed compared to the past. The use of marketing tools as a medium for communication, tailored to the target audience and delivering quality content, can lead businesses to achieve success (Pornpan Tanprasert, 2016).

The research was conducted at the College of Innovation and Management, Suan Sunandha Rajabhat University, Bangkok, which is the primary agency for organizing and implementing digital training programs, including training spaces used by the college as venues for both online and on-site programs. The main impact of this research is to improve work processes to be systematic, provide data to support decision-making, and enable the effective use of digital marketing approaches. This will result in the College of Innovation and Management, Suan Sunandha Rajabhat University, being more competitive in the digital training market.

Impacts on Work Methods:

1. Training Project Management
 1. A more systematic training project planning and implementation process.
 2. Effective analysis of participant and target group data.
 3. Strategic planning and marketing communications are clear and measurable.
2. Communication and Public Relations

1. Increased use of digital media and online channels appropriate to the target audience, such as Facebook, LINE Official, websites, or e-learning platforms.

2. Increased efficiency in information dissemination and reduced public relations time.

3. Personnel Efficiency

1. Personnel can apply digital marketing knowledge to real-world work.

2. Collaborative learning occurs within the team through the exchange of research data.

3. Enhanced skills in data analysis and the use of digital tools. and strategic communication.

4. Training program effectiveness

1. The number of training program applicants is increasing.

2. Revenue from digital training programs is increasing.

3. Participant satisfaction with the training format and public relations has improved.

5. Routine Work Improvement

1. The training program planning and evaluation process is supported by empirical research evidence.

2. The college can use the research findings as best practice guidelines for developing other types of training programs in the future.

RESULTS

Research Results Variables Mean Standard Deviation Organizational Credibility 4.45 0.52 Training Course Quality 4.38 0.47 Digital Media Public Relations 4.29 0.55 Online Information Accessibility 4.16 0.60.

The research results found that factors such as course quality and agency credibility significantly influenced the decision to participate in training.

Variables	Average	Standard deviation
Agency credibility	4.45	0.52
Training course quality	4.38	0.47
Digital public relations	4.29	0.55
Online information accessibility	4.16	0.60

The qualitative analysis revealed three dominant factors shaping the effectiveness of digital communication and marketing within the College of Innovation and Management, Suan Sunandha Rajabhat University. These factors—organizational image, the presentation of modern and relevant

content, and the accessibility of diverse communication channels—collectively influence stakeholder engagement, institutional credibility, and public perception of the College's academic value. The findings highlight how these factors interact to generate trust, strengthen institutional identity, and enhance the visibility of the College in an increasingly competitive educational landscape.

1. Organizational Image

Participants emphasized that a strong organizational image is the foundation of successful digital outreach. Stakeholders expect academic institutions to project professionalism, reliability, and innovation. The College's reputation as a forward-thinking institution significantly affects how audiences interpret its digital content. Informants noted that a clear visual identity—such as consistent use of logos, color schemes, and formal communication tone—contributes to the perception of academic excellence and institutional stability. Additionally, responsiveness in communication (e.g., replying to messages promptly and providing accurate information) was mentioned as a crucial driver in strengthening public trust. The analysis shows that when the College's image aligns with modern educational standards, it not only attracts potential learners but also reinforces the loyalty of current students and external partners.

2. Presentation of Modern and Relevant Content

Another major theme was the need for content that is both modern and meaningful. Respondents highlighted that content must reflect current trends in education, technology, and professional development. Examples include data-driven insights, updates on digital innovations, and showcases of student or staff achievements in digital competency. Content that integrates multimedia—such as infographics, short videos, interactive posts, and live sessions—was perceived as more engaging and reflective of contemporary communication practices. Interviewees also stated that outdated or repetitive content can reduce audience interest and negatively affect the College's perceived relevance. Therefore, continually updating digital materials to match societal and technological developments is vital for maintaining a competitive edge.

3. Accessible and Diverse Communication Channels

The analysis also underscored the importance of having multiple, user-friendly communication channels. Participants reported that stakeholders increasingly rely on a combination of platforms, including Facebook, Instagram, TikTok, YouTube, and the College website, to access information. Each platform attracts different demographic groups; for instance, younger audiences prefer short-form video platforms, while working professionals tend to rely on official websites or LinkedIn. The ability to deliver consistent messages across platforms—and provide clear navigation paths for information—was seen as essential for maximizing reach. Moreover, easy access to enrollment details, course information, event announcements, and administrative services significantly influences the decision-making process of prospective learners. When information is difficult to locate or when channels are inconsistently updated, users may disengage or turn to competing education providers.

The analysis of the developed digital marketing strategies for the College of Innovation and Management highlights four core strategic components designed to strengthen institutional visibility, enhance stakeholder engagement, and support long-term competitiveness in the digital era. These strategies—social media branding, value-driven and content marketing, interactive online platform development, and data-driven communication—work together to establish a comprehensive digital ecosystem that aligns with the needs and behaviors of modern learners, staff, and community partners.

1) Social Media Branding

The strategy of social media branding emphasizes the creation of a consistent and recognizable digital identity across platforms such as Facebook, Instagram, TikTok, and YouTube. The qualitative findings indicate that stakeholders perceive social media as the most immediate and dynamic avenue for shaping public perception. A strong brand presence—reflected through unified visual design, tone of voice, and messaging—was identified as essential for conveying professionalism, innovation, and institutional values. Moreover, regular posting schedules, real-time updates, and the use of creative media formats help capture the attention of diverse audiences. Respondents highlighted that branding through social media not only builds awareness but also fosters emotional connection, leading to improved engagement and stronger loyalty to the College.

2) Value-Driven and Content Marketing

The value-driven content marketing strategy focuses on producing content that is relevant, informative, and aligned with the audience's needs. Participants described that high-quality content—such as educational articles, digital skill tutorials, behind-the-scenes stories, and success cases—creates meaningful experiences for viewers. This type of content positions the College as a credible knowledge provider and reinforces its role in promoting digital literacy and professional development. The analysis also shows that content integrating storytelling, problem-solving insights, and current educational trends is more likely to be shared, thereby extending the College's reach organically. This strategy supports long-term brand recognition by building trust, demonstrating expertise, and enhancing the perceived value of the College's programs and services.

3) Development of Interactive Online Platforms

The third strategy centers on enhancing the College's online platforms to support interactive and user-centered experiences. Interviewees stressed that modern users expect more than passive information—they seek opportunities to engage, communicate, and participate in digital activities. Features such as online chat support, integrated enrollment systems, interactive dashboards, virtual event spaces, and user-friendly website navigation were identified as essential elements. These interactive components not only streamline administrative processes but also enhance user experience, increasing satisfaction and the likelihood of re-engagement. The strategy ultimately positions the College as an institution that embraces technological innovation while meeting the evolving expectations of learners and stakeholders.

4) Data-Driven Communication Strategy

The analysis highlights that data-driven communication plays a central role in optimizing marketing effectiveness. Through systematic collection and interpretation of user analytics—such as engagement rates, platform reach, behavioral patterns, and demographic insights—the College can tailor messages to match audience preferences and needs. Respondents noted that leveraging data enables more precise targeting, improved content relevance, and more efficient resource allocation. Furthermore, continuous monitoring of campaign performance supports ongoing improvement, enabling the College to adapt quickly to changing digital trends and user expectations. This evidence-based approach strengthens strategic decision-making and enhances the overall impact of digital communication efforts.

The implementation of the developed digital marketing strategies demonstrated a clear positive impact on public engagement and operational outcomes. The most notable result was the 25% increase in the number of applicants, which indicates that the integrated approach—combining social media branding, value-driven content, interactive platforms, and data-driven communication—effectively enhanced the College's visibility and appeal. This growth suggests that prospective learners were more

aware of program offerings, better informed about learning opportunities, and more motivated to initiate the enrollment process. Stakeholders attributed this improvement to more targeted digital outreach, improved clarity of information, and stronger emotional resonance in the College's online identity.

Additionally, the analysis of user feedback revealed a high average satisfaction score of 4.32 (SD = 0.56). This rating reflects a generally positive response from students, participants, and external audiences regarding the accessibility, relevance, and quality of the digital communication initiatives. The relatively low standard deviation indicates consistent satisfaction across different user groups, suggesting that the digital strategies were effective across a wide range of demographics. Respondents particularly noted improvements in the ease of accessing information, the visual appeal of social media content, and the responsiveness of online communication channels.

Overall, the experimental results confirm that the strategies not only increased engagement but also strengthened user experience, reinforcing the importance of continuous development in digital marketing practices within higher education institutions.

CONCLUSION AND FUTURE WORK

Summary, Discussion, and Recommendations The results of the study indicated that the developed digital marketing strategy can significantly increase the competitiveness of digital training programs in terms of applicant numbers, satisfaction, and college image. The recommendation is to further develop the strategy using new technologies such as AI marketing and big data analytics.

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**SERVICE INNOVATIONS AFFECTING USER SATISFACTION IN THE
SERVICES OF THE RESEARCH AND ACADEMIC SERVICES DIVISION,
COLLEGE OF INNOVATION AND MANAGEMENT, SUAN SUNANDHA
RAJABHAT UNIVERSITY**

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ABSTRACT

The research study titled “Service Innovation Affecting User Satisfaction in the Research and Academic Services Division, College of Innovation and Management, Suan Sunandha Rajabhat University” aimed to: Examine the level of service user satisfaction with the Research and Academic Services Division, College of Innovation and Management, Suan Sunandha Rajabhat University. Investigate the extent to which service innovation is applied in the operations of the Research and Academic Services Division, College of Innovation and Management, Suan Sunandha Rajabhat University. The researcher conducted a review of literature, articles, previous studies, and related theoretical concepts to clarify and understand the context of the research topic. The population consisted of instructors, researchers, students, and external service users. Simple Random Sampling was used. The total population was 190 individuals, with a sample size of 129 respondents. Descriptive Statistics were used to analyze data from the sample respondents in Part 1 of the questionnaire, which included questions related to general information about the respondents. The data were summarized using percentage, frequency, mean, and standard deviation. Inferential Statistics were employed to analyze the impact of user satisfaction on service usage in the Research and Academic Services Division, College of Innovation and Management, Suan Sunandha Rajabhat University. For these quantitative variables, Multiple Regression Analysis was used to determine the relationships and influence among the variables.

Keywords: Service Innovation, User Satisfaction, Research and Academic Service Division

INTRODUCTION

At present, higher education institutions play an important role in the development of knowledge, research, and academic services for society. These are key missions that enhance academic potential and strengthen communities. The services provided by the Research and Academic Services Division serve as a vital mechanism for driving the institution's success—through knowledge creation, technology transfer, and providing academic consultation to government agencies, the private sector, and communities.

However, in the era of technological and digital transformation, traditional service models may no longer meet the needs of service users who increasingly expect convenience, speed, and efficiency. Therefore, internal units within universities must adopt service innovation to enhance the quality of service delivery—for instance, by integrating information technology systems to support operations,

modernizing service processes, and developing staff capabilities to foster creativity and professionalism in service provision.

The Research and Academic Services Division, College of Innovation and Management, Suan Sunandha Rajabhat University, plays a crucial role in providing research services, academic services to society, training programs, academic journals, national and international academic conferences, and knowledge development for personnel and external organizations. Hence, the development of service innovation is of great importance in creating positive user experiences and promoting the university's image. Meeting users' needs involves creating satisfaction and a lasting impression, leading to user loyalty and repeated service usage (Sukanya Phopha, 2010: 25).

The Research and Academic Services Division recognizes the importance of providing high-quality services to users. Given its multiple responsibilities—such as managing journal publications and organizing national and international academic conferences—the division must attract contributors and participants. Providing quality services can enhance user satisfaction and encourage continued engagement.

This study is significant as it aims to determine the extent to which service innovation has been applied in the operations of the Research and Academic Services Division and to analyze user satisfaction levels. The research findings can serve as guidelines for improving service efficiency and promoting sustainable responsiveness to users' needs.

OBJECTIVE

1. To study the level of service users' satisfaction with the Research and Academic Services Division, College of Innovation and Management, Suan Sunandha Rajabhat University.
2. To study the level of service innovation implementation in the operations of the Research and Academic Services Division, College of Innovation and Management, Suan Sunandha Rajabhat University.

Literature

Concepts and Theories Related to Service Innovation

At present, Suan Sunandha Rajabhat University places great importance on innovation and various technologies that can drive the university toward becoming a truly digital institution. This includes providing high-quality services that ensure satisfaction among students, instructors, researchers, and external service users. Such efforts promote accessibility to research information and academic services, as well as the exchange of research data, knowledge, and other technologies. In this research, the researcher has compiled concepts and theories related to service innovation in various contexts as follows:

Drejer (2004) and Mattsson et al. (2005) defined service innovation as the creation of new services that are often studied within similar contexts. In the current business environment particularly in the tourism industry intense competition requires companies to focus on the effective utilization of available resources to enhance profitability and ensure organizational survival.

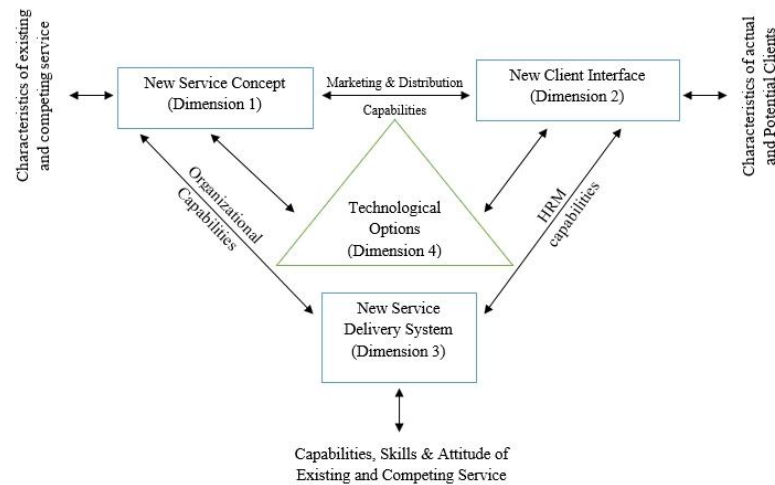


Figure 1: Model of Four Dimensions of Service Innovation

Source: Den Hertog, 2000

Den Hertog (2000) developed a model of service innovation that encompasses multiple dimensions and can be linked to various parts of the service process, including:

Service Concept – The idea or design of a new service.

Client Interface – The methods of interacting and creating experiences with service users.

Service Delivery System – The systems and processes that support service provision.

Technological Options – The application of technology to enhance service quality and efficiency.

Therefore, service innovation is an essential process that enables organizations to develop, adapt, and continuously respond to user needs amid rapid technological change and increasing competition.

Therefore, it can be concluded that service innovation plays a crucial role in creating and improving service processes and delivery models to make service operations more convenient, simple, and efficient. This benefits both service users and providers, leading to greater user satisfaction. Moreover, by integrating new technologies to transform organizational operations, service innovation can also enhance profitability and overall performance within the service industry.

Concepts and Theories Related to Service Quality

Parasuraman et al. (1985, 1990) studied the differences between customers' expectations and perceptions of an organization's service performance. They proposed that service quality arises from the "gaps" between what customers expect and what they actually receive. Based on this concept, they developed the SERVQUAL Model, which identifies five key dimensions of service quality as follows:

Tangibles

The physical aspects of the service, including facilities, equipment, personnel, and materials associated with service delivery.

Reliability

The ability to perform the promised service accurately and dependably, ensuring consistent standards and trustworthy information.

Responsiveness

The willingness and promptness of employees to assist and provide services to customers.

Assurance

The knowledge, courtesy, and competence of employees that instill trust and confidence in customers.

Empathy

The provision of caring, individualized attention to customers, emphasizing understanding and personalized service.

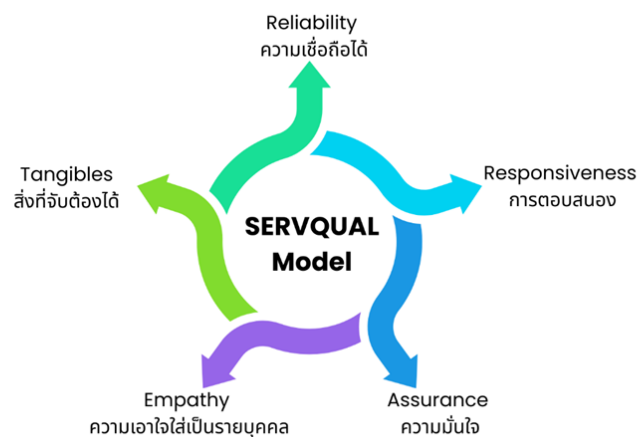


Figure 2: SERVQUAL Model

Source: Parasuraman et al., (1985, 1990)

Concepts and Theories Related to Customer Satisfaction

Customer satisfaction arises from the feelings and perceptions of customers after receiving a service. It involves a comparison between expectations prior to service and the perceived performance of the service received. If the perceived performance meets or exceeds expectations, the customer is satisfied; if it falls short, the customer becomes dissatisfied (Kotler & Keller, 2016).

Oliver (1980) explained that satisfaction results from the process of comparing what customers expect with what they actually receive:

Positive Disconfirmation: Perceived performance exceeds expectations □ Customer is satisfied.

Confirmation: Perceived performance matches expectations □ Customer is moderately satisfied.

Negative Disconfirmation: Perceived performance falls below expectations □ Customer is dissatisfied.

Maslow (1943) suggested that customer satisfaction is related to the fulfillment of human needs, which are arranged in five hierarchical levels:

Physiological Needs – Basic physical requirements.

Safety Needs – Security and stability.

Social Needs – Love, belonging, and social relationships.

Esteem Needs – Recognition, respect, and achievement.

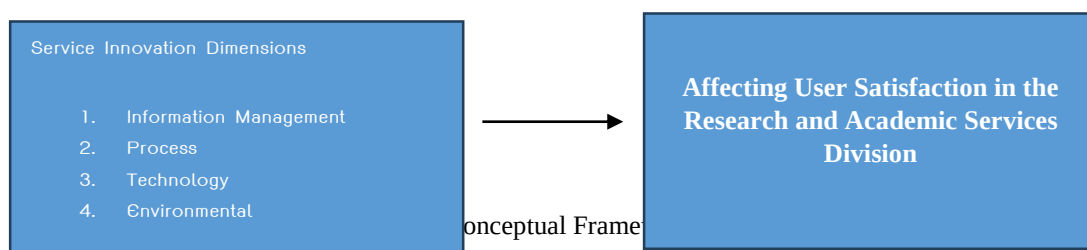
Self-Actualization Needs – Fulfillment of personal potential.

In the context of service, organizations that effectively meet customers' needs at each level can foster satisfaction and long-term loyalty.

In summary, customer satisfaction reflects a person's positive emotional response. It occurs when service users perceive that the service aligns with their expectations. If expectations are met, users feel satisfied; if expectations are not met, dissatisfaction arises, often leading to comparisons with other services.

Conceptual Framework

The research study entitled "Service Innovations Affecting User Satisfaction in the Services of the Research and Academic Services Division, College of Innovation and Management, Suan Sunandha Rajabhat University" was developed based on a review of concepts, theories, literature, and related research. From this review, the conceptual framework was established as follows:



METHODOLOGY

Population and Sampling

This study focuses on examining the level of service user satisfaction with the Research and Academic Services Division, College of Innovation and Management, Suan Sunandha Rajabhat University, as well as the extent to which service innovation is applied in the division's operations. The population includes instructors, researchers, students, and external service users. Simple Random

Sampling was employed, based on the probability of service users accessing the division between August 1, 2025, and January 30, 2026. The total population consisted of 190 individuals, with a sample size of 129, calculated using Taro Yamane's formula with a 5% margin of error (Taro Yamane, 1973).

$$n = \frac{N}{1 + Ne^2}$$

Let:

n = sample size

N = population size

e = sampling error

Given: $N = 190$, $e = 0.05$

The sample size formula (Taro Yamane, 1973) is:

$$n = \frac{N}{1 + N(e)^2}$$

Substitute the values:

$$n = \frac{190}{1 + 190(0.05)^2} = \frac{190}{1 + 190(0.0025)} = \frac{190}{1 + 0.475} = \frac{190}{1.475} \approx 128.81$$

After rounding:

$$n = 129$$

Research Instruments and Instrument Validity

The research instrument was a questionnaire consisting of both open-ended and closed-ended questions developed by the researcher based on relevant theories and prior studies. The questionnaire was divided into three parts:

Part 1: General Information – Respondents' demographic information, such as gender, age, status, and length of service use.

Part 2: Service Satisfaction Questionnaire – Measuring user satisfaction with the Research and Academic Services Division across four aspects: **Information, Process, Technology** and **Environmental**.

Part 3: Suggestions – Space for respondents' additional comments and recommendations.

The questionnaire was reviewed by three experts to assess content validity using the Index of Objective Congruence (IOC). Questions with an IOC ≥ 0.50 were considered aligned with the research objectives and suitable for use, while items with IOC < 0.50 required revision.

Data Analysis

Descriptive statistics were used to analyze data from the sample. This included calculating percentages, frequencies, means, and standard deviations to describe respondents' general information and satisfaction levels with the Research and Academic Services Division.

RESULTS

The analysis of **user satisfaction with the Research and Academic Services Division, College of Innovation and Management, Suan Sunandha Rajabhat University** revealed that, overall, satisfaction was at a **very high level**. When examined by dimension: The **Environmental** dimension had the highest level of satisfaction, categorized as very high. The **Technology** dimension was the next highest, also at a very high level. The dimension with the lowest satisfaction, though still very high, was **Information Management**. Overall, all dimensions were rated at a **very high level of satisfaction** by service users.

CONCLUSION AND FUTURE WORK

This study examined the impact of Service Innovations Affecting User Satisfaction in the Services of the Research and Academic Services Division, College of Innovation and Management, Suan Sunandha Rajabhat University. Four key dimensions of service innovation: Information Management, Process, Technology, and Environmental were analyzed to determine their influence on user satisfaction. The findings indicate that all four dimensions positively contribute to enhancing user satisfaction with each playing a unique role: effective Information Management ensures timely and accurate access to research and academic resources; streamlined Processes reduce delays and increase efficiency; the integration of Technology facilitates smoother service delivery; and a supportive Environmental context promotes comfort and engagement among users. Overall, these results highlight the critical role of service innovations in fostering a more satisfying and efficient user experience in higher education service environments.

Future Work

Future research can expand upon this study by incorporating additional variables, such as staff competency, organizational culture, or service personalization, to gain a more comprehensive understanding of factors affecting user satisfaction. Longitudinal studies could also be conducted to assess the long-term effects of service innovations on user experience. Additionally, comparative studies across universities or academic divisions could provide insights into best practices and strategies to enhance service quality through innovation. Finally, integrating advanced technological tools, such as AI-driven service analytics or digital feedback systems, could be explored to further optimize service delivery and better meet user needs.

In the current era of rapid change, the integration of AI (Artificial Intelligence) into work processes can streamline operations and enhance service delivery, making services faster and more efficient. AI technology innovation has wide-ranging applications across business and industrial sectors. Its primary objectives include enhancing efficiency, processing large volumes of data at high speeds, reducing errors, and analyzing consumer behavior to support long-term business competitiveness and industry growth. Nongkhoo, A. (2025).

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THE EFFECT OF DIGITAL COMMUNICATION BY INFLUENCERS ON ESPORTS EVENT ATTENDANCE INTENTION

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ABSTRACT

The rapid expansion of the esports industry has intensified competition among event organizers, who increasingly rely on digital communication and influencer-driven promotion to attract audiences. Despite this growing reliance, many esports events continue to face challenges in generating consistent attendance. Issues such as fluctuating audience engagement, fragmented attention across digital platforms, and varying levels of trust in influencer-recommended content highlight the need to better understand which factors most effectively shape attendance intention within the esports ecosystem. This study examines how influencer credibility, content quality, and digital engagement influence the intention of Thai audiences to attend esports events. A quantitative research design was employed, and data were collected from 190 respondents who follow esports influencers and regularly consume gaming-related digital content. The research instrument consisted of established measurement scales adapted to the esports context and reviewed by experts to ensure content validity. Data were gathered through online distribution across esports communities and analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM), following a two-step approach to assess both measurement and structural components.

The findings indicate that all three factors significantly influence attendance intention. Digital engagement emerges as the strongest predictor, emphasizing the role of interactive behaviors such as liking, sharing, commenting, and participating in livestreams in shaping audience motivation. Influencer credibility also plays a substantial role by enhancing trust, authenticity, and perceived expertise. Content quality further contributes by improving message clarity, relevance, and audience interest. Overall, the study demonstrates that effective digital communication strategies, particularly those that leverage credible influencers and foster audience interaction, are essential for increasing esports event attendance.

These insights extend existing knowledge in esports marketing and provide practical guidance for organizations seeking to strengthen their digital outreach efforts. The study contributes to esports communication theory by illustrating the predictive power of influencer-driven engagement mechanisms, while offering actionable strategies for event organizers to enhance attendance through targeted digital communication.

Keywords: Influencer Marketing, Digital Engagement, Content Quality, Attendance Intention

INTRODUCTION

The esports industry has grown into a major force within the global digital entertainment economy, attracting over 540 million viewers and generating more than USD 1.8 billion in 2023 (Newzoo, 2024). Digital platforms such as YouTube Gaming, Twitch, Facebook Gaming, and TikTok have transformed how audiences follow tournaments, teams, and professional players. In Thailand, esports consumption continues to expand, supported by government recognition of esports as a professional sport and the growth of domestic leagues such as the ROV Pro League and PUBG Mobile Pro League.

Influencers, including streamers, professional players, and gaming content creators, play a central role within the digital communication ecosystem of esports. Their credibility, expertise, authenticity, and interpersonal connection significantly influence how audiences perceive and respond to esports-related messages. Previous studies indicate that influencer credibility enhances trust, increases the persuasive power of digital communication, and strengthens followers' behavioral intentions in online environments (Sokolova & Kefi, 2020). Furthermore, research has shown that the quality of content related to esports events, particularly in terms of clarity, relevance, informativeness, and creativity, contributes to higher perceived message value and promotes greater levels of audience engagement (Lou & Yuan, 2019).

Digital engagement also serves as a key behavioral mechanism that explains how audiences interact with esports communication. Engagement behaviors such as liking, commenting, sharing, participating in livestream chats, and co-creating content reflect both interest and psychological involvement. Social media can significantly amplify audience engagement by creating interactive spaces for collective identity expression (Terason & Pahasing, 2025). Studies have shown that higher levels of engagement are strongly associated with esports participation and event attendance (Hamari & Sjöblom, 2017; Lee & Seo, 2022). Recent works expand this view by emphasizing immersive and community-based engagement, including Discord participation, fan co-creation, and interactive livestream features (Alonso & Pérez, 2023; Freeman & Wohn, 2025).

Despite increasing reliance on influencer-driven digital communication within the Thai esports industry, empirical studies examining how influencer credibility, content quality, and digital engagement jointly influence **real-world esports event attendance intention** remain limited. Much of the existing research focuses on brand outcomes, stream viewership, or game adoption rather than offline event participation, highlighting a notable gap in the literature.

Recent esports research underscores that influencer behavior—especially gameplay expertise, interactive streaming presence, and parasocial bonds—plays a critical role in shaping audience responses. Influencers who demonstrate high skill levels and authentic communication strengthen follower trust and perceived relevance, thereby enhancing event-related motivations (Kim & Lee, 2023; Park & Jang, 2024). Additionally, micro-influencers with highly engaged communities have been shown to produce stronger event conversion effects than large-scale influencers (Tsai & Hsu, 2025).

Given these gaps and emerging insights, this study employs Partial Least Squares Structural Equation Modeling (PLS-SEM) to examine the direct effects of influencer credibility, content quality, and digital engagement on esports event attendance intention among Thai audiences. The findings aim to advance academic understanding of influencer-driven digital communication in esports while providing practical guidance for event organizers and marketers seeking to leverage influencers more effectively to increase attendance.

OBJECTIVE

To examine the direct effects of influencer credibility, content quality, and digital engagement on esports event attendance intention among Thai audiences.

METHODOLOGY

This study employed a quantitative research design using Partial Least Squares Structural Equation Modeling (PLS-SEM) to examine the direct effects of influencer credibility, content quality, and digital engagement on esports event attendance intention among Thai audiences. PLS-SEM was selected due to its suitability for predictive modeling and its ability to estimate complex relationships among latent constructs with non-normal data distributions (Hair et al., 2021).

Population and Sample

The target population consisted of Thai esports followers who actively consume esports-related content on social media platforms such as YouTube, TikTok, Facebook Gaming, and Twitch. The minimum required sample size was determined using the “10-times rule,” which suggests that the sample should be at least ten times the largest number of structural paths directed at any endogenous construct. Since three independent variables predicted attendance intention, the minimum required sample was 300 respondents.

A total of 190 valid responses were collected using purposive sampling, targeting individuals aged 15–35 who follow esports influencers or gaming content creators.

Research Instrument

Table 1.

Research Instrument

Section	Description
Demographic Information	Gender, age, education level, gaming/esports experience
Influencer Credibility (IC)	Items adapted from Sokolova and Kefi (2020) Measures trustworthiness, expertise, and authenticity
Content Quality (CQ)	Items adapted from Lou and Yuan (2019) Measures clarity, relevance, informativeness, and appeal

Section	Description
Digital Engagement (DE)	Items adapted from Wohn and Freeman (2020) Measures interaction such as liking, sharing, commenting, and livestream participation
Attendance Intention (AI)	Items adapted from Lee and Seo (2022) Measures intention to attend esports events

All items were measured using a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The questionnaire underwent content validation by three experts, and reliability was confirmed through a pilot test (n = 30), yielding Cronbach's alpha values above 0.80 for all constructs.

Data Analysis

Table 2.

PLS-SEM Data Analysis Procedures

Analysis Step	Criteria / Procedures
1. Measurement Model Evaluation	- Outer Loadings (≥ 0.70) - Cronbach's Alpha (≥ 0.70) - Composite Reliability (CR) (≥ 0.70) - Average Variance Extracted (AVE) (≥ 0.50) - Discriminant Validity: HTMT (< 0.85)
2. Structural Model Evaluation	- Path Coefficients (β) and Significance (p-values) - Coefficient of Determination (R^2) - Effect Size (f^2) - Bootstrapping (5,000 resamples)

This analytical approach enabled the identification of key predictors of esports event attendance intention and provided empirical evidence supporting the proposed structural relationships.

RESULTS

Measurement Model Evaluation

The measurement model demonstrates strong reliability and validity across all constructs. All outer loadings exceed the recommended threshold of 0.70, indicating adequate indicator reliability. The Average Variance Extracted (AVE) values, ranging from 0.7787 to 0.8286, together with the composite reliability (CR) values between 0.9462 and 0.9597, confirm excellent convergent validity and internal consistency. These results are summarized in Table 3.

Table 3

Measurement Model Results

Construct	Indicator	Loading	AVE	CR
Attendance Intention (AI)	AI1	0.909	0.8286	0.9508
	AI2	0.901		
	AI3	0.920		
	AI4	0.912		
Content Quality (CQ)	CQ1	0.890	0.7931	0.9504
	CQ2	0.901		
	CQ3	0.876		
	CQ4	0.896		
	CQ5	0.890		
Digital Engagement (DE)	DE1	0.902	0.8264	0.9597
	DE2	0.906		
	DE3	0.908		
	DE4	0.913		
	DE5	0.917		
Influencer Credibility (IC)	IC1	0.867	0.7787	0.9462
	IC2	0.880		
	IC3	0.895		
	IC4	0.911		
	IC5	0.857		

In addition to convergent validity, discriminant validity was assessed using the HTMT criterion. All HTMT values fall between 0.447 and 0.843, well below the conservative threshold of 0.85, indicating that all latent constructs are conceptually and empirically distinct from one another. Table 4 presents these results.

Table 4
HTMT Discriminant Validity

Construct	AI	CQ	DE	IC
AI				
CQ	0.716			
DE	0.843	0.498		
IC	0.771	0.447	0.540	

Structural Model Evaluation

Table 5 presents the results of the structural model assessment and the predictive power of the proposed PLS- SEM model. The endogenous variable, Attendance Intention (AI), exhibits a high coefficient of determination ($R^2 = 0.828$), indicating that influencer credibility, content quality, and digital engagement jointly explain 82.8 percent of the variance in attendees' intention to attend esports events. This reflects a robust model with strong predictive accuracy.

All hypothesized relationships (H1-H3) are statistically significant at $p < 0.001$. Content Quality (CQ $\rightarrow$ AI) shows a positive and meaningful effect ($\beta = 0.298$, $t = 9.274$), supported by a medium-to-large effect size ($f^2 = 0.382$). Digital Engagement (DE $\rightarrow$ AI) emerges as the strongest predictor of attendance intention ($\beta = 0.473$, $t = 12.252$), with a large effect size ($f^2 = 0.865$). Influencer Credibility (IC $\rightarrow$ AI) also demonstrates a substantial influence on attendance intention ($\beta = 0.353$, $t = 9.636$), with a large effect size ($f^2 = 0.510$). Table 5 summarizes these findings.

Table 5

Structural Model Results

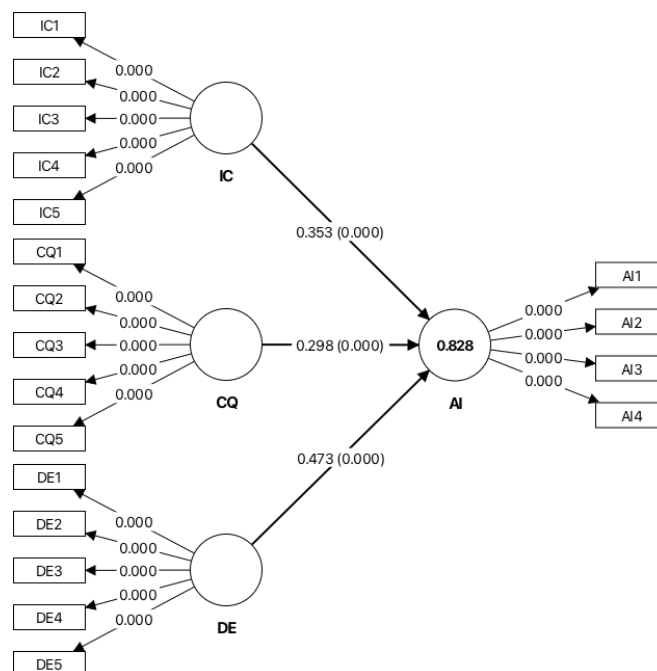
Endogenous Variable	R ²	Hypothesis	Path	β	t-value	p-value	f ²	Result
AI	0.828	H1	CQ $\rightarrow$ AI	0.298	9.274	0	0.382	Supported
		H2	DE $\rightarrow$ AI	0.473	12.252	0	0.865	Supported
		H3	IC $\rightarrow$ AI	0.353	9.636	0	0.510	Supported

Overall, the structural model confirms that all three antecedent variables significantly affect the intention to attend esports events, with digital engagement exerting the greatest influence. These results underscore the importance of interactive digital behaviors and influencer-driven communication in motivating audiences to participate in esports events.

Finally, the combined evidence demonstrates strong measurement integrity and model robustness, reflecting the effectiveness of the proposed conceptual framework, as illustrated in Figure 1.

Figure 1

PLS-SEM Structural Model of Esports Event Attendance Intention



Discussion

The findings indicate that digital engagement, influencer credibility, and content quality all exert significant positive effects on esports event attendance intention, with digital engagement emerging as the strongest predictor. This result aligns with Lee and Seo (2022), who emphasized that interactive behaviors—such as liking, sharing, commenting, and participating in livestream chats—play a crucial role in stimulating esports consumption. The strong influence of digital engagement may stem from the inherently participatory and community-driven nature of esports audiences, who often form parasocial relationships with influencers and display high levels of interactive media use. Such behaviors intensify emotional involvement, thereby increasing the likelihood of transitioning from online interaction to offline event participation. Kulwanich, A, Pongpeng, T. (2024).

Influencer credibility also demonstrates a substantial impact, reinforcing the work of Sokolova and Kefi (2020), who highlighted the importance of trustworthiness, expertise, and authenticity in shaping followers' acceptance of influencer recommendations. In the esports context, credible influencers—especially streamers and professional players—serve as opinion leaders whose endorsements can reduce uncertainty, enhance perceived event value, and strengthen behavioral intentions. Likewise, the significant positive influence of content quality is consistent with Lou and Yuan (2019), who noted that clear, relevant, informative, and creatively presented content enhances message value and increases audience engagement. High-quality content provides cognitive and emotional cues that encourage deeper involvement and greater motivation to attend events.

Taken together, these findings provide a deeper understanding of digital communication mechanisms within the esports ecosystem. Theoretically, this study contributes to engagement-centered communication models by demonstrating that interactive digital behaviors—beyond passive exposure—serve as key catalysts for real-world participation. It also integrates credibility theory and message value frameworks into the esports context, extending prior research that has primarily focused on brand attitudes or online viewership. Furthermore, the results offer contextual insights for the Thai esports industry, where influencer-driven media consumption is particularly prominent among youth and where esports events continue to expand.

The findings suggest several key implications for esports event promotion:

- **Strengthen engagement-based communication**, using interactive elements such as polls, challenges, and livestream Q&A to boost digital engagement.
- **Collaborate with credible micro-influencers**, who maintain stronger trust and community attachment than broad-reach influencers.
- **Improve content quality** through clear, relevant, and visually appealing media tailored for short-form and streaming platforms.
- **Adopt multi-platform strategies** to ensure consistent messaging across TikTok, Twitch, YouTube, and Facebook Gaming.
- **Develop community-driven ecosystems**, including Discord groups and fan co-creation activities, to deepen audience involvement.
- **Leverage influencers as event ambassadors** to enhance authenticity and motivate fans to attend.

Overall, the findings reveal a multidimensional pathway through which digital communication influences esports event attendance. Digital engagement stimulates emotional involvement, influencer credibility builds trust, and content quality enhances message value—together forming an integrated mechanism that drives participation. These insights underscore the importance of strategic, interaction-focused communication approaches to strengthening event promotion in the digital era.

CONCLUSION AND FUTURE WORK

This study demonstrates that digital engagement, influencer credibility, and content quality have significant positive effects on esports event attendance intention, with digital engagement identified as the strongest predictor. The model explains 82.8% of the variance in attendance intention, highlighting the substantial role of influencer-driven communication and interactive digital behaviors in shaping audience participation. These findings extend existing literature and provide empirical insight into how digital communication operates within the Thai esports ecosystem.

Future research could expand on these results by examining mediating or moderating variables—such as engagement experience, perceived value, or fandom intensity—to uncover deeper psychological mechanisms behind attendance intention. Comparative studies across different game genres, influencer types, or cultural contexts may also offer broader perspectives. Moreover, longitudinal or experimental approaches could strengthen causal inference and improve the generalizability of future research models.

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FACTORS INFLUENCING GENERATION Z'S EMPLOYMENT DECISION- MAKING IN THAI ORGANIZATIONS

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ABSTRACT

This study aimed to examine the demographic and motivational factors influencing Generation Z's decision to pursue employment in organisations in Thailand. The research focused on understanding the characteristics and motivations that differentiate this new generation of workers, who play an increasingly significant role in shaping the country's labour structure in the digital era. The sample group consisted of individuals belonging to Generation Z, defined as those born between 1995 and 2002 (B.E. 2538- 2545), residing in Thailand. A total of 400 respondents were selected for this study. Data was collected using a structured questionnaire as the primary research instrument. The questionnaire included sections on respondents' demographic profiles, demographic factors, and motivational factors influencing their decision to work in an organisation. Data analysis was conducted using descriptive statistics, including frequency, percentage, mean, and standard deviation, to describe the general characteristics of the sample group. Inferential statistics, including the t-test and one-way analysis of variance (ANOVA), were employed to compare differences in factors influencing job choice decisions among groups with different demographic characteristics. Additionally, multiple regression analysis was employed to investigate the impact of motivational factors on the decision to choose employment in organisations among Generation Z in Thailand.

Keywords: Generation Z, Career, Job selection

INTRODUCTION

In an era of rapid economic, technological, and labour system transitions in Thai society, Generation Z those born between 1995 and 2010 has emerged as a new workforce group that is beginning

to play an increasingly significant role in the Thai labour market. This generation has grown up in a digital age where technology, the internet, and social media have become integral parts of daily life. As a result, they possess values, attitudes, and work expectations that differ from those of previous generations, such as Generation Y or Generation X (Bencsik & Machova, 2016; Francis & Hoefel, 2018) [1] [2].

As a result of these changes, business organisations and various institutions in Thailand must adapt to attract, develop, and retain high-potential Generation Z employees. This new generation of workers not only seeks appropriate compensation but also places importance on purpose and meaning in their work, work-life balance, flexible working hours, organisational culture, and a work environment that fosters creativity and continuous learning (Adecco Thailand, 2023; Turner et al., 2023) [3] [4]. International research has found that Generation Z tends to choose organisations that provide positive work experience, rather than relying solely on organisational reputation (Bennett et al., 2020) [5]. In Thailand, a study by U-Dee et al. (2022) [6] indicates that compensation and benefits, a friendly work environment, and opportunities for career advancement are key factors influencing this generation's decision to join an organisation. In addition, Niyomsujarit and Na Keeree (2024) [7] note that organisational reputation and relationships with colleagues are also significant factors influencing the employment selection intentions of Thai Generation Z.

In the context of Thailand, the labour market is facing shortages of highly skilled workers, alongside rapid technological advancements. Many organisations must adjust their human resource strategies to meet the expectations of the new generation, who often seek opportunities to demonstrate their potential, flexibility in working hours and locations, as well as an environment that supports career development and overall well-being at work. If organisations fail to meet these expectations, they may face high turnover rates and struggle to retain talented employees (Bryant & Allen, 2013) [8]. Human resource management is like a gear or a machine that must contribute to value creation for organizations as well. If all departments in the organization understand their roles and responsibilities. Responsibility, including accountability and good consciousness, will make the organization get the most out of it. Janmuangthai, W, Sitthiwarongchai, C, Rodjam, C. (2023).

Therefore, the study "Factors Influencing the Job Selection Decisions of Generation Z in Thailand" is highly important, as it enables organizations, human resource managers, and labour policymakers to understand the emerging needs of the new workforce. It enables them to develop personnel management strategies that align with Generation Z's values and behaviors, while enhancing the competitiveness of Thai organizations in the digital economy in a sustainable manner.

OBJECTIVE

1. To examine the demographic differences among Generation Z in Thailand that are related to their decisions to join an organisation.
2. To investigate the motivational factors that influence the job selection decisions of Generation Z in Thailand.

METHODOLOGY

This research examines the factors influencing the decision of Generation Z in Thailand to join an organization. These factors include compensation and benefits, job security, job characteristics,

learning and skill development, performance appraisal, career advancement, organizational reputation, relationships with colleagues, work values, and corporate social responsibility (CSR).

The target population in this study consists of Generation Z individuals in Thailand, born between 1995 and 2002 (B.E. 2538- 2545). The research employs a survey research design, using a questionnaire to collect data exclusively from Generation Z respondents in Thailand. Data collection and analysis were conducted from April 2024 to March 2025.

RESULTS

Part1: Results of the analysis of the demographic characteristics of the respondents include gender, age, education level, salary, and work experience as shown in Table 1.

Table 1: Number and Percentage Demographic Characteristics

Demographic	Number (n = 400)	Percentage
1. Gender		
Male	130	32.5
Female	270	67.5
2. Age		
20 - 23 yrs.	86	21.5
24 - 27 yrs. 314 78.50	314	78.5
3. Education		
Below bachelor's degree	25	6.2
Bachelor's Degree	296	74.0
Post - graduate	79	19.8
4. Salary		
Below 10,000 THB	58	14.5
10,001-20,000 THB	174	43.5
20,001-30,000 THB	116	29.0
Over 30,000 THB	52	13.0
5. Work Experience		
No experience / Below 1 year	85	21.2
1-3 years	180	45.0
Over 3 years	135	33.8

Part2: Results of the analysis of motivational factors influencing the decision to join an organization as shown in Table 2.

Table 2

The results of the analysis of mean ($\bar{x}$) and standard deviation (S.D.) are presented in the overall perspective.

Motivational factors influencing the decision to join an organization	$\bar{x}$	S.D.	Meaning
1. Compensation and benefits	3.95	.924	High
2. Job security	4.15	.751	High
3. Job characteristics, learning, and skill development	3.88	.804	High
4. Performance appraisal	3.94	.765	High
5. Career advancement	4.01	.869	High
6. Organizational reputation	3.65	.680	High
7. Relationships with colleagues	4.26	.697	High
8. Work values	4.06	.723	High
9. Corporate social responsibility of the organization	4.23	.717	High
Overall	4.01	.576	High

Part3: Results of the hypothesis testing

Table 3

Results of the statistical analysis comparing differences in the job selection decisions of Generation Z, classified by gender

Overall job selection decisions of Generation Z in Thailand, classified by gender	Genders	$\bar{x}$	S.D.	t	Sig.
1. The level of individual interests	Male	3.95	.637	.033	.0857
	Female	4.02	.635	-	-
2. The level of individual goals	Male	4.06	.625	0.024	.876
	Female	4.06	.569	-	-
3. The level of organizational attractiveness	Male	4.07	.824	7.586	.006*
	Female	4.11	.642	-	-

Total	Male	4.03	.600	.213	.645
	Female	4.06	.536	-	-

Statistically significant at the 0.05 level*

According to Table 3, the statistical analysis results comparing job selection decisions among Generation Z, classified by gender, indicate an overall significance value of 0.645. Since the Sig. Suppose the value is greater than the statistical significance level of 0.05. In that case, it can be concluded that there is no difference in decision-making levels regarding joining an organization among Generation Z in Thailand, regardless of gender.

CONCLUSION AND FUTURE WORK

Gen Z places significant importance on job security when deciding whether to join an organization. An organisation can provide employees with confidence that they will be able to perform their duties to their fullest potential, pursue their career over a defined period, or achieve goals that align with their personal aspirations. In that case, it positively influences their decision-making process. Examples include organisations that are stable and trustworthy, have clear employment contracts, do not easily terminate employees, and consistently demonstrate continuous growth and firm performance. These factors build confidence among employees that if they perform their duties to the best of their knowledge and abilities and produce quality work that meets accepted standards, they will be able to remain with the organization in the long term. Such security increases the likelihood that Gen Z in Thailand will choose to work for the organization. Job security ensures a stable income or compensation sufficient for living, and having a secure position also contributes to better career advancement opportunities in the future.

Gen Z places great importance on relationships with colleagues when deciding whether to join an organization. This is because Gen Z seeks acceptance and a sense of identity within their social environment. When an organisation provides a positive work atmosphere— characterised by good relationships among colleagues, friendliness, minimal hierarchy, mutual trust, and acceptance— it strongly influences their decision-making. Suppose colleagues are approachable, willing to listen, supportive, and cooperative in carrying out tasks with genuine enthusiasm and to the best of their abilities. In that case, it increases the likelihood that Gen Z in Thailand will choose to work for the organisation. Strong relationships with colleagues are a crucial factor that contributes to smooth and successful work processes, ultimately yielding direct benefits for the organisation.

Gen Z places significant importance on **work values** when deciding whether to join an organization. If an organisation shares similar work values with Gen Z, who tend to seek employers that reflect their own principles, it positively influences their decision-making. For example, Gen Z is drawn to organisations that prioritise work outcomes over personal status or seniority, encourage open-mindedness, treat employees equally, and offer flexibility in management and work arrangements. They value workplaces that provide autonomy, recognition, and opportunities for individuals to gain respect and social acceptance through their performance. Organizations that uphold modern values— such as using advanced technology to support work processes— are particularly appealing. Therefore, if an organisation's work values align with those of Gen Z, it is more likely to increase the level of consideration and intention among Gen Z individuals in Thailand to choose to work for that organisation.

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FACTORS AFFECTING THE WORK PERFORMANCE OF OPERATIONAL EMPLOYEES: A CASE STUDY OF A LOW-COST AIRLINE IN THAILAND

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ABSTRACT

The development and training of personnel within an organisation is a process that must be carried out systematically and effectively to ensure that employees possess competencies aligned with the organisation's vision and mission. When personnel have the appropriate knowledge, skills, abilities, and characteristics for their roles, operations in various areas can proceed smoothly and achieve the desired outcomes. Conversely, if employees lack readiness to perform their duties, whether due to insufficient knowledge, inadequate capabilities, or improper attitudes, their performance may fall short of the standards set by the organisation.

Therefore, personnel development and training must be carefully planned and implemented to enhance employees' capabilities, enabling them to work more efficiently and effectively. This process also plays a crucial role in creating sustainable competitive advantages for the organisation. For organisations in the aviation industry, a highly competitive sector, systematic personnel development is even more essential, as service quality and safety depend heavily on the readiness and competence of their employees.

Keywords: Work potential, Goals, Effectiveness, Low-Cost Airline

INTRODUCTION

In the wake of globalisation and intense competition, modern organisations must contend with both external and internal environmental factors. External factors encompass economic, political, social, and cultural conditions, whereas internal factors comprise operational methods, managerial practices, and human resources Bechtel, J., & Ramírez, R. (2023) [1]. One of the key priorities for organisations

today is the development of organisational competencies to enhance their competitive capabilities, ensuring survival and success in alignment with their vision and mission Farida, I., & Santoso, M. (2022) [2].

Therefore, the development and training of personnel must be carried out systematically and effectively to ensure that employees possess the competencies required by the organization Fejfarová, M., & Urbancová, H. (2022) [3]. When personnel possess the necessary knowledge, skills, abilities, and characteristics for their work, organisational operations can proceed smoothly and achieve the desired outcomes Hosen, M., Ogbeibu, S., Lim, W. M., Ferraris, A., Munim, Z. H., & Chong, Y. L. (2023). [4]. Conversely, if employees lack readiness—whether in terms of knowledge, skills, or attitudes, this may lead to performance that falls below organisational standards.

For this reason, personnel development and training must be carefully planned and executed to enhance employees' work efficiency and performance. Such efforts also contribute to the organisation's long-term competitive advantage. In the aviation industry, which comprises large-scale organisations, operational excellence plays a crucial role in driving development across related sectors Aksoy, C., & Akaydin, A. (2024) [5].

Therefore, the researcher is interested in studying approaches to enhance organisational performance capability within the aviation-related industry. The information obtained will be analysed to determine the outcomes of this study, to identify methods and strategies that can improve employee performance efficiency and enable them to achieve the organisational objectives set forth Nisara, P., Parnkan, V., & Sombat, T. (2023). Impacts of organization agility on the airline performance outcomes. In *E3S Web of Conferences* (Vol. 389, p. 05011). EDP Sciences [6].

Therefore, the objective of this study is to investigate the factors influencing the work potential of employees in a low-cost airline organisation in Thailand Paethrangsi, N., & Jamjumrus, T. (2021) [7]. The independent variables include personnel management factors for employees in the selected low-cost airline, demographic factors, work environment factors, and satisfaction with human resource management. The dependent variable is the work potential of employees, which encompasses work efficiency, including work quantity, quality, and productivity. As mentioned above, employee performance means that everyone's performance is adequate. It must include achieving goals, professional knowledge, and motivation. Performance evaluation is based on work quality. Wantayakul, N. (2024).

OBJECTIVE

To examine the factors related to the work potential of employees in a low-cost airline organization in Thailand.

METHODOLOGY

Section 1: Questionnaire on the demographic characteristics of the respondents, including gender, age, education level, length of employment, department or division of work, and monthly income of the respondents.

Section 2: Questionnaire on the work environment factors of operational employees in a low-cost airline in Thailand. This section includes items related to the working atmosphere, the relationship between employees and supervisors, and the relationship between employees and colleagues.

Section 3: Questionnaire on satisfaction with the human resource management of Airports of Thailand Public Company Limited (AOT). This section consists of items related to recruitment and selection, compensation, performance appraisal, and employee morale and motivation.

Section 4: Questionnaire on the work efficiency of operational employees in a low-cost airline in Thailand. This section includes items related to work quantity, work quality, and work productivity.

RESULTS

Work Environment Factors

1.1 The relationship between work environment factors specifically workplace atmosphere and work performance

Satisfaction with human resource management, specifically performance appraisal, was found to have a positive and statistically significant relationship with employee performance. The correlation is moderate and positive, meaning that when the company evaluates employees based on the quantity and quality of work performed, such evaluations influence decisions regarding wages, compensation, and promotions. Thus, when performance evaluations indicate that employees have performed well, the company should adjust compensation or salary increases based on the level of performance and the accuracy and quality of the work produced.

1.2 The relationship between work environment factors specifically the relationship between employees and supervisors and work performance

Work environment factors related to the relationship between employees and their supervisors were found to have a statistically significant positive relationship with work performance, although at a relatively low level. This indicates that the relationship moves in the same direction but with a weak degree of association. In other words, when the interpersonal environment between employees and colleagues improves, employees' work performance increases slightly. This may be because, within the company, the relationship between employees and supervisors is influenced by the supervisors' tendency to assign tasks and give instructions based solely on their own judgment, without seeking employees' input regarding their capability to perform such tasks. This practice may partially contribute to coordination issues between supervisors and subordinates, particularly in the area of task delegation and management.

1.3 The relationship between work environment factors specifically the relationship between employees and colleagues and work performance

Work environment factors relating to the relationship between employees and their colleagues were found to have a statistically significant positive relationship with work performance, although at a relatively low level. This suggests that the relationship is positive but weak in direction. In other words, when the interpersonal working environment among employees and their colleagues improves, employees' work performance increases slightly. This may be because the company assigns tasks to employees with higher educational qualifications but limited experience to work alongside employees with extensive experience but lower educational levels. These groups are required to work at the same operational level, resulting in teams composed of both competent and less capable employees. Consequently, employees with greater knowledge tend to shoulder a larger portion of the workload while still working within the same group.

HRM Satisfaction Factors

2.1 The relationship between HRM satisfaction factors related to compensation and work performance

HRM satisfaction factors related to compensation were found to have a statistically significant positive relationship with work performance, albeit at a relatively low level. This indicates that the relationship moves in the same positive direction but with a weak degree of association. In practice, the company may have policies that provide wages and compensation based on both the quality and quantity of work performed by employees. Employees who meet or exceed the company's standards receive higher compensation, whereas those who do not meet the required standards receive lower compensation. To address this issue, the company should provide training and skill development programs to equip employees with the necessary knowledge and abilities to perform their tasks at the quality and productivity levels set by the organization.

2.2 The relationship between HRM satisfaction factors regarding performance appraisal and work performance

HRM satisfaction factors related to performance appraisal were found to have a statistically significant positive relationship with work performance at a moderate level of significance. This indicates that the relationship is positive and moves in the same direction to a considerable extent. In practice, the company evaluates employees' performance based on both the quantity and quality of work produced, which serves as a basis for determining wages, compensation, and promotion opportunities. Therefore, when performance appraisal guidelines are established and applied, and employees are found to perform relatively well, they should receive appropriate compensation or salary increases that reflect their performance and the quality and accuracy of their work.

2.3 The relationship between HRM satisfaction factors regarding morale and work performance

HRM satisfaction factors related to employee morale were found to have a statistically significant positive relationship with work performance, although at a relatively low level. This means that the relationship moves in the same positive direction but with a weak degree of association. In practice, the company may have policies that provide wages and compensation based on both the quality and quantity of work performed by employees. Those who meet or exceed the company's standards receive higher compensation, while those who do not meet the standards receive lower compensation. To address this issue, the company should implement training and skill development programs to ensure that employees possess the necessary knowledge and competencies to perform their tasks at the required quality and productivity levels.

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A SPATIAL DEVELOPMENT APPROACH TO ELEVATE KANCHANABURI'S CREATIVE ECONOMY TOWARDS A SUSTAINABLE INTERNATIONAL GREEN TOURISM MODEL

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ABSTRACT

This research aimed to propose a spatial development approach to elevate Kanchanaburi's creative economy towards a sustainable international green tourism model. The sample group was People and entrepreneurs, 245 people. Use Content Analysis and summarize it as an essay.

The finding revealed that, a spatial development to elevate Kanchanaburi's creative economy towards a sustainable international green tourism model. Economic innovation and community participation in the development process as follows:

1. Development of green tourism products and services Creating value for local products such as handicrafts, products from natural resources, and unique foods of the province. It focuses on environmentally friendly production and efficient use of local resources. Focus on environmental conservation Reducing Impacts on Ecosystems and Nature Education

2. Use of green technology and renewable energy Support the use of solar and wind energy in the tourism industry, such as hotels, resorts, and tourist attractions, to reduce carbon emissions and promote energy sustainability. Waste conversion into energy or sustainable wastewater treatment to preserve the environment in tourist areas.

3. Participation of local communities in the development process By training and building skills in the community, developing skills in services, natural resource management, and marketing for the community to be able to operate the tourism business efficiently and sustainably.

4. Building an international green tourism network Building international cooperation Cooperation with international organizations in tourism and the environment To develop green tourism guidelines that are in line with international standards and exchange knowledge on natural resource management. as well as participation in international projects or contests. To create awareness on the world stage and raise the image of the province to the world.

5. Green Tourism Branding and Marketing Build a brand "Green Kanchanaburi" emphasizes the image of a city with sustainable ecotourism and environmental protection. Using the highlights of nature and culture as an attraction , as well as conducting online marketing and public relations. Use

digital technology and platforms to promote tourist attractions. Organizing special events or presenting stories of local communities. To attract tourists who are interested in green tourism.

6. Providing infrastructure to support green tourism, using green public transportation, developing and supporting the use of environmentally friendly public transportation systems such as electric buses, bicycle travel, and walking in tourist areas, as well as designing environmentally friendly tourist attractions. Develop tourist attractions that consider nature preservation and reduce environmental impact.

Spatial development to enhance the creative economy in Kanchanaburi Province. Focus on innovation in sustainable tourism using green technology. The integration of these approaches will help elevate Kanchanaburi to a model city for sustainable, internationally recognized green tourism.

Keywords: Spatial Development Approach, Kanchanaburi's Creative Economy, Sustainable International Green Tourism Model

INTRODUCTION

Thailand recognizes the importance of tourism as a key engine to help drive the country's economy. The Ministry of Tourism and Sports revealed that the number of foreign tourists in 2024 amounted to about 35.54 million. Expanded by 26.27% YoY, up from 28.15 million people last year. Generating 1.67 trillion baht in revenue for the Thai economy An increase of 34% YoY from the pre-Covid period of 39.91 million tourists. Revenue 1.91 trillion baht The Travel & Tourism Competitiveness Index ranks 34th out of 136 countries, which shows that Thailand's past tourism development approach can effectively enhance the capacity of Thailand's tourism industry. In line with market demand to maintain and develop the country's tourism capacity. The Master Plan under the National Strategy on Tourism focuses on maintaining its status as a world-class tourism destination. Create diversification of tourism in line with the needs of tourists and focus on developing tourism in potential fields while maintaining the country's strengths. Customs Traditions, culture, Thai identity, as well as providing value to the environment. (Ministry of Tourism and Sports, 2024) The Regional and Urban Development Strategy in the National Economic and Social Development Plan is another important strategy for tourism development goals to generate income and enhance competitiveness (Tourism Authority of Thailand, 2024). It focuses on the strategy of increasing tourism revenue. The project will lead Thailand to become a quality tourism destination and develop in accordance with the Ministry of Tourism and Sports' Strategy No. 5 (2022 - 2026) by using the product source development strategy. Services, facilitation, and balancing for Thai tourism through a supportive tourism marketing model. Supporting and stimulating the country's economy continuously. Therefore, the development of community-based tourism needs to look at the whole picture in all elements, with the community being an important mechanism to drive development and build strength that focuses on the sustainability of natural resources and the environment. Society and Culture This allows the community to have additional income from tourism and pride in resources. Their way and identity. It relies on the form of activities to learn about the culture and lifestyle of the community that is diverse and different in each locality to become an important and valuable tourism resource to be delivered to tourists (Phunket, W., Suphakwanit, W., & Wimuttanon, T., 2015).

Kanchanaburi Province is a province in the western part of Thailand that has a territory in contact with neighboring countries. In the overall picture, modern tourism after the COVID-19 pandemic situation began to unravel. Tourists are also worried and prioritize tourism with safety and hygiene first. There is a change in travel behavior in small groups, focusing on traveling with close

people. Family members travel a short distance. This makes the tourist area located within a radius of 300 kilometers. There is an advantage. Tourists prefer to use technology. An application to search for information to plan travel programs, including accommodation reservations. Flight tickets to pay various expenses. Avoid crowded places and pay attention to natural attractions. Tourism activities that provide more experiences or inspiration are considered to be extremely suitable areas. Because in addition to being the third largest city in the country. After Nakhon Ratchasima and Chiang Mai provinces. It is also another destination that is always in the hearts of tourists. It has never been ranked 1 in 10 from searches or surveys of tourists' needs at any time (Tourism Authority of Thailand (TAT), Kanchanaburi Office, 2022). It is only 129 kilometers from Bangkok. Kanchanaburi Province has a complete tourist spot to meet all lifestyles. Whether it is a historical tourist attraction. Nature, caves, waterfalls, forests. Culture, traditions, beliefs, food, vegetables and fruits, recreational activities. Rafting, boating, hiking. As well as the trend of eco-friendly tourism (Low Carbon) that is currently gaining popularity. Kanchanaburi Province is a "Historic City, Amazing Nature, Adventurer's Paradise" with the potential to become a high-class tourist attraction and the main tourist attraction in the Western region. It is rich in beautiful and diverse tourism resources, including historical landmarks. This is an upgrade of tourism to green tourism because it is an environmentally friendly tourism (Low Carbon) and is gaining popularity at the moment, which will lead to the development of products for the people in the community. It also generates income for people in the province.

From the above. Therefore, the research team applied the concept of King Rama IX's work in terms of the philosophy of self-sufficiency economy, explosion from within, and self-sufficiency that contributes to sustainable development or Sustainable Development Goals (SDGs), which will be used as a development direction to reduce inequality. According to Goal 10, reduce inequalities within and between countries. Ensure equal opportunity and reduce outcome inequality, including by eliminating discriminatory laws, policies, and practices, achieving sustained and sustaining income growth among the poorest 40 percent of the population. At a rate higher than the national average. By 2030, it will support technological disruption and innovation communities for sustainable development, as well as in line with the Kanchanaburi Provincial Development Plan 2023 – 2027, which is an important mechanism of Kanchanaburi Province in driving the implementation of government policies (Agenda), work according to government missions (Functions) and work at the area level in a concrete and sustainable manner. "A Spatial Development Approach to Elevate Kanchanaburi's Creative Economy towards a Sustainable International Green Tourism Model" focuses on development with technology and innovation to create an economy for the community. This will bring benefits that will lead to balance in life and make them happy and increase the competitiveness of the green tourism economy. Kanchanaburi Province is a model city for environmentally friendly tourism to be accepted by both Thai and foreign tourists in order to promote the quality of life and fair returns to the people in the community in a sustainable manner.

OBJECTIVE

To propose a spatial development approach to elevate Kanchanaburi's creative economy towards a sustainable international green tourism model.

METHODOLOGY

This research is an integrated methodology. Mixed-Method Research between Quantitative Research and Qualitative Research. The project was conducted in Kanchanaburi Province as a pilot province by purposive sampling to propose a spatial development approach to elevate Kanchanaburi's creative economy towards a sustainable international green tourism model.

4.1 Population and sample

This is a collection of data from tourism operators (5 groups of 10 people each, a total of 50 people), Product distributors (3 groups of 10 people each, a total of 30 people), community enterprises (3 groups of 5 people each, a total of 15 people), and 150 tourists, both Thai and foreign, to check and confirm the operation information. The demand and situation of green tourism, including spatial development to elevate Kanchanaburi's creative economy towards a sustainable international green tourism model.

4.2 Research Instruments

Interview about spatial development to elevate kanchanaburi's creative economy towards a sustainable international green tourism model. The process of creating the tool is as follows

1. Study of documents and research related to the a spatial development to elevate kanchanaburi's creative economy towards a sustainable international green tourism model. To upgrade the basic economy of Samut Songkhram province to use theories and concepts as a guide for creating interview drawings.
2. Create an interview that covers the content you want to study.
3. Present the generated interview form to the research project consultant (Green Tourism) for further review and suggestion for improvement in the remaining areas.
4. Complete the interview form as suggested by the research project consultant (Green Tourism).
5. Double-check and complete the correction before using it for further data collection.

4.3 Analysis of data and statistics used

The researcher conducted an opinion analysis on the needs, potential, and readiness to a spatial development to elevate kanchanaburi's creative economy towards a sustainable international green tourism model. using content analysis and summarized into essays.

RESULTS

An analysis of data on a spatial development approach to elevate Kanchanaburi's creative economy towards a sustainable international green tourism model. The public and related parties. Community leaders, village sages People in the community, entrepreneurs, Experts, agencies, stakeholders, and tourist groups The operation can be summarized as follows:

1. Reduce environmental destruction in the form of unnecessary prosperity by emphasizing community participation. In maintaining the local area to maintain the same condition but to be clean.
2. Add facilities to some things, such as community mapping, signage, or local history displays through learning from community guides.

3. There should be discussions between local authorities and communities. In joint development to seek the strengths of the community. In jointly driving between the community and local authorities.

4. Local authorities in charge of localities should propose a local development plan to become a community tourist attraction and an environmentally friendly green way.

5. Emphasis should be placed on the connection between communities, entrepreneurs, Government agencies (localities) to jointly analyze the value of developing green community tourism attractions to study the cost-effectiveness, costs, or various impacts that occur, both positive and negative.

6. Prepare a tourism calendar with the community proposing it in each period or month. What are the highlights of the community to present as a tourism calendar of the community and add various highlights that exist in the community, such as cultural capital, to be more prominent? Attractive

A spatial development to elevate kanchanaburi's creative economy towards a sustainable international green tourism model. Economic innovation and community participation in the development process as follows

1. Development of green tourism products and services

1.1 Guidelines for the development of tourism products and services should focus on sustainability and conservation of natural resources. The emphasis is on environmentally friendly tourism, such as:

1.2 Ecotourism promotes ecotourism in mountainous forest areas. Waterfalls and national parks of Kanchanaburi with an emphasis on environmental conservation. Reducing Impacts on Ecosystems and Nature Education

1.3 Promotion of sustainable local products Creating value for local products such as handicrafts, products from natural resources, and unique foods of the province. It focuses on environmentally friendly production and efficient use of local resources. Sitthiwarongchai, C , Rodjam, C, Sukmaitree, J, Ninaroon, P, Suwannarat, T, Butdam, C and Chotianusorn, E. (2022).

2. Use of green technology and renewable energy

2.1 The adoption of sustainable technologies in the tourism sector is an important factor in driving the development towards becoming a model city for green tourism.

2.2 Renewable energy: Support the use of solar and wind energy in tourism businesses such as hotels, resorts, and tourist attractions to reduce carbon emissions and promote energy sustainability.

2.3 Waste and wastewater management technology: Apply effective waste management technology such as recycling. Waste conversion into energy or sustainable wastewater treatment to preserve the environment in tourist areas.

3. Participation of local communities in the development process

3.1 Sustainable development should be achieved by the participation of local communities to create long-term responsibility and cooperation.

3.2 Building a Green Tourism Community Encourage communities to play a role in the development and management of their own tourist attractions. By using natural resources and local culture as a driver.

3.3 Training and skill building in the community, developing skills in services, natural resource management, and marketing for the community to be able to operate the tourism business efficiently and sustainably. Ninaroon P., Boonying J., Pruksaarporn S., Khlungsaeng W., Sudsawart J., Songkhla R. Na. (2024).

4. Building an international green tourism network

4.1 Developing Kanchanaburi as a model city for green tourism must establish cooperation with international tourism networks.

4.2 Building International Cooperation Cooperation with international organizations in tourism and the environment To develop green tourism guidelines that are in line with international standards and exchange knowledge on natural resource management.

4.3 Participation in international projects or contests To create awareness on the world stage and raise the image of the province to the world.

5. Green Tourism Branding and Marketing

5.1 Clear branding and international marketing promotion are important factors in attracting environmentally conscious tourists.

5.2 Branding 'Green Kanchanaburi' emphasizes the image of a city with sustainable ecotourism and environmental protection. Using natural and cultural features as an attraction.

5.3 Online Marketing and Public Relations Use digital technology and platforms to promote tourist attractions. Organizing special events or presenting stories of local communities. To attract tourists who are interested in green tourism.

6. Providing infrastructure to support green tourism

6.1 Infrastructure is the key to making green tourism sustainable

6.2 Green public transportation: Develop and support the use of environmentally friendly public transportation systems such as electric buses, bicycle travel, and walking in tourist areas.

6.3 Environmentally friendly attraction design Develop tourist attractions that take into account nature preservation and environmental impact reduction, such as creating hiking trails that do not affect the ecosystem. Observation Deck Management that Takes Consideration for Safety and Naturalness Preservation

Spatial development to enhance the creative economy in Kanchanaburi Province. Focus on innovation in the field of sustainable tourism. Using green technology. The integration of these approaches will help elevate Kanchanaburi to become a model city for sustainable and internationally recognized green tourism.

CONCLUSION AND FUTURE WORK

According to the findings of A Spatial Development Approach to Elevate Kanchanaburi's Creative Economy towards a Sustainable International Green Tourism Model, the development of local products and services that are environmentally friendly Creating and promoting local products that are linked to the creative economy, such as natural products, local handicrafts, etc. Branding for international markets is an important approach to add value to local products and services, integrating digital technologies. By applying digital technology to promote green tourism, such as online marketing to attract foreign tourists. Presentation of information about green tourism through digital platforms It helps to expand the reach of international markets and build a network of cooperation. Promoting cooperation between various agencies such as the government, the private sector, Communities and international organizations to formulate an effective green tourism development strategy. Infrastructure development and financial support for the development of sustainable green tourism projects Leading to Sustainable Development The development approach emphasizes the efficient and sustainable use of natural resources. Taking into account the needs of tourists who pay attention to environmental conservation. Creating a tourism system that reduces environmental impact, such as reducing carbon emissions and using clean energy, is essential to the development of sustainable model cities. This is in line with the concept of the creative economy (Kiatnakin, S., 2010) said: Processor Activity is caused by two main factors: 1) Intellectual Capital can be in the form of an existing "knowledge base" or "new knowledge" that can be used to further develop ideas. This type of capital can be generated from human capital, such as education and training that leads to new ideas, cultural capital, such as traditional Thai culture, and social capital, such as local customs and knowledge, etc., and 2) Adaptive Skills, which support the application of knowledge and intellectual capital to production/ services that can create concrete value/value. and the research of Sangraksa, N., Yuenyongsuwan, S., & Lakkhananurak, S. (2014) on The development of a model city for the creative economy, the city of Ong, Din Suk and Doll to develop the competitiveness of entering the ASEAN community and link OTOP products with creative tourism in Ratchaburi Province. The objectives of this research are 1) to study the guidelines for supporting OTOP products and tourism in the city of art and leisure in Ratchaburi Province, 2) to study the satisfaction of tourists with OTOP products in Ratchaburi Province, and 3) to extract lessons from the research in 2015-2016. In the stage of 30 main informants, specifically selected, in step 2, the population is Thai tourists. The sample from the opening of the Krejcie & Morgan table (1970) was 384 random people, proportional to the level of geography, and step 30 main informants. Questionnaire sentiment value = .824 In-depth interview approach Group discussion approaches and non-participatory observations Collect data and analyze quantitative data with ready-made computer programs. The statistics used were frequency, percentage, average, standard deviation, and qualitative data analysis. Entrepreneurs must have products that meet the standards. Diverse styles and packaging, attractive, reasonable prices. As for tourism, tourism activities must be organized every day. The government provides continuous support in public relations through (2) Tourists' satisfaction with Ratchaburi's OTOP products. and (3) the results of the research that Ratchaburi Province has the potential and readiness to become a city of art and leisure, but OTOP products should be distributed in various tourist destinations to cover good goods, souvenirs, souvenirs, which have a natural foundation and diverse cultures that will be integrated and linked.

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of community enterprises and the network of farmer housewives according to the King's Philosophy, Samut Songkhram Province" of Cholphassorn Sitthiwarongchai, Chumpon Rodjam, Jagraval Sukmaitree, Panida Ninaroon, Thuwathida Suwannarat, Chetsanee Butdam and Eakolarn Chotianusorn.

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THE INFLUENCE OF INFLUENCERS ON ONLINE PLATFORMS ON CREATING OWN BRANDING OF ONLINE AUDIENCES

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ABSTRACT

The rise of digital platforms has fundamentally changed how individuals construct personal identity and develop their own branding (Belk, 2013; Schau & Gilly, 2003). Influencers—individuals who possess the ability to shape attitudes, preferences, and behaviors through online content—play a critical role in this transformation (Marwick, 2015; Abidin, 2016). Their visibility, perceived authenticity, and social presence significantly affect how online audiences learn, imitate, and internalize branding practices (Horton & Wohl, 1956; Labrecque, 2020).

This article employs a literature-based analytical approach to examine how influencers on platforms such as Facebook, Instagram, TikTok, and YouTube shape the personal branding processes of online audiences. Findings indicate that influencers affect audiences through three primary mechanisms: social learning, aspirational identification, and participatory engagement (Khamis et al., 2017; Escalas & Bettman, 2017). These mechanisms encourage audiences to adopt branding strategies, aesthetic styles, identity performances, and digital storytelling techniques modeled by influencers (Marwick & Boyd, 2011; Veirman et al., 2017).

Results reveal that online audiences do not merely consume influencer content but actively refashion themselves through digital persona creation, visual curation, and interactive engagement (Senft, 2013). However, challenges remain, including unrealistic beauty standards, algorithm-driven pressure, and the commercialization of identity (Hearn & Schoenhoff, 2016).

Keywords: influencers, personal branding, online platforms, digital identity, social media behavior

INTRODUCTION

The rapid expansion of social media platforms has transformed how individuals present themselves, communicate, and shape public perception (Marwick, 2015). Influencers—content creators with substantial reach and persuasive capacity—have emerged as powerful cultural intermediaries capable of altering trends, lifestyles, and values within digital environments (Abidin, 2016; Hearn & Schoenhoff, 2016). As audiences increasingly consume influencer-generated content, the process of creating personal branding has shifted from being exclusive to public figures and organizations to becoming a widespread social practice (Khamis et al., 2017).

Personal branding is no longer limited to professionals or celebrities; rather, digital users of all backgrounds strategically curate online identities to attract followers, enhance social status, or pursue economic opportunities (Schau & Gilly, 2003; Belk, 2013). Influencers contribute significantly to this phenomenon by providing models, templates, and narratives that audiences can adapt and emulate (Childers et al., 2019).

This article examines how influencers function as agents of behavioral modeling, shaping the personal branding strategies of online audiences. Through a review of international and regional literature, the article explores (1) how influencers influence audience behavior, (2) how audiences construct their own brand identities, and (3) the implications for digital culture and online participation (Escalas & Bettman, 2017)

Conceptual Framework and Related Literature

2.1 Influencer Concepts

Influencers are individuals who possess perceived expertise, attractiveness, authenticity, or social authority in particular content domains (Audrezet et al., 2020). Their persuasive power is derived from three key dimensions:

Parasocial interaction: audiences feel personal connection or intimacy (Horton & Wohl, 1956).

Perceived authenticity: influencers appear “real,” relatable, and trustworthy (Audrezet et al., 2020).

Social proof: large follower counts and engagement create perceived credibility (Djafarova & Trofimenko, 2019)

Influencers affect attitudes and behaviors through modeling lifestyles, values, and consumption patterns that audiences imitate or internalize (Marwick, 2015)

2.2 Personal Branding

Personal branding refers to the strategic process of defining and communicating a distinctive identity or image to influence others' perceptions (Khamis et al., 2017). On digital platforms, personal branding includes:

identity curation (Schau & Gilly, 2003)

visual aesthetics (Marwick, 2015)

consistent messaging (Senft, 2013)

lifestyle narratives (Belk, 2013)

community engagement (Childers et al., 2019)

Digital platforms amplify personal branding because algorithms reward visibility, consistency, and interaction (Veirman et al., 2017; Marwick & Boyd, 2011).

2.3 Digital Platforms and Audience Behavior

Social media platforms play a structural role

Algorithms promote influencer content to targeted audiences (Veirman et al., 2017)

Interactive tools (likes, comments, shares) reinforce identity performance (Marwick & Boyd, 2011)

Platform cultures (challenges, trends, aesthetics) shape branding norms (Ting et al., 2015)

Studies suggest that online audiences learn branding behaviors through social learning theory, peer influence, and aspirational identification (Escalas & Bettman, 2017)

2.4 Related Studies

Existing research identifies several themes

Influencer persuasion—Influencers shape perceptions of beauty, lifestyle, and consumption (Marwick, 2015)

Audience imitation—Younger audiences replicate influencer aesthetics and communication styles (Childers et al., 2019)

Digital identity formation—Users construct multiple identities across platforms, influenced by cultural norms and digital interactions (Belk, 2013)

Brand co-creation—Audiences participate in branding through engagement, memes, and user-generated content (Senft, 2013)

Together, these studies highlight influences as key agents in shaping digital behavior and personal branding practices (Khamis et al., 2017)

OBJECTIVES

1. To analyze the mechanisms through which influencers affect online audiences on digital platforms (Escalas & Bettman, 2017)
2. To examine how online audiences construct personal branding based on influencer models and digital culture (Schau & Gilly, 2003)
3. To identify implications and challenges arising from influencer-driven personal branding (Marwick, 2015)

METHODOLOGY

This article is based on a qualitative review of academic research, digital culture studies, marketing literature, and social media behavioral analysis (Hearn & Schoenhoff, 2016) Sources include journal articles on influencers, branding, and digital identity (Abidin, 2016) marketing and communication research (Childers et al., 2019) reports on social media usage case studies of influencer-audience interactions (Liu et al., 2019)

The analysis focuses on three key dimensions mechanisms of influencer impact personal branding practices among audiences cultural and behavioral implications of online identity formation (Belk, 2013)

Findings

5.1 Mechanisms of Influencer Impact

Influencers shape audience behavior through:

Social Learning

Audiences observe influencer behavior—style, language, aesthetics—and replicate them (Marwick, 2015)

Aspirational Identification

Audiences identify with influencers' lifestyles and seek to emulate their digital success (Escalas & Bettman, 2017)

Engagement and Participation

Interactive features motivate audiences to participate, imitate, and perform similar content (Marwick & Boyd, 2011)

5.2 Personal Branding Practices of Online Audiences

Digital audiences create personal branding through:

Identity Construction

Curating photos, captions, and themes inspired by influencers (Schau & Gilly, 2003)

Aesthetic Replication

Adopting influencer-style visuals, filters, fashion, and tone (Abidin, 2016)

Narrative Building

Sharing personal stories modeled after influencer storytelling structures (Childers et al., 2019)

5.3 Cultural and Behavioral Implications

Influencer-driven branding has several impacts

increases pressure for self-presentation (Marwick, 2015) blurs boundaries between personal identity and commercial identity (Khamis et al., 2017) reinforces platform algorithms that reward aesthetic conformity (Veirman et al., 2017) influences youth culture, career aspirations, and social norms (Ting et al., 2015)

Discussion

While influencers offer inspiration and skill-building for personal branding, challenges arise

Digital Inequality

Not all users have equal access to technology, editing tools, or platforms (Childers et al., 2019)

Psychological Pressure

Influencer culture fosters perfectionism, comparison, and self-image issues (Marwick, 2015)

Commercialization of Identity

Personal branding becomes linked to monetization, leading to identity commodification (Hearn & Schoenhoff, 2016)

Algorithmic Influence

Platform algorithms shape what personal branding styles become visible or successful (Veirman et al., 2017)

Development directions should emphasize media literacy, healthy online engagement, and better regulation of influencer commercial practices (Audrezet et al., 2020)

Case Studies

7.1 Micro-influencers on Instagram

Audiences replicate minimalistic aesthetics, lifestyle photography, and color palettes (Childers et al., 2019)

7.2 TikTok Content Trends

Short-form videos create rapid cycles of imitation, accelerating branding trends among youth (Ting et al., 2015)

7.3 YouTube Personality Branding

Long-form vlogs inspire audiences to develop persona-based branding (Liu et al., 2019)

RESULTS

Influencers significantly shape how online audiences understand and practice personal branding through modeling, imitation, and interactive engagement (Marwick, 2015; Khamis et al., 2017)

Online audiences actively co-construct their digital identities by adopting aesthetic styles, narratives, and branding frameworks demonstrated by influencers (Senft, 2013)

The influence is moderated by algorithmic exposure, digital literacy, socio-cultural backgrounds, and psychological factors (Veirman et al., 2017)

CONCLUSION AND FUTURE WORK

Influencers play a powerful role in shaping how online audiences create personal branding. Their visibility, authenticity, and aesthetic leadership offer templates that audiences adopt, modify, and internalize (Marwick, 2015; Abidin, 2016). While influencers provide learning opportunities and inspiration, their impact also raises concerns about digital pressure, identity commodification, and algorithmic shaping of self-expression (Hearn & Schoenhoff, 2016). Strengthening digital literacy, promoting responsible influencer practices, and encouraging diverse forms of identity expression can support healthier personal branding among online audiences (Audrezet et al., 2020). The entertainment business or e-commerce business as the different consumer behaviors such as their independence and convenience in choosing digital media on any social media as required. Chomchoom, N., Assawapongvanich, K., Phakajang, A. (2024).

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**A STUDY OF PERSONNEL PRATICIPATION IN EDUCATIONAL
QUALITY ASSURANCE OF THE COLLEGE OF INNOVATION AND
MANAGEMANT,
SUAN SUNANDHA RAJABHAT UNIVERSITY**

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ABSTRACT

A Study on the Participation of Personnel in Quality Assurance of Education in the College of Innovation and Management, Suan Sunanda Rajabhat University. The objective of this study was to study the level of involvement of personnel in the quality assurance of education at the College of Innovation and Management. The population group for this study comprises staff and lecturers in the College of Innovation and Management. Suan Sunanda Rajabhat University for participating in education quality assurance. The data were collected by questionnaires, and statistics were used to analyze the data, including percentages, averages, and standard deviations. The results showed that the sample had opinions on the factors of personnel participation in education quality assurance. The factors of support for participation and the factors of the potential of the task force are at a very agreeable level.

Keywords: Educational Quality Assurance, College of Innovation and Management, Organization Development.

INTRODUCTION

Educational quality assurance is the management and implementation of activities within an educational institution's regular missions to continuously improve the quality of students. This builds confidence among educational service recipients, prevents poor quality education, and transforms education into a powerful mechanism for improving the quality of the population (Suphawadi Trirat, n.d.). Therefore, the educational quality assurance process is a crucial tool in current educational management and must be implemented continuously (Office of the Basic Education Commission, 2011, p. 2).

Internal quality assurance is a system through which educational institutions assure service recipients— students, parents, communities, and organizations or businesses that accept students for further study or employment—that the institution can provide quality education in accordance with established standards. This is achieved through quality management across the organization, with participation from all personnel within the institution, particularly teachers and administrators, who recognize the primary goal of student benefits (Office of the Basic Education Commission, 2011, p. 9). Therefore, educational quality assurance is a key mechanism that drives continuous educational development and ensures accountability. Management is based on internal participatory management. To achieve the goals of internal quality assurance, educational quality assurance must be integrated into

the management and work processes of all personnel within the institution, not a separate process from the institution's normal operations. Educational institutions must develop and implement development plans and action plans with clear goals, implement plans, monitor and evaluate results, and continuously improve. This system must be transparent and conscious of improving work quality.

The researcher is interested in studying the participation of personnel in quality assurance at the College of Innovation and Management, Suan Sunandha Rajabhat University. This information will provide guidelines for administrators and stakeholders to plan and implement, as well as improve quality assurance for greater efficiency.

OBJECTIVE

To study the level of personnel participation in educational quality assurance of the College of Innovation and Management, Suan Sunandha Rajabhat University.

METHODOLOGY

Scope of the Research

1. Population and sample

The population used in this research consisted of 30 staff and lecturers in the College of Innovation and Management, Suan Sunandha Rajabhat University, who were involved in the quality assurance of education.

2. Content

This research is a study of the level of personnel participation in quality assurance of education at the College of Innovation and Management.

3. Time aspect

The researcher carried out the work between January 2024 - July 2024.

4. Location

College of Innovation and Management Suan Sunandha Rajabhat University.

Expected Benefits

The information can be used as part of developing educational quality assurance work to be more efficient.

RESULT

The majority of the sample was female (76.00%), with a bachelor's degree (22.00%), followed by a master's degree (30.00%). As for age, the majority of the sample was 31 - 40 years old (62.00%), followed by 41 - 50 years old (20.00%), respectively.

The majority of the sample was female (76.00%) and held a bachelor's degree (22.00%), followed by a master's degree (30.00%). Regarding age, the majority of the sample was 31-40 years old (62.00%), followed by 41-50 years old (20.00%).

The respondents expressed strong agreement regarding participation (average 4.17). Considering each item, the highest mean score was: 1. Clearly defined philosophy regarding educational quality assurance (average 4.39). 2. Recognizing the necessity of educational quality assurance (average 4.33). 3. Clearly defined objectives for educational quality assurance (average 4.30). All three items had strong agreement. The lowest mean score was: Regularly analyze and improve strategies to keep them current and aligned with current conditions and future trends (average 3.89). The respondents strongly agreed.

Comments on Participation Factors The sample group expressed strong agreement (average 3.78). When considering each item, 14 items expressed strong agreement and 1 item expressed moderate agreement. The item with the highest mean score was Rotation of personnel responsible for educational quality assurance every academic year (average 4.20). The second item was Regular supervision of educational quality assurance units (average 4.04). The third item was Development of an educational quality assurance manual for widespread distribution (average 4.03). All three items expressed strong agreement. The last item with the highest mean score was The university continuously organizes study tours on educational quality assurance outside the university (average 3.25). The sample group expressed moderate agreement.

The sample group expressed strong agreement regarding the operational unit's potential (average 3.75). When considering each item, all items expressed strong agreement. The item with the highest mean score was:

1. There is a systematic process for implementing educational quality assurance activities (mean 4.16).
 2. There is a plan for using resources to be beneficial and worthwhile for educational quality assurance work (mean 3.98).
 3. There is the ability to allocate resources sufficiently to meet the needs of the educational quality assurance unit (mean 3.92).
- The item with the lowest mean score was: The college's administrative structure helps the educational quality assurance work to be efficient (mean 3.43).

CONCLUSION AND FUTURE WORK

1. The research results indicate that the implementation of the college's educational quality assurance policy depends on policy implementation factors, implementation support factors, and the capacity of implementing units, and each factor is interrelated. Therefore, studies should be conducted on the policy implementation process at other levels, such as universities, as well as on factors affecting the success of policy implementation in other areas. Chanwichian, J. (2024).

2. A comparative study should be conducted on factors affecting the success and failure of policy implementation between domestic and international universities.

3. A study should be conducted on factors affecting the success of off-campus education provision at higher education institutions.

4. A study should be conducted on models or methods to promote participation by external agencies in policy formulation and implementation at educational institutions.

5. A study should be conducted on and development of systems and mechanisms to promote and support students, particularly student organizations, in driving educational quality assurance with a student-centered approach.

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FACTORS AFFECTING THE EFFICIENCY OF ACADEMIC SERVICES TO SOCIETY IN HIGHER EDUCATION INSTITUTIONS IN THAILAND

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ABSTRACT

This research investigated the influence of four innovative factors as Policy Support, Project Management and Workflow Systems, Competence and Expertise of Personnel, and Community Needs on the Efficiency of Academic Services to Society. The study focused specifically people who participants in academic service programs by collage of innovation management Suansunandha University in Ranong Province. A quantitative survey approach was employed to collect data from personnel and stakeholders involved in academic service activities.

The result found that all factors significantly influenced service efficiency. Notably, Competence and Expertise of Personnel and Community Needs were identified as the strongest and most critical predictors. These findings underscore that while institutional support provides the mandate, the efficiency and success of academic services are ultimately determined by the capability of the staff and the relevance of the service to the community's actual requirements.

Keywords: Academic Services Efficiency, Policy Support, Personnel Competence, Project Management, Community Needs

INTRODUCTION

Academic services constitute a critical mission for Higher Education Institutions in Thailand, serving as a primary mechanism for knowledge transfer and societal development, which is essential for national competitiveness and avoiding the middle-income trap. However, In Thailand often face challenges in effectively maximizing the impact of these services due to issues like operational inefficiencies, disjointed management, and a perceived gap between university output and community needs (Jariyachamsit & Sitthiwarongchai, 2023).

This research aims to investigate the influence of administrative, organizational, and personnel factors on the efficiency of academic services to society, providing model to enhance performance and ensure genuine social impact.

OBJECTIVE

To study factors Affecting Efficiency of Academic Services to Society.

1.2 Research scope

1.2.1 Content Scope

This research investigates the influence of administrative, organizational, and personnel factors on the efficiency of academic services to society. The study will culminate in a performance enhancement model designed to maximize these services' genuine social impact of people who participants in academic service programs by collage of innovation management Suansunandha University in Ranong Province. The research will be conducted during the year 2025.

1.2.2 Population scope

Research Data used in this study were obtained from people who participants in academic service programs by collage of innovation management Suansunandha University in Ranong Province.

1.2.3 Scope of area

Ranong Province Thailand.

1.3 Conceptual framework

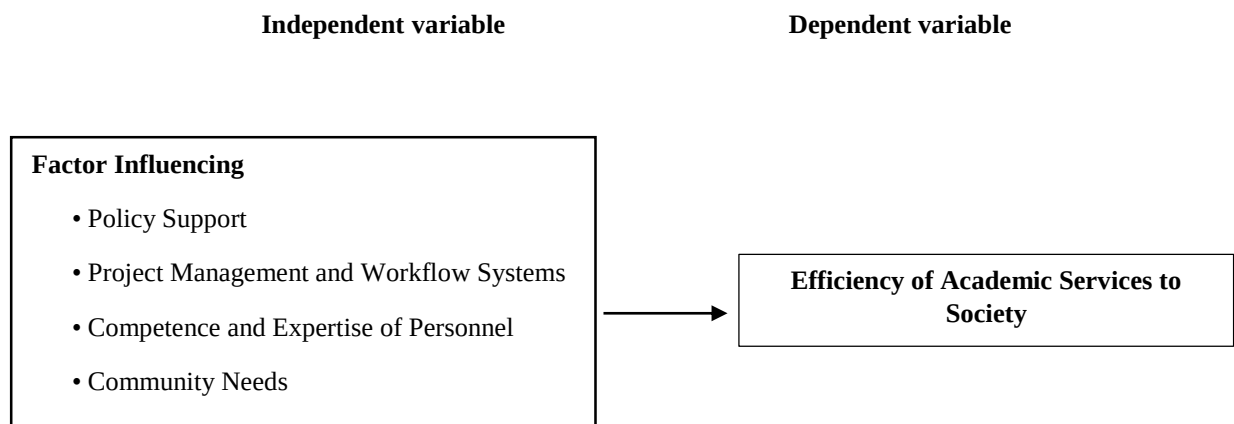


Figure 1: Conceptual framework

Source: (Alvarez-Sández et al., 2023)

METHODOLOGY

2. Research methodology

2.1 Research design

This study adopts a quantitative research approach, which entails explaining phenomena through the collection of numerical data analyzed using mathematical techniques, particularly statistics. Professional quantitative research hinges on accurate data. Thus, the questionnaire design, population selection, sampling strategies, and data collection were methodically structured to ensure reliability (Creswell & Creswell, 2023).

2.2 Population and samples

2.2.1 Population

The population in this study consists of participants involved in academic service activities implemented by the College of Innovation and Management, Suan Sunandha Rajabhat University, within Ranong Province (Suan Sunandha Rajabhat University, n.d.).

2.2.2 Samples

A sample group of 1,180 participants who engaged in academic service programs organized by the College of Innovation and Management, Suan Sunandha Rajabhat University, in Ranong Province, was selected through a simple random sampling method, ensuring that each individual in the population had an equal probability of selection.

The sample size was determined using the Taro Yamane formula (Yamane, 1973) with a 95% confidence level and a margin of error of 0.025 for the sample group, as follows:

$$\text{Using the formula } n = \frac{N}{1+N(e)^2}$$

n = sample size
N = study population size
e = is the margin of error (set at 2.5% or 0.025)

the sample size for this study is calculated as follows:

$$n = \frac{1180}{1+1180(.25)^2}$$
$$n = 299$$

2.3 Instrumentation

The research tool used to collect data is a questionnaire, which applied theories, concepts, and related research on factors influencing Efficiency of Academic Services to Society. To defining each variable and creating the questionnaire. Then checked the quality of the questionnaire and set scoring criteria. The development process of the research questionnaire

2.4 Testing quality of research instrument

This research used a questionnaire to examine the content validity of the text in each question to ensure that they aligned with the objectives of the study. The questionnaire was reviewed by three qualified individuals to assess the clarity of the language and the congruence of the questions with the objectives (Index of Item Objective Congruence: IOC), where an acceptable index value must be 0.50 or higher. The scoring criteria were as follows:

The IOC for each question was calculated using the following formula:

$$IOC = \frac{\sum R}{N}$$

Where IOC refers to the index of item objective congruence between the content of the question and the objectives of the study.

R refers to the score given by each qualified individual.

ΣR refers to the sum of scores given by each qualified individual for each question.

N refers to the number of qualified individuals.

An acceptable index value must be 0.50 or higher. And selected questions with an IOC value of 0.50 or higher for use in the study, all of which were evaluated by the three qualified individuals and found to have content validity that covered all aspects of the objectives, with an IOC value ranging from 0.80-1.00.

2.4.1 Content validity

The instrument has been revised based on expert feedback, the content validity could be assessed using the Index of Content Validity (IOC) method (Rovinelli & Hambleton, 1977), as described in my previous response. The IOC could be calculated by obtaining ratings

2.5 Data collection

This research collected data by using an online questionnaire with a sample group of 100 people, while keeping backup data in case of incomplete or inaccurate responses at a rate of 10%.

2.6 Data Analysis

This research makes inferences about the population based on the sample data, then inferential statistics such as multiple regression analysis (Gujarati & Porter, 2009). Multiple regression analysis can be used to examine the relationships between the dependent variable and multiple independent variables and test hypotheses about the population.

RESULTS AND FINDINGS

3. Results and Findings

3.1 Testing the reliability of the questionnaire

To validate the questionnaire's accuracy and reliability (DeVellis, 2016), a preliminary test with 30 sets will be conducted under conditions similar to actual data collection. This aims to assess data collection, comprehension, and communication of question meanings within the sample group. Furthermore, an analysis will be performed to gauge the questionnaire's reliability using the Internal Consistency Method. This analysis will consider corrected item total correlations, ideally at least 0.20, and Cronbach's alpha, introduced by Cronbach (1951) as a measure of internal consistency reliability. A Cronbach's alpha greater than 0.70 is indicative of consistency among the questionnaire items within each aspect as shown in Table 3.1

Table 3.1: Results of reliability analysis (Reliability)

Variables	Number of questions	Reliability Cronbach's Alpha (n=30)
1. Policy Support	4	0.996
2. Project Management and Workflow Systems	5	0.998
3. Competence and Expertise of Personnel	5	0.999
4. Competence and Expertise of Personnel	4	0.997
5. Community Needs	5	0.996
Total	23	0.997

The results of the reliability analysis from Table 3.1 show that the reliability for the questions in each section range from 0.996 to 0.999, and the overall reliability is 0.997 (n = 30). Additionally, the questionnaire has been reviewed and its content has been confirmed to be appropriate. Therefore, it can be concluded that the questionnaire is suitable for use in collecting data for research.

3.2 Results of the Opinion Level of Factors Influencing Efficiency of Academic Services to Society.

Results of Data Analysis on the Opinion Level Factors Influencing Efficiency of Academic Services to Society. Analyzing the data on Policy Support

Project Management and Workflow Systems, Competence and Expertise of Personnel and Community Needs. The results are presented as averages, standard deviations, and data interpretation in Table 3.2

Table 3.2: Average and standard overall deviation of Factors Influencing Efficiency of Academic Services to Society.

Factors Influencing Efficiency of Academic Services to Society overall	Level of opinion			
	$\bar{x}$	S.D.	Level	Sequence
1. Policy Support	3.51	0.790	High	1
2. Project Management and Workflow Systems	3.50	0.802	High	4
3. Competence and Expertise of Personnel	3.51	0.793	High	3
4. Community Needs	3.50	0.794	High	2
Total	3.50	0.788	High	

From Table 3.2, the average and standard deviation values of opinions regarding the Factors Influencing Efficiency of Academic Services to Society were found to be at a high level overall, with an average value of 3.50 and a standard deviation of 0.788. When considering each factor individually, it was found that the aspect with the highest average value was Policy Support ($\bar{X}$ = 3.51, S.D. = 0.790), followed by Community Needs ($\bar{X}$ = 3.50, S.D. = 0.794), Competence and Expertise of Personnel ($\bar{X}$ = 3.51, S.D. = 0.793), and Project Management and Workflow Systems ($\bar{X}$ = 3.50, S.D. = 0.802), respectively. These results indicate that respondents expressed a high level of opinion across all dimensions related to the Factors Influencing Efficiency of Academic Services to Society.

3.3 Hypothesis test results

Hypothesis 1: Policy Support (X1) influences Efficiency of Academic Services to Society.

Hypothesis 2: Project Management and Workflow Systems (X2) affects Efficiency of Academic Services to Society.

Hypothesis 3: Competence and Expertise of Personnel (X3) impact Efficiency of Academic Services to Society.

Hypothesis 4: Community Needs (X4) influences Efficiency of Academic Services to Society.

The statistical hypotheses can be stated as:

H0: Policy Support (X1), Project Management and Workflow Systems, Competence and Expertise of Personnel (X3), and Community Needs (X4) collectively affect Efficiency of Academic Services to Society.

H1: Policy Support (X1), Project Management and Workflow Systems, Competence and Expertise of Personnel (X3), and Community Needs (X4) do not collectively affect Efficiency of Academic Services to Society.

The statistical test used to test the hypothesis is Multiple Regression Analysis, by selecting independent variables into the regression equation using the Stepwise technique at a confidence level of 95%, rejecting the null hypothesis (H0) when Sig is less than 0.05. The results of the test are shown in Tables 3.3-3.4

Table 3.3: The correlation coefficients between factors influencing Efficiency of Academic Services to Society

Factor	X1	X2	X3	X4	Y
X1	1.000				
X2	0.499*	1.000			
X3	0.189**	0.457	1.000		
X4	0.390**	0.112*	0.464**	1.000	
Y	0.124**	0.301**	0.150**	0.421**	1.000

* Statistically significant 0.05

*** Statistically significant 0.01*

X1 represents Policy Support.

X2 represents Project Management and Workflow Systems.

X3 represents Competence and Expertise of Personnel.

X4 represents Community Needs.

Y represents Efficiency of Academic Services to Society.

Table 3.4: Model Summary

R	R²	Adjust R²	SE	Durbin-Watson
0.988	0.976	0.976	0.125	1.865

From Table 3.4, Shows the relationship between all dependent variables and independent variables, found that the Adjusted R² value 0.976 means that the variance in the dependent variable can explained by the independent variable, that affect Efficiency of Academic Services to Society.

Table 3.5: Analysis of Variance (ANOVA)

Source of variation	SS	Df	MS	F	Sig
Regression	187.988	4	46.997	192.177	0.000*
Residual	4.621	294	0.016		
Total	192.609	298			

** Statistically significant 0.05*

The multiple regression analysis explored factors affecting Efficiency of Academic Services to Society: Policy Support (X1), Project Management and Workflow Systems (X2), Competence and Expertise of Personnel (X3), and Community Needs (X4). Using the Standard method, the analysis revealed an Adjusted R² value of 0.976, indicating that 97.6% of the variance in Efficiency of Academic Services to Society can be explained by the independent variables that affect Efficiency of Academic Services to Society.

ANOVA results (F -value = 192.177, Sig. = 0.000 < 0.05) confirmed an overall significant impact of at least one factor on Efficiency of Academic Services to Society. Specifically, information regarding the individual significance of each factor (X1 to X4) is missing from the tables provided (it would be in a separate Coefficient table), so the subsequent sentence in the original text about individual factors cannot be accurately derived. Specifically, Community Needs, Competence and Expertise of Personnel, and Policy Support significantly influenced their adaptations (Sig. = 0.000, Sig. = 0.000, Sig. = 0.020, respectively), highlighting their substantial impact below the 0.05 significance level. These findings underscore the significant influence of these factors on Efficiency of Academic Services to Society. The regression equation can be written as follows

$$Y^{\wedge} = \text{Constant} + 0.572(X4) + 0.268(X3) + 0.140(X1)$$

Factors Affecting the Efficiency of Academic Services to Society in Higher Education Institutions in Thailand include Community Needs ($X4$), Competence and Expertise of Personnel ($X3$), and Policy Support ($X1$). Community Needs holds the strongest correlation (standardized coefficient) at 0.572, signifying a significant influence on their choice. Competence and Expertise of Personnel follows with a correlation of 0.268, indicating a partial impact. Policy Support displays a correlation of 0.140, reflecting a moderate influence on their adaptations.

CONCLUSION AND FUTURE WORK

4. Conclusion and future work

This study successfully investigated the relationship between administrative, organizational, and personnel factors and the Efficiency of Academic Services to Society within Higher Education Institutions. The findings affirm that service efficiency is not determined by a single element but is a complex, multi-dimensional outcome resulting from the strategic interplay of organizational support, process maturity, human capital, and stakeholder engagement.

The critical importance of Competence and Expertise of Personnel, which emerged as the strongest and most consistent predictor of service efficiency. This highlights a fundamental truth: while Policy and Executive Support provides the necessary mandate and resources, and robust Project Management and Workflow Systems provide the structure, the final measure of efficiency relies on the capability, readiness, and motivation of the faculty and staff delivering the services. Furthermore, the significant role of Community Participation and Needs confirms that true efficiency is achieved only when the service is relevant and aligned with the actual needs of the recipients, ensuring that project success translates directly into positive societal impact. In synthesis, the study provides a validated, four-factor framework that allows administrators to move from general administrative compliance to a targeted, evidence-based strategy for enhancing community engagement and service delivery outcomes.

Discussion

5. Discussion

The discussion of the results shows that the quality of university services to the community is most heavily influenced by the competence and expertise of the staff who do the work, and how well the service matches the real needs of the (Compare et al., 2024). These factors are more critical than having just a clear policy or good management systems, though those elements are still necessary foundations. This finding supports existing theories that public services are best delivered when focusing on human capital and genuine co-production with the community. However, a key limitation is that our data was collected at only one point in time, meaning we can show a strong connection, but we cannot definitively prove cause-and-effect—a challenge that future, longer-term research should aim to solve.

Suggestions

6. Suggestions

Based on the finding that personnel competence and community participation are paramount for service efficiency, university administrators should prioritize targeted training for staff in specialized service-related skills and must institutionalize co-design and feedback mechanisms with the community to ensure project relevance. For future research, it is crucial to move beyond correlation to causal modeling and longitudinal studies to definitively prove how executive support and systems lead to better performance. Additionally, other researchers should conduct detailed, comparative studies across different university types and cultures to refine the framework and provide context-specific recommendations.

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FACTORS INFLUENCING THE DECISION TO USE THE SERVICES OF SUAN SUNANDHA PALACE HOTEL, SUAN SUNANDHA RAJABHAT UNIVERSITY

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ABSTRACT

This qualitative study explores the factors that influence customers' decisions to use the service of Suan Sunandha Palace Hotel, a university-owned hotel located on the campus of Suan Sunandha Rajabhat University in Dusit, Bangkok. The hotel provides accommodation, meeting rooms, banqueting services, and Thai cuisine, and also serves as a practical training and business incubation unit for the university. Guided by the SERVQUAL framework—tangibles, reliability, responsiveness, assurance, and empathy (Parasuraman et al., 1988)—this research examines how perceived service quality shapes guests' decision-making and continued use of the hotel's services. Data were collected through in-depth, semi-structured interviews with 25 participants, comprising 18 hotel guests (external and internal clients) and 7 key informants (front office, housekeeping, food and beverage, and sales staff). Thematic analysis was used to identify patterns across narratives. Findings show that all five SERVQUAL dimensions significantly influence the decision to use the hotel, but they interact with three additional decision factors: price-value perception, location and accessibility, and the unique identity of the university heritage setting. Tangibles such as cleanliness, heritage ambience, and meeting facilities function as “qualifying factors” that must reach a minimum acceptable level. Reliability and responsiveness (e.g., handling bookings, problem-solving, and event support) are “performance factors” that strongly drive satisfaction and repeat use. Assurance and empathy—especially staff courtesy, safety, and flexibility towards student and government clients—act as “relationship factors” fostering trust, word-of-mouth, and long-term loyalty. The study contributes to the hotel service quality literature by applying SERVQUAL in a university hotel context and by linking service quality perceptions directly to hotel selection decisions. Managerial implications emphasize targeted staff training, clearer service standards, and differentiation based on the hotel's university heritage and academic environment. Future research directions include mixed-methods designs, comparative studies with other university or training hotels, and the integration of online review analytics with qualitative insights.

Keywords: Service Quality, Decision-Making, University Hotel

INTRODUCTION

Service quality has long been recognized as a core determinant of customer satisfaction, repeat patronage, and positive word-of-mouth in the hotel industry. As competition intensifies and guests increasingly compare options via online reviews and digital platforms, hotels must understand not only whether their services are satisfactory but also how service quality shapes actual decision-making when customers choose among competing properties. Research on hotel selection factors indicates that guests consider a combination of attributes including price, location, cleanliness, staff service, security, facilities, and reputation. In Thailand, service quality has been shown to be a critical success factor for hotels, affecting both guest satisfaction and destination competitiveness. Studies of Thai hotels repeatedly highlight the importance of staff behavior, responsiveness, and cleanliness, as well as the need for ongoing staff training to raise service standards. Thai scholars also tend to rely heavily on the SERVQUAL model, which conceptualizes service quality along five dimensions: tangibles, reliability, responsiveness, assurance, and empathy. Suan Sunandha Palace Hotel (often branded as Suan Sunandha Palace Hotel) is a unique case within this context. Situated inside Suan Sunandha Rajabhat University in Dusit, Bangkok, the hotel offers standard and deluxe rooms, function rooms, catering services, and a restaurant serving Thai cuisine, including dishes linked to the royal heritage of the former palace grounds. Beyond commercial operations, it also supports the university's mission by acting as a training facility and business incubation unit that connects academic knowledge with real-world enterprise. Despite this distinctive positioning, there is limited academic research that focuses specifically on university-owned hotels in Thailand and on how service quality dimensions influence guests' decisions to use such properties. Existing studies on hotel service quality and hotel selection are mostly based on private or chain hotels, resort hotels, or luxury properties, and often rely on quantitative surveys.

This study addresses this gap by qualitatively exploring the factors that influence customers' decision to choose Suan Sunandha Palace Hotel. Using SERVQUAL as a guiding framework, the research seeks to understand how guests perceive each dimension of service quality and how these perceptions shape their decision to stay at, or hold events in, this university hotel. The qualitative approach allows for rich narratives that capture subtleties related to the hotel's university context, heritage environment, and mixed client segments (students, academic staff, government officers, and general public).

OBJECTIVE

1. To explore how service quality dimensions influence customers' decisions to use Suan Sunandha Palace Hotel, Suan Sunandha Rajabhat University.
2. To identify how these perceived service quality dimensions, together with contextual factors such as price-value, location, and university heritage, influence customers' decisions to select and repeatedly use Suan Sunandha Palace Hotel.
- 3.

Literature Review

Service Quality in Hospitality

Service quality in hospitality is commonly defined as the gap between customers' expectations and their perceptions of actual service performance (Parasuraman et al., 1988; Zeithaml et al., 1990). In the hotel industry, service quality is a complex, multi-dimensional construct encompassing both tangible and intangible elements, such as physical facilities, staff behavior, reliability of services, and the emotional experience of guests. The SERVQUAL model is one of the most influential frameworks used to measure service quality. It proposes five core dimensions:

1. Tangibles: Physical facilities, equipment, and appearance of personnel
2. Reliability: Ability to perform the promised service dependably and accurately
3. Responsiveness: Willingness to help customers and provide prompt service
4. Assurance: Employees' knowledge and courtesy and their ability to inspire trust and confidence
5. Empathy: Caring, individualized attention provided to customers (Parasuraman et al., 1988)

While SERVQUAL has been criticized and modified in various contexts, it remains a widely used starting point for examining hotel service quality worldwide, including in Thailand (Sangpikul, 2022).

Hotel Service Quality in the Thai Context

A growing body of Thai research examines service quality in hotels of different types and locations. For example, Tuntirattanasoontorn (2008) found that the main service quality problems in Thai hotels were related to employees' lack of customer relations skills and insufficient knowledge of hotel policies, emphasizing the need for systematic staff training and performance monitoring. Sangpikul (2022) compared hotel service quality measurement models in Thai and international contexts and concluded that Thai scholars primarily rely on the five original SERVQUAL dimensions, while international studies often extend or modify these dimensions to capture factors such as food and beverage quality, environmental quality, and interaction quality. Studies of regional hotels in Nong Khai and Koh Samui also highlight dimensions like cleanliness, staff friendliness, and reliability as key to enhancing guest satisfaction and repeat visitation. More recent work uses online guest reviews to identify service quality attributes that matter most to hotel guests, including room comfort, internet connectivity, and staff professionalism, showing that customer expectations are evolving in response to digital technologies and new travel patterns.

Factors Influencing Hotel Selection

International research on hotel selection factors indicates that guests' decisions are shaped by multiple criteria, including price, location, cleanliness, staff service, security, facilities, and brand reputation (Chu & Choi, 2000; Soulidou & Vrana, 2019). Many studies have identified cleanliness, room comfort, price-value, and staff behavior as among the most important determinants of hotel choice and satisfaction. Chu and Choi (2000), in their importance-performance analysis of hotel selection factors in Hong Kong, grouped 26 hotel attributes into six factors: service quality, business facilities, value, room and front desk, food and recreation, and security. They found that service quality and value were particularly important and that business and leisure travelers shared similar perceptions regarding the importance and performance of these factors. Other research has shown that for some markets, security and safety can outweigh other factors, especially in contexts affected by natural disasters or political instability. For price-sensitive segments, perceived fairness of price relative to service quality (value for money) plays a decisive role in hotel choice (Lockyer, 2005, as cited in Soulidou & Vrana, 2019).

Service Quality and Decision to Use University Hotels

Although there is extensive research on service quality and hotel selection, studies focusing on university-owned hotels are scarce. University hotels often operate with multiple objectives: providing accommodation and conferencing facilities, supporting academic events, and serving as practical training sites for students in hospitality and tourism programs. They may also embody cultural or historical heritage, as in the case of Suan Sunandha Palace Hotel, which is linked to the former royal palace grounds and offers traditional Thai cuisine and heritage ambience. Given these characteristics, guests' decisions to use a university hotel may be influenced not only by standard service quality dimensions but also by:

1. Perceived support for education and the university's mission
2. Unique heritage or cultural experience
3. Fit with academic, government, or student events
4. Price policies aligned with public or educational institutions

This study therefore applies SERVQUAL within a university hotel context and explicitly links perceived service quality to guests' decision-making processes.

METHODOLOGY

Research Design

This study employed a qualitative, interpretivist research design using in-depth, semi-structured interviews. The aim was to understand how guests experience and interpret service quality at Suan Sunandha Palace Hotel and how these interpretations inform their decisions to use the hotel. Qualitative methods are particularly appropriate for exploring complex, context-dependent phenomena such as service encounters and decision-making processes that may not be fully captured through structured questionnaires.

Population and Sampling

Purposive sampling was used to recruit participants who had direct experience with the hotel's services. Two main groups were targeted:

1. Hotel guests (n = 18)
 - External guests (corporate clients, government officers, general public)
 - Internal guests (university staff and students using the hotel for events or accommodation)
2. Hotel staff and key informants (n = 7)
 - Front office manager and receptionists
 - Housekeeping supervisor
 - Food and beverage (F&B) manager
 - Sales and events coordinator

Inclusion criteria for guests were: (1) at least one overnight stay or event participation at the hotel within the past 12 months, and (2) ability to communicate experiences in Thai or English. Key informants were selected based on their role in service delivery and direct interaction with guests.

Data Collection

Semi-structured interview guides were developed based on the SERVQUAL dimensions and on prior studies of hotel selection factors. Guest interviews explored:

1. Reasons for choosing Suan Sunandha Palace Hotel
2. Perceptions of each service quality dimension (tangibles, reliability, responsiveness, assurance, empathy)

3. Experiences with price, booking, location, and facilities
4. Comparisons with other hotels previously used
5. Overall satisfaction and intention to return or recommend

Staff interviews focused on:

1. Reasons for choosing Suan Sunandha Palace Hotel
2. Perceptions of each service quality dimension (tangibles, reliability, responsiveness, assurance, empathy)
3. Experiences with price, booking, location, and facilities
4. Comparisons with other hotels previously used
5. Overall satisfaction and intention to return or recommend

Each interview lasted approximately 45–60 minutes, was audio-recorded with participants' consent, and transcribed verbatim. Pseudonyms were used to protect participants' identities.

Data Analysis

Data were analyzed using thematic analysis, following the six-phase approach: familiarization, coding, generating initial themes, reviewing themes, defining and naming themes, and producing the report.

1. Initial coding combined deductive codes (based on SERVQUAL dimensions and decision factors from the literature) with inductive codes emerging from the data (e.g., “heritage atmosphere,” “supporting the university,” “student friendliness”).

2. Themes were then organized under three overarching categories:

- Service quality dimensions (tangibles, reliability, responsiveness, assurance, empathy)
- Decision-related factors (price–value, location, heritage/university identity)
- Outcome factors (satisfaction, repeat patronage, recommendation)

3. Cross-case comparisons were conducted between external and internal guests to identify similarities and differences in how service quality influenced hotel choice.

Trustworthiness was enhanced through data triangulation (guests and staff), peer debriefing with another hospitality researcher, and maintaining an audit trail of coding decisions and theme development.

RESULTS

Overview of Emerging Themes

The analysis revealed that the decision to use Suan Sunandha Palace Hotel is shaped by an interplay between the five SERVQUAL dimensions and three additional decision factors: price–value, location, and the hotel's university heritage identity. Figure 1 (conceptual, described in text) summarizes these relationships:

- Core perceived service quality (SERVQUAL) □ influences
- Decision factors (price–value, location, heritage identity) □ leading to
- Outcomes (choice, satisfaction, word-of-mouth, repeat use)

Below, the main findings are organized by SERVQUAL dimension, followed by cross-cutting decision factors.

Tangibles: Cleanliness, Heritage Ambience, and Functional Facilities

Guests consistently highlighted the hotel's physical environment—rooms, public spaces, and surrounding campus—as a key qualifying factor for choosing and continuing to use the hotel. Cleanliness of rooms, linens, and bathrooms emerged as a non-negotiable baseline expectation, echoing findings from international hotel selection studies. Many participants appreciated the “green” and “peaceful” ambience of the campus: tree-lined walkways, quiet surroundings, and proximity to university buildings and facilities. For event organizers, the availability of meeting rooms, audio-visual equipment, and catering in the same complex was especially attractive. Some guests also mentioned the hotel's historical

and cultural character, linked to the former palace grounds and traditional Thai dishes served at the restaurant. However, a few guests suggested that parts of the physical infrastructure— such as interior décor, air-conditioning systems, or signage— could be modernized to compete more effectively with newer city hotels. Staff members acknowledged that budget constraints and public procurement regulations sometimes slowed renovation and upgrading.

In summary, tangibles played a dual role: they signaled professionalism and care (cleanliness, maintenance) and also conveyed a distinctive identity (heritage, campus environment) that differentiated the hotel from nearby competitors.

Reliability: Keeping Promises and Managing Events Smoothly

Reliability— “doing what you say you will do”— was central to both individual and group decision-making. Guests appreciated when reservations were correctly recorded, room types were as promised, and check-in/out procedures were efficient. Event organizers (e.g., government agencies, university faculties) emphasized the importance of the hotel’s ability to follow agreed schedules for meeting room setup, coffee breaks, and lunches. Positive narratives described situations where:

- Bookings for large groups were handled without errors
- Special requests (e.g., halal food, vegetarian options, rooming lists) were prepared as agreed
- Invoices and financial documents complied with government or university accounting requirements

Conversely, negative experiences, though fewer, related to occasional miscommunication about room allocations or late adjustments to meeting room layouts. These issues did not usually lead guests to avoid the hotel altogether but did reduce their confidence and willingness to recommend it for high-stakes events.

Overall, reliability emerged as a key performance factor that either reinforced or undermined the attractiveness created by favorable tangibles and price.

Responsiveness: Speed, Flexibility, and Problem-Solving

Responsiveness involved the willingness and ability of staff to assist guests promptly, adjust to last-minute changes, and solve problems effectively. For many interviewees, especially event organizers, responsiveness was a major reason for choosing Suan Sunandha Palace Hotel instead of external hotels. Illustrative examples (paraphrased from participants) included:

- Staff quickly reorganizing seating to accommodate additional participants
- Providing extra microphones or technical support when equipment malfunctioned
- Arranging early breakfast or packed meals for participants with tight schedules

Guests perceived the hotel as relatively flexible compared with some private hotels that strictly enforce standardized procedures. This flexibility was seen as particularly important for academic and government events, where schedules often change due to meetings or ceremonies. Nonetheless, there were reports of variability between shifts and departments: some guests described highly responsive staff, while others encountered slower responses during peak periods or when inexperienced student trainees were on duty. This variability suggests the need for clearer service protocols and coaching to ensure consistent responsiveness.

Assurance: Safety, Professionalism, and Institutional Credibility

Assurance relates to guests’ feelings of safety and confidence in the competence and integrity of service providers. In the case of Suan Sunandha Palace Hotel, assurance was influenced by both micro-level interactions (staff professionalism) and macro-level perceptions (university reputation).

Guests expressed trust in the hotel due to:

- Its location within a public university campus, perceived as secure and well-regulated
- Its association with higher education and government bodies, which reinforced beliefs about compliance with standards and ethics
- Staff courtesy, appropriate uniforms, and polite communication style

For female guests and parents of student participants, campus security and the presence of guards were particularly important. These perceptions align with research indicating that security and safety are critical factors in hotel selection. Assurance further extended to financial transactions: government and university clients appreciated the hotel's familiarity with official procurement procedures, which reduced the perceived risk of administrative problems.

Empathy: Individual Attention and Understanding of Academic/Government Needs

Empathy—caring, individualized attention—emerged strongly in narratives related to repeat stays and long-term relationships. Guests valued staff who remembered their preferences (e.g., room locations, dietary restrictions) and who showed understanding of the specific needs of academic conferences, training workshops, and student camps. Internal clients, such as faculty members and student organizations, often described the hotel as “our hotel” and highlighted mutually supportive relationships, where the hotel offered flexible packages or adjusted services to support educational events or limited student budgets. This sense of partnership blurred the line between commercial and educational roles and fostered strong loyalty, even when tangibles were not as luxurious as external hotels. However, empathy was again described as uneven; some staff (often more experienced or permanent employees) were praised for their attentiveness, while high staff turnover and the use of trainees occasionally resulted in less personalized service.

Price-Value Perception: “Reasonable for What We Get”

Price was a consistently mentioned factor in decisions to use Suan Sunandha Palace Hotel. Guests generally perceived room rates and event packages as “reasonable” or “good value,” especially given the location in central Bangkok and the inclusion of breakfast or basic meeting facilities.

For government and university clients, special rates or packages aligned with public sector budgets were particularly attractive. Compared to private hotels of similar location, Suan Sunandha Palace Hotel was sometimes seen as less luxurious but more budget-friendly. In line with prior studies, guests emphasized value for money rather than low price alone; they were willing to pay slightly higher rates when they perceived higher reliability, responsiveness, and assurance.

Location and Accessibility

Location was another key selection factor. The hotel's position inside Suan Sunandha Rajabhat University provided convenient access for academic events, training programs, and meetings with university stakeholders. For guests attending events at nearby government ministries and public agencies in the Dusit area, the hotel offered both proximity and a quieter environment than some commercial districts. However, some participants noted that access by public transport could be improved, particularly directions from BTS/MRT stations and signage from main roads. This suggests that while the macro-location is favorable, micro-accessibility (wayfinding, shuttle connections) could be enhanced.

Heritage and University Identity

A distinctive finding of this study is the importance of the hotel's heritage and university identity in guests' decisions. For some participants, staying at the hotel was not just a practical choice but also an experience of being part of the university community and its historical setting.

Guests appreciated:

- The atmosphere of an educational campus with gardens and historical buildings
- Traditional Thai dishes associated with the palace heritage served at the hotel restaurant
- The opportunity to “support the university” through using its hotel for events or accommodation

This emotional and symbolic connection differentiated the hotel from generic city hotels and contributed to repeat use and positive word-of-mouth within academic networks.

CONCLUSION AND FUTURE WORK

Conclusion

This qualitative study examined factors influencing customers' decisions to use Suan Sunandha Palace Hotel by applying the SERVQUAL framework and exploring guests' and staff's narratives. The findings highlight several key conclusions.

First, the five SERVQUAL dimensions—tangibles, reliability, responsiveness, assurance, and empathy—are all highly relevant in a university hotel context. Tangibles such as cleanliness, comfortable rooms, and functional meeting facilities serve as essential qualifying conditions. When tangibles fail, guests are unlikely to choose or return to the hotel regardless of price or location, which is consistent with prior studies emphasizing cleanliness and physical environment in hotel selection.

Second, reliability and responsiveness operate as crucial performance drivers that directly shape guests' satisfaction and decision to rebook the hotel, particularly for group events and government or academic functions. Accurate bookings, timely room setup, and flexible problem-solving are central to guests' perceptions of service quality. When the hotel consistently “keeps its promises” and responds quickly to changes, event organizers feel confident recommending the hotel to colleagues and using it as a regular venue.

Third, assurance and empathy are powerful relationship factors in this setting. Assurance arises not only from staff professionalism but also from the hotel's affiliation with a public university, which signals safety, regulatory compliance, and ethical conduct. Empathy is expressed through individualized attention, understanding of academic and government constraints, and willingness to adapt packages or procedures. These relational aspects build trust and a sense of partnership that can offset limitations in physical luxury or technological sophistication.

Fourth, decision-making is shaped by a combination of service quality and contextual factors—particularly price-value perception, location, and the hotel's heritage and university identity. Guests view the hotel as offering good value for money relative to its central location and the inclusion of breakfast and basic facilities. For internal clients and many external guests, the university context and heritage environment add symbolic value: using the hotel is perceived as supporting education and experiencing a distinctive Thai cultural setting.

Overall, the study demonstrates that university hotels like Suan Sunandha Palace Hotel compete not only on standard service quality dimensions but also on their ability to integrate educational mission, heritage identity, and value-based pricing into a coherent value proposition.

Managerial Implications

The findings suggest several practical implications for hotel management and for the university:

1. Strengthen Service Standards and Training

- Develop clear service standards for each SERVQUAL dimension and integrate them into staff training, with a special focus on reliability (accuracy of bookings, billing) and responsiveness (handling last-minute changes).
- Provide targeted coaching for student trainees to reduce variability in service quality and ensure that empathy and professionalism are consistently demonstrated.

2. Leverage Heritage and University Identity

- Explicitly incorporate the hotel's heritage and educational roles into branding and communication materials, highlighting traditional cuisine, campus greenery, and the opportunity to support the university.
- Design themed packages (e.g., "heritage learning retreats," "academic conference packages") that combine accommodation, meeting rooms, and cultural experiences.

3. Enhance Tangibles and Micro-Accessibility

- Prioritize periodic upgrades of guest rooms, lobbies, and signage to modernize the physical environment while preserving historical character.
- Improve wayfinding from public transport nodes and main roads through clearer signage, maps, or digital navigation aids.

4. Refine Pricing and Value Communication

- Maintain competitive, transparent pricing for key segments (students, academic staff, government agencies) and clearly communicate what is included (e.g., breakfast, basic AV equipment).
- Emphasize value-for-money in marketing messages, linking price to reliability, safety, and campus environment rather than low price alone.

This study examines the impact of digital marketing strategies adopted in Thailand to make marketing more effective in the tourism and hotel industry. Kerdpitak, C. (2022).

Future Research

This study opens several avenues for future research:

1. **Mixed- Methods and Comparative Studies** Future research could combine qualitative interviews with quantitative surveys to test the relationships among service quality dimensions, decision factors, and behavioral intentions (e.g., intention to rebook, recommend). Comparative studies between Suan Sunandha Palace Hotel and other university hotels or training hotels in Thailand and abroad would help identify which findings are context-specific and which are more generalizable.

2. **Integration of Online Reviews and Social Media Data** Building on emerging work that uses online reviews and sentiment analysis to evaluate hotel service quality, future studies could examine how digital feedback aligns with or diverges from in-depth interview findings. Such research could help the hotel prioritize improvements that are most visible and influential in online reputation.

3. Longitudinal and Stakeholder-Focused Research Longitudinal studies could explore how service quality perceptions and hotel selection factors evolve over time, particularly as the university and hotel implement upgrades or new programs. Additional research might also focus on specific stakeholder groups (e.g., international students, conference organizers, local community) to design targeted strategies that address their unique expectations and decision criteria.

By deepening understanding of how service quality dimensions interact with contextual factors in a university hotel, future work can assist Suan Sunandha Palace Hotel and similar properties in developing more strategic service improvement and positioning initiatives.

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THE INFLUENCE OF SPORT EVENT QUALITY ON SPORT TOURIST LOYALTY: A CASE STUDY IN BURIRAM PROVINCE, THAILAND

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ABSTRACT

Sport tourist loyalty is a critical determinant for the sustained success of the sport tourism sector and its related value chain within Buriram Province, Thailand, a region strategically branded as a "Sport City." This loyalty is essential for driving regional economic development through stable revenue streams. To effectively foster this crucial loyalty, this study focused on investigating the influence of sport event quality—a factor widely recognized as a key antecedent in the tourism experience. The primary objective was to empirically examine the structural relationship between sport event quality and sport tourist loyalty in the Buriram context.

A mixed-methods research design was employed. The quantitative phase involved a sample of 320 sport tourist participants, meticulously selected using Multi-Stage Sampling from attendees of major sport events in Buriram Province. Data were collected via questionnaires focusing on established dimensions of service quality in sport events, such as Game Quality, Interaction Quality, Physical Environment Quality, and Outcome Quality. Statistical analyses included descriptive statistics (percentage, mean, standard deviation), relational analysis (Pearson correlation), and confirmatory structural analysis using Structural Equation Modeling (SEM) to test the hypothesized relationships. Complementing this, the qualitative phase involved in-depth interviews with 15 key stakeholders, including sport tourism managers and industry experts in Thailand, to provide contextual depth and validate the quantitative findings.

The findings revealed that both the perception of sport event quality and the level of sport tourist loyalty were rated at a consistently high level. Crucially, the SEM analysis confirmed that sport event quality exerted a positive and statistically significant influence on sport tourist loyalty in Buriram Province ($p < 0.05$). Furthermore, specific quality dimensions, particularly Physical Environment Quality (referring to venue facilities like the Chang International Circuit and Chang Arena) and Interaction Quality (staff service), were identified as key drivers. The research findings provide immediate, actionable guidelines for the Buriram Provincial Administration and event organizers to refine their service delivery and define a sustainable, loyalty-based sport tourism business model for long-term regional development.

Keywords: Sport Tourist, Sport Tourist Loyalty, Sport Event Quality, Buriram, Structural Equation Modeling

INTRODUCTION

The tourism industry plays a crucial role in driving Thailand's economic growth, particularly in the post- COVID- 19 era as the country has reopened and implemented strategies to stimulate tourism recovery. According to the Office of the National Economic and Social Development Council (NESDC), during the first half of 2024, international tourism receipts reached 703 billion baht, while total tourism revenue— including both international and domestic tourists— amounted to 1. 181 trillion baht (NESDC, 2024) . In 2024, Thailand welcomed more than 35. 5 million international tourists, generating approximately 1. 67 trillion baht in revenue. Despite the rebound, challenges remain due to changing travel behaviors, such as shorter lengths of stay and varied spending patterns compared to the pre-pandemic period (Bank of Thailand, 2024). The sports tourism industry is diverse, encompassing a spectrum of activities ranging from major international sporting events and competitions to niche experiences such as golf tourism, adventure sports destinations, and sports-themed vacations. Kulwanich, A, Pongpeng, T. (2024).

In recent years, special interest tourism has gained increasing prominence worldwide (Weiler & Hall, 1992). Among its various forms, sport tourism has emerged as one of the fastest- growing sectors. Tourists increasingly travel to participate in or spectate sporting activities and events— ranging from marathons and cycling races to combat sports such as Muay Thai. These events not only enhance tourist experiences but also strengthen destination branding and support local economic development (UNWTO, 2022). Research has shown that sport event quality is a key determinant influencing tourists' behavioral outcomes, particularly tourist loyalty, which contributes to sustainable destination competitiveness (Hodeck, 2016; Kaplanidou et al., 2012). Gibson (1998) defined sport tourism as leisure- based travel involving participation in physical activities, spectating sporting events, or visiting attractions associated with physical activities. Sport tourism is generally categorized into event sport tourism, active sport tourism, and nostalgia sport tourism. Previous studies indicate that both spectators and participants perceive value from event experiences, which significantly impacts their loyalty to destinations offering sport- related activities (Jin, Lee & Lee, 2013). Despite extensive research on mega- events such as the Olympic Games and FIFA World Cup, small- scale and recurring sporting events— such as local marathons— have received comparatively less attention. Yet several studies suggest that these events can be highly beneficial for small and medium- sized cities, as they attract a steady flow of participatory tourists and support regional tourism development (Jeong et al., 2019; Zhang et al., 2018).

In Thailand, sport tourism has received growing attention from both policymakers and tourism stakeholders. The Ministry of Tourism and Sports has positioned sport events as a key strategy to diversify tourism products and stimulate regional economies. One of the most successful examples of sport tourism development in Thailand is Buriram Province, which has transformed into a prominent sports destination in Southeast Asia. With world-class facilities such as Chang International Circuit and Chang Arena, Buriram has hosted major events including MotoGP, international football tournaments, and large-scale running events. These events attract hundreds of thousands of domestic and international visitors annually, contributing significantly to the province's economic growth and global visibility. The growing popularity of sport events in Buriram highlights the importance of understanding factors that influence sport tourists' behavioral responses— particularly sport tourist loyalty, which determines repeat visitation, positive word- of- mouth, and long- term destination competitiveness. Previous research suggests that sport event quality— comprising elements such as event organization, facilities, staff performance, safety, atmosphere, and value— plays a critical role in shaping tourist satisfaction and

loyalty (Jin, Lee & Lee, 2013; Allameh et al., 2015). High-quality sport events can enhance tourist experiences and increase the likelihood that tourists will revisit the destination or recommend it to others.

However, despite the rapid development of sport tourism in Thailand, research focusing on the relationship between sport event quality and tourist loyalty remains limited, particularly in the context of small- and medium-scale recurring events. Most existing studies focus on mega-events or general tourism satisfaction, leaving a gap in understanding how specific dimensions of event quality impact loyalty among active and passive sport tourists in regional destinations like Buriram. Therefore, this study aims to investigate the influence of sport event quality on sport tourist loyalty by focusing on sport events held in Buriram Province. The objectives of the study are: To examine sport tourists' perceptions of sport event quality in Buriram Province. To analyze the relationship between sport event quality and sport tourist loyalty. And To identify which dimensions of event quality most strongly influence loyalty among sport tourists. The findings of this study will provide valuable insights for event organizers, tourism authorities, and local policymakers to improve event management, enhance tourist experiences, and strengthen Buriram's position as a leading sport tourism destination in Thailand and the ASEAN region.

OBJECTIVE

1. To examine sport tourists' perceptions of sport event quality in Buriram Province.
2. To analyze the relationship between sport event quality and sport tourist loyalty.
3. To identify which dimensions of event quality most strongly influence loyalty among sport tourists.

METHODOLOGY

Population, Sampling, and Data Analysis

The target population of this study consisted of active sport tourists residing in Bangkok. As the exact population size could not be determined, the sample size was calculated using Cochran's formula (1953) at a 95% confidence level. Based on this calculation, a total of 320 respondents were required. A multi-stage sampling technique was employed to obtain a representative sample from the target population (Cochran, 1953).

The primary research instrument used in this study was a structured questionnaire, developed in accordance with the operational definitions of the variables under investigation. To ensure the accuracy and reliability of the instrument, it underwent both validity and reliability assessments. A preliminary pre-test was conducted with 40 respondents, and the results indicated that the Cronbach's alpha coefficients for each construct ranged from 0.70 to 1.00, demonstrating acceptable to excellent internal consistency (Cronbach, 1951). Additionally, the questionnaire was reviewed and validated for content adequacy by the academic advisor, confirming its suitability for the main data collection.

To address the research objectives, both descriptive and inferential statistical analyses were conducted. Descriptive statistics, including frequency, percentage, mean, and standard deviation, were used to summarize the demographic characteristics of respondents and describe the key study variables (Field, 2018).

For inferential analysis, Pearson's Product-Moment Correlation Coefficient was used to examine the relationships between pairs of independent variables, while multiple regression analysis was

applied to assess the influence of independent variables on the dependent variable, in line with the study's conceptual framework (Pallant, 2020).

RESULTS

The study sample consisted of active sport tourists who participated in sport events in Buriram Province, Thailand, totaling 320 respondents. The majority of respondents were male (58.7%), aged 31–40 years (35.0%), and married (52.25%). Regarding education, most held a bachelor's degree (47.5%), and the largest occupational group was private company employees (35.5%). The majority reported a monthly income of 30,001–45,000 baht (34.25%) and were domiciled in Buriram Province and its surrounding areas (72.0%).

Analysis of sport event quality dimensions perceived by sport tourists in Buriram revealed that the overall quality was rated at a high level. Among the dimensions, game quality received the highest rating, followed by interaction quality, physical environment quality, and outcome quality, all of which were perceived positively. This indicates that tourists generally considered the organization, facilities, and overall experience of sport events in Buriram to be of high quality, contributing to a favorable tourist experience. From Table 1: Correlation Coefficient Matrix

Table 1: Correlation Coefficient Matrix

Variable	Tourist Loyalty	Game Quality	Outcome Quality	Physical Environment Quality	Interaction Quality
Tourist Loyalty	1				
Game Quality	.721**	1			
Outcome Quality	.564**	.532**	1		
Physical Environment Quality	.691**	.516**	.625**	1	
Interaction Quality	.532**	.537**	.712**	.731**	1

* Significant level at $p < .05$ ** Significant level at $p < .01$

Table 1 shows the Pearson correlation coefficients between Tourist Loyalty and the four dimensions of Sport Event Quality: Game Quality, Outcome Quality, Physical Environment Quality, and Interaction Quality.

Game Quality is strongly positively correlated with Tourist Loyalty ($r = .721$, $p < .01$), indicating that well-organized and fair competitions strongly influence participants' intention to revisit or recommend Buriram as a sport tourism destination.

Outcome Quality shows a moderate positive correlation with Tourist Loyalty ($r = .564$, $p < .01$), suggesting that participants' satisfaction with results, achievements, or awards contributes to loyalty.

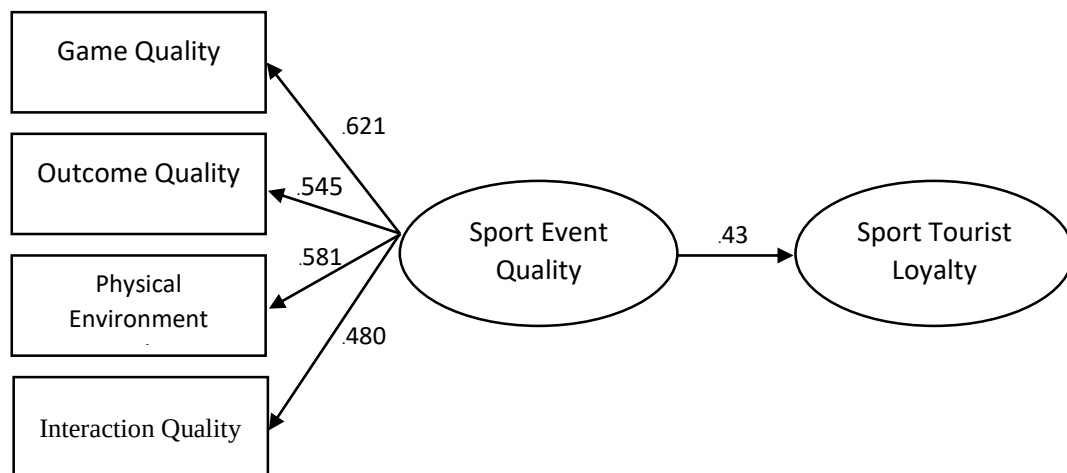
Physical Environment Quality is also strongly correlated with Tourist Loyalty ($r = .691, p < .01$), highlighting the importance of well-maintained venues, safety measures, and accessibility in shaping tourists' experiences.

Interaction Quality has a moderate positive correlation with Tourist Loyalty ($r = .532, p < .01$), reflecting the significance of staff support, volunteer engagement, and participant interactions in enhancing overall satisfaction.

The correlations among the four dimensions of event quality indicate strong interrelationships, particularly between Interaction Quality and Physical Environment Quality ($r = .731, p < .01$) and Outcome Quality and Interaction Quality ($r = .712, p < .01$). This suggests that a high-quality physical environment and effective participant interactions are closely associated with positive experiences in Buriram's sport events.

Overall, the results confirm that all dimensions of sport event quality contribute positively to sport tourist loyalty, emphasizing the need for event organizers to maintain high standards across all aspects of event delivery. The results of the predictive analysis, which test the structural relationships within the model, are presented in Figure 1

Figure 1



CONCLUSION AND FUTURE WORK

The study successfully confirmed that Sport Event Quality significantly drives Sport Tourist Loyalty in Buriram Province, Thailand. The overall quality perception of sport events was rated as high, validating Buriram's status as a premier sports destination. The priority assessment revealed that resource allocation should focus primarily on Physical Environment Quality and Game Quality, as these factors possess the strongest predictive power for the overall quality construct. This highlights the strategic importance of maintaining world-class infrastructure and ensuring high-caliber competitive events to sustain tourist loyalty. Ultimately, reinforcing these quality dimensions directly translates into increased tourist satisfaction and a greater likelihood of repeat visitation and positive word-of-mouth.

The findings provide clear strategic direction for Buriram's Provincial Administration and event organizers:

Infrastructure Prioritization: Allocate continuous resources for the maintenance and modernization of major sports facilities (Physical Environment Quality).

Competitive Quality: Focus on securing high-level athletes, teams, and organizers to ensure the spectacle and quality of the game itself (Game Quality) remain paramount.

Building on these findings, future research should:

Explore Mediation: Incorporate mediating variables, such as Perceived Value and Destination Image, into the SEM framework to comprehensively understand the process by which event quality translates into loyalty.

Contextual Comparison: Conduct cross-cultural or comparative studies with other designated Sport Cities in Southeast Asia to identify regional variations in the factor loadings and structural relationships.

Segmentation: Investigate differences in loyalty drivers between distinct sport tourist segments (e.g., participants vs. spectators, domestic vs. international tourists).

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STRATEGIC DEVELOPMENT OF RANONG'S IDENTITY AND COMMUNITY HEALTH PRODUCTS AS WELLNESS SOFT POWER FOR HIGH-POTENTIAL MARKETS

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ABSTRACT

Ranong Province possesses exceptional mineral water resources that include natural hot springs rich in therapeutic minerals such as calcium, sodium sulfate, magnesium, and silica. These natural assets provide significant health benefits, making the province well-positioned for wellness tourism development (Erfurt-Cooper & Cooper, 2009; Smith & Puczkó, 2014). However, despite its comparative advantages, Ranong has not fully utilized its natural and cultural capital for sustainable economic growth. Poverty indicators remain high, and the province continues to rely heavily on traditional industries (NESDC, 2022).

This research investigates strategic pathways to develop Ranong's identity as a wellness tourism destination, innovate a community-based organic herbal mineral spray, and formulate soft-power-driven branding strategies aligned with national policies (Nye, 2004; Ministry of Culture, 2023). A qualitative approach—employing interviews, focus groups, and document analysis—was used to capture perspectives from stakeholders including community entrepreneurs, hot spring operators, and government agencies.

Findings reveal three essential components: (1) the need for systematic knowledge management of mineral spring identity; (2) high potential for health product innovation utilizing mineral water and indigenous herbs; and (3) strategic soft-power marketing that aligns with the government's OFOS and soft-power development framework (Global Wellness Institute, 2022; Kapferer, 2012). The results offer a sustainable development model leveraging local resources, community innovation, and cultural soft power to enhance regional and national competitiveness.

Keywords: Ranong, Mineral Water, Wellness Tourism, Soft Power, Community Innovation

INTRODUCTION

Ranong Province is distinguished by its abundant natural hot springs and premium-quality mineral water—unique for having no sulfur odor and being exceptionally rich in healing minerals such as calcium, sodium sulfate, magnesium, and silica. These mineral compositions have been widely documented for their therapeutic properties, contributing to improvements in musculoskeletal disorders, enhanced blood circulation, stress reduction, and better metabolic functions (Nasermoaddeli & Kagamimori, 2005; Bender et al., 2007). Compared with other mineral-water destinations globally, Ranong's water profile is notable not only for its purity but also for its chemical stability and naturally warm temperature, which make it suitable for a range of hydrotherapy and balneotherapy applications.

The presence of multiple hot spring systems—most prominently Raksawarin Hot Spring—provides a substantial foundation for wellness tourism rooted in natural resource advantages.

Beyond its mineral springs, Ranong possesses diverse ecological landscapes that further reinforce its potential as a wellness-based province. Its geography includes mountainous rainforest terrain, dense mangrove ecosystems, coastal beaches along the Andaman Sea, and biodiverse marine environments. Such ecological richness enables a wide range of wellness activities aligned with global wellness trends, including eco-therapy, forest bathing, hot spring therapy, coastal relaxation, and alternative healing practices. These natural features place Ranong among a small group of destinations in Southeast Asia with multidisciplinary wellness assets concentrated within a compact geographic area (Erfurt-Cooper & Cooper, 2009). When combined with the province's relatively low population density and tranquil environment, Ranong offers a unique sense of serenity, slow living, and restorative natural immersion—factors increasingly valued by international wellness travelers seeking relief from urban stress and digital overload.

Despite its high-value natural assets, Ranong faces persistent structural and economic limitations that have hindered the full utilization of its comparative advantages. According to the National Economic and Social Development Council (NESDC, 2022), the province ranks among Thailand's top ten poorest provinces, with per capita income significantly below national averages. The regional economy remains heavily dependent on traditional industries such as fisheries, rubber production, and small-scale agriculture—sectors that are vulnerable to climate fluctuations, global market volatility, and limited value-added capacity. These economic constraints reveal a pattern of underdevelopment in which the province's abundant natural capital has not yet been systematically transformed into diversified economic opportunities or high-value wellness industries. The disparity between resource potential and economic performance underscores the need for strategic intervention to unlock the province's latent strengths.

In recent years, Thailand has increasingly emphasized the concept of soft power as a national development strategy aimed at transforming cultural assets, natural resources, and local identities into globally competitive industries (Nye, 2004). Soft power not only enhances national image but also serves as an economic engine, enabling communities to participate in global markets through cultural appeal, creativity, and innovation. Thailand's Ministry of Culture (2023) outlines strategic guidelines that include elevating local products, storytelling, and cultural tourism within the broader creative economy framework. Within this context, Ranong holds significant potential. The province's distinctive mineral water identity, long-standing traditional healing knowledge, multicultural heritage, and pristine natural landscapes align closely with Thailand's soft power agenda.

The OFOS (One Family One Soft Power) initiative, launched as part of Thailand's soft-power policy directions, further reinforces the relevance of community-based production, cultural identity enhancement, and wellness-oriented product development for local economic transformation. OFOS encourages every household to develop high-value products rooted in local identity, creativity, and innovation—exactly the kind of environment that aligns with Ranong's natural resource strengths (Kotler et al., 2021). By integrating mineral-water-based wellness products with indigenous herbal knowledge and cultural narratives, Ranong's communities have the potential to create signature wellness goods capable of reaching both domestic and international markets.

Global wellness megatrends also amplify the timeliness of Ranong's development. The Global Wellness Institute (2022) identifies natural healing, thermal tourism, clean beauty, and traditional herbal-

based products as high-growth sectors in the global market. As consumers worldwide increasingly seek authentic, natural, and sustainable wellness experiences, destinations with high-quality mineral springs and herbal traditions are becoming more competitive. Countries such as Japan, Iceland, and South Korea have successfully leveraged their natural thermal resources as strategic soft-power tools, transforming local identity into global wellness brands. Ranong is well positioned to follow similar trajectories, particularly given its unique natural mineral characteristics, geographic accessibility, and potential for community-driven product innovation.

However, transforming Ranong into a globally recognized wellness and soft-power hub requires more than resource abundance. It necessitates a deliberate strategy combining identity construction, scientific validation, innovation capacity, and soft-power marketing. The province currently lacks unified branding, comprehensive knowledge management of mineral spring identity, and integrated product development pathways that connect local wisdom with global market demands. Without structured frameworks for identity enhancement and product innovation, the province's wellness assets risk remaining under-commercialized and fragmented. Addressing these gaps is critical for enabling communities to participate meaningfully in the creative economy and ensuring sustainable, inclusive growth.

Given these challenges and opportunities, the present study aims to provide a comprehensive model integrating wellness tourism development, mineral water innovation, indigenous herbal wisdom, and soft-power marketing strategies tailored specifically for Ranong Province. This research seeks to:

- (1) strengthen provincial identity through knowledge management and scientific-cultural integration;
- (2) promote community-based innovation through development of organic herbal mineral spray products;
- (3) advance soft-power-driven branding strategies aligned with Thailand's national policies and global wellness trends; and
- (4) contribute to long-term socio-economic development through sustainable, culturally grounded, and globally responsive wellness frameworks.

By addressing these areas, the study aspires to bridge the gap between Ranong's natural potential and its economic realities, positioning the province as a model for wellness-based soft power and community-centered creative economy development within Thailand and the broader ASEAN region.

Literature Review

Wellness Tourism

Wellness tourism has emerged as one of the fastest-growing sectors within global tourism, defined as travel undertaken with the primary purpose of promoting physical, mental, or spiritual well-being (Smith & Puczkó, 2014). The sector has expanded rapidly due to rising consumer awareness of preventive health, stress management, longevity, and holistic wellness. According to the Global Wellness Institute (2022), the wellness tourism market exceeded USD 700 billion in 2022 and is projected to grow substantially as post-pandemic travelers increasingly seek restorative and nature-based experiences.

A significant portion of wellness tourism focuses on natural thermal environments, mineral waters, and traditional healing practices. Hot springs, in particular, have long served as therapeutic and recreational destinations worldwide—spanning Japan's onsen culture, Korea's jjimjilbang traditions, and various European balneotherapy centers (Erfurt-Cooper & Cooper, 2009). These sites attract travelers who value natural healing, stress relief, detoxification, and rejuvenation. Research consistently shows that destinations with unique mineral compositions, scenic natural surroundings, and cultural authenticity gain competitive advantage in the wellness tourism market.

For Ranong Province, its natural hot springs—featuring distinctive mineral-water qualities—align closely with global wellness tourism trends. Smith and Puczkó (2014) emphasize that successful wellness destinations must integrate environmental assets, cultural contexts, and therapeutic functions, all of which are present in Ranong. Furthermore, the rise of eco-wellness and sustainable travel has strengthened demand for destinations with minimal environmental disruptions, making Ranong's rainforest and coastal ecosystems valuable assets for positioning the province within emerging wellness market narratives.

Mineral Water and Therapeutic Benefits

Mineral water has historically been central to therapeutic practices across cultures. Balneotherapy, defined as the medical use of mineral-rich water for treatment, has been clinically recognized for its benefits on musculoskeletal conditions, circulatory function, and overall physiological relaxation (Nasermoaddeli & Kagamimori, 2005). Numerous studies confirm that mineral baths help alleviate chronic lower back pain, osteoarthritis symptoms, and rheumatic discomfort due to the presence of minerals such as magnesium, sulfate, and calcium (Bender et al., 2007). These therapeutic mechanisms arise from both chemical and thermal effects, enhancing blood flow, reducing inflammation, and promoting metabolic balance.

Silica—a key mineral found in Ranong's hot springs—also provides notable dermatological advantages. Research indicates that silica-rich water contributes to improved skin elasticity, hydration, and anti-aging effects by supporting collagen synthesis and acting as a natural emollient (Bender et al., 2007). This makes silica-containing mineral water highly relevant to wellness product innovation, particularly within the global clean-beauty and natural skincare market.

Comparative hydrological studies show that Ranong's hot springs are unique for their absence of strong sulfur odors, which increases user comfort and broadens product applicability. As Erfurt-Cooper and Cooper (2009) suggest, destinations with high-quality mineral properties combined with appealing sensory attributes tend to achieve stronger positioning in international wellness markets. Ranong's thermal composition therefore offers a strategic advantage for both tourism and product development.

Soft Power in National Development

Soft power, as conceptualized by Nye (2004), refers to a country's ability to influence global actors through cultural appeal, identity, and shared values rather than coercive force. In the context of contemporary economic development, soft power functions as an essential component of national branding, global visibility, and international economic engagement. Thailand has increasingly adopted soft power as a key development tool, recognizing the potential of cultural identity, creative industries, and local resources to generate global influence and economic value.

According to the Ministry of Culture (2023), Thailand's soft-power strategy emphasizes five main cultural pillars—Food, Film, Fashion, Fighting, Festival—all of which serve as global carriers of Thai identity. Wellness, although not yet an official category, is gaining prominence as an emerging soft-

power dimension due to Thailand's cultural heritage in traditional healing, herbal medicine, and hospitality. The wellness economy aligns closely with Thailand's broader creative economy strategy, which positions cultural products and community skills as central to national development.

For Ranong, soft power offers an opportunity to transform its natural mineral identity into a globally appealing wellness brand. Mineral water, indigenous herbal knowledge, and multicultural heritage provide the foundation for creating a "healing identity" that can resonate internationally. Kapferer's (2012) work on brand identity frameworks reinforces that destinations must articulate clear, authentic narratives to develop strong brand equity. By integrating natural wellness assets with cultural storytelling, Ranong can strengthen its contribution to Thailand's soft-power landscape.

Community-Based Innovation

Community-based innovation refers to the process of using local knowledge, indigenous resources, and community collaboration to create new products, services, or solutions that address local needs while generating economic value (Nonaka & Takeuchi, 1995; Mulgan, 2019). The concept is particularly relevant in rural and semi-rural regions, where cultural knowledge, natural resources, and shared traditions can be transformed into marketable innovations through participatory mechanisms.

In Thailand, indigenous herbs such as pandan (*Pandanus amaryllifolius*) and yanang (*Tiliacora triandra*) play an important role in traditional wellness practices. Scientific research supports their therapeutic properties, including antioxidant activity, cooling effects, and potential anti-inflammatory benefits (Wongchai & Smitinand, 2018). When combined with mineral-rich water, these herbs offer opportunities for high-value product development such as herbal mineral sprays, balms, aromatherapy oils, and spa treatments. Such products reflect the global demand for clean, natural, and culturally authentic wellness innovations.

Community innovation leverages local knowledge and transforms it into marketable products (Nonaka & Takeuchi, 1995; Mulgan, 2019). In Thailand, local herbs such as pandan and yanang are central to wellness traditions and have recognized therapeutic properties (Wongchai & Smitinand, 2018). This will bring benefits that will lead to balance in life and well-being and increase competitiveness in community tourism to be accepted by both Thai and foreign tourists, as well as spatial development on the part of the community to promote quality of life and fair returns to the people in the community to be sustainable. Janmuangthai, W. Sitthiwarongchai, C, Rodjam, C, Kongpan, Y. (2024).

Sustainable Development Framework

The United Nations' SDGs emphasize sustainable consumption, poverty reduction, and innovation for well-being (United Nations, 2015). Using natural resources responsibly—while deriving economic benefits—is key to regional development.

Sustainable development is a crucial consideration for wellness destinations reliant on natural resources. The United Nations' Sustainable Development Goals (SDGs) emphasize the need for balancing economic growth with environmental protection, social equity, and long-term resource sustainability (United Nations, 2015). Hot spring and mineral-water destinations face risks of overuse, environmental degradation, and commercialization pressures if not managed responsibly.

Relevant SDGs include:

- SDG 3: Good Health and Well-Being — promoting wellness and preventive healthcare.

- SDG 8: Decent Work and Economic Growth — supporting community-based economies through value-added wellness products.
- SDG 12: Responsible Consumption and Production — ensuring sustainable extraction and use of mineral water.
- SDG 15: Life on Land — protecting natural forests, watersheds, and biodiversity that support Ranong's hot spring ecosystems.
- SDG 17: Partnerships for the Goals — encouraging collaborations among government, communities, and the private sector.

As wellness destinations grow globally, sustainability becomes a key competitive factor. Erfurt-Cooper and Cooper (2009) highlight that sustainable management of geothermal resources is essential for long-term viability. For Ranong, adopting SDG-aligned strategies ensures the protection of mineral springs, supports equitable community participation, and enhances the province's reputation as a responsible wellness destination.

OBJECTIVE

1. To develop knowledge management and identity enhancement models for Ranong's mineral springs.
2. To create an innovative organic herbal mineral spray product.
3. To develop soft-power-oriented branding and marketing strategies targeting high-potential markets.

METHODOLOGY

Research Design

This study employed qualitative research to explore identity, product innovation, and strategic marketing dimensions.

Participants

Stakeholders included hot spring operators, herbal practitioners, tourism officers, entrepreneurs, and visitors.

Data Collection

Semi-structured interviews

Focus group discussions

Field observations

Policy and document review

Data Analysis

Thematic analysis was applied to categorize themes under identity, innovation, and soft power (Braun & Clarke, 2006)

RESULTS

1. Identity Development Stakeholders highlighted the need for cohesive branding of Ranong's mineral springs.
2. Product Innovation Combining mineral water with pandan and yanang herbs shows strong potential for wellness product development (Kanchanapoom & Putalun, 2019)
3. Soft-Power Marketing Strategies align with Thailand's OFOS initiative and emphasize global market outreach and digital branding (Kotler et al., 2021)

CONCLUSION AND FUTURE WORK

Ranong's natural resources and cultural knowledge provide strong opportunities for wellness tourism and soft-power-based product development. The study proposes an integrated framework to enhance local identity, promote innovation, and elevate Thailand's international soft-power index.

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HUMAN CAPITAL MANAGEMENT TO ENHANCE COMPETITIVE SKILL OF UNIVERSITY ESPORTS ATHLETES

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ABSTRACT

Esports, or electronic sports, has rapidly gained global recognition and has been incorporated into major multi-sport events, reflecting a transformation in the sports landscape. Despite its growth, the Thai esports industry faces challenges related to social acceptance and concerns regarding youth gaming behavior. This study investigates the role of human capital management (HCM) in developing the competitive skills of university-level esports athletes, particularly in Multiplayer Online Battle Arena (MOBA) games. Using a literature-based approach, the study examines HCM processes including planning, job analysis, recruitment and retention, selection, training and development, performance management, compensation, and pay-for-performance systems. These processes are linked to skill development frameworks, including Deliberate Practice, Mental Models, Flow State, Macro/ Micromanagement, and Psychological Resilience. Findings indicate that systematic HCM practices enhance athletes' technical proficiency, strategic understanding, mental readiness, and adaptability. The integration of structured training, psychological support, and strategic resource allocation creates optimal learning environments, ultimately improving individual and team performance. The study highlights that effective HCM and strategic support are directly associated with esports skill development, providing actionable insights for universities and competitive teams aiming to maximize athlete potential.

Keywords: Esports, Human Capital Management, Skill Development, University Athletes, MOBA, Deliberate Practice, Flow State, Psychological Resilience

INTRODUCTION

Esports, or electronic sports, have rapidly gained international recognition and have been included in major multi-sport events, such as the Asian Games, with consideration for inclusion in the

Olympic Games. This trend reflects a transformation in the global sports landscape (Kasemsan, 2025; Kiranat, 2025a) [1],[2]. Esports competitions encompass both team-based and individual formats, featuring popular games such as League of Legends, Dota 2, and Arena of Valour (RoV) (Chollada, 2021; Kasemsan, 2025) [3].

In Thailand, the Sports Authority of Thailand has officially recognised esports as a sport, making it eligible to establish associations, which led to the creation of the Thailand Esports Federation (TESF) in 2017 (Kiranat, 2025a; Prateep, 2025) [4]. This institutionalization has facilitated the formal development of the esports industry, creating professional opportunities and significant economic value (Apicha, 2025; Chaipayoom, 2025) [5],[6]. Despite its growth potential, the Thai esports industry faces challenges and concerns regarding social acceptance and gaming addiction among youth (Chollada, 2021; Phubet, 2025; Udom, 2025) [7],[8]. These issues underscore the importance of human resource development and competitive skill enhancement for university-level esports athletes (Werner, Schuler, & Jackson, 2012; Kiranat, 2025b) [9],[10].

This study employs a literature-based approach, reviewing relevant scholarly articles, theses, and reports to synthesize insights on human capital management strategies and their impact on esports skill development (Werner, Schuler, & Jackson, 2012; Kasemsan, 2025). The study aims to examine human capital management strategies to develop the competitive potential of university esports students, particularly in Multiplayer Online Battle Arena (MOBA) games (Kiranat, 2025b). The study covers athlete selection, continuous training and development, and the promotion of technical skills, analytical thinking, and teamwork (Chaipayoom, 2025; Kasemsan, 2025). The results are expected to provide insights into systematic human capital management approaches that enhance the strategic capabilities of esports athletes (Kiranat, 2025a; Apicha, 2025).

OBJECTIVE

1. To review the role of Human Capital Management (HCM) in developing the competitive skills of university-level esports athletes, particularly in MOBA games.
2. To identify strategies and approaches for systematic human capital and training management that enhance esports athletes' technical skills, strategic thinking, and psychological resilience.

Literature Review

Concepts and Theories of Human Capital Management

Human capital management (HCM) involves processes related to personnel, including workforce planning, recruitment and selection, job management, skill development, employee retention, performance evaluation, and exit management. Effective HCM encompasses all aspects of personnel management, as organizational success depends on the capabilities of its workforce, the retention of high-potential employees, and the maximization of skill development (Werner, Schuler, & Jackson, 2012). Key HCM processes include:

1. Human Capital Planning – Aligning workforce planning with organizational strategy to adapt and develop personnel to meet organizational goals.
2. Job Analysis – Understanding job characteristics and required competencies to maximize employee potential and support long-term organizational success.

3. Recruitment and Retention – Providing opportunities for talented personnel to join the organization while developing retention strategies to reduce turnover.

4. Selection – Choosing employees with appropriate skills, willingness to learn, and adaptability to organizational changes.

5. Training and Development – Enhancing employees' skills, knowledge, and attitudes continuously to support new tasks and career progression.

6. Performance Management – Evaluating performance and providing feedback for decision-making regarding rewards and motivation.

7. Compensation – Offering appropriate financial rewards and benefits to motivate employees and support goal achievement.

8. Pay for Performance – Designing flexible reward packages based on achievements to support strategic objectives.

In summary, HCM is a comprehensive system covering pre-employment planning, recruitment and selection, orientation, training and development, motivation, performance evaluation, compensation, health and safety, labor relations, HR research, promotion, and exit management. Ninaroon, P. el. (2024).

Concepts and Theories of Esports Skill Development

Esports skill development can be understood through five key theoretical concepts:

1. Deliberate Practice – Structured, goal-oriented training focused on mechanical skills, game sense, and decision-making, with immediate feedback to continuously enhance performance (Kasemsan, 2025).

2. Mental Models – Developing in-depth understanding of game mechanics, decision-making, and team interactions to predict outcomes and make rapid, informed choices in complex situations (Kiranat, 2025b).

3. Flow State – Achieving full concentration and immersion in the game, maximizing potential and accuracy under challenges that match the athlete's skill level (Chollada, 2021).

4. Macro/Micromanagement – Macro management involves long-term strategy planning and resource management, while micromanagement focuses on real-time decision-making and individual control. Developing both ensures comprehensive skill coverage and strategic balance (Chaiyapoom, 2025).

5. Psychological Resilience – The ability to cope with stress, failure, and pressure, maintain focus, recover from mistakes, and adapt to changing competitive scenarios (Kiranat, 2025b).

These five concepts operate synergistically to systematically enhance esports athletes' competitive skills (Kasemsan, 2025; Kiranat, 2025b).

Relationship Between Human Capital Management and Esports Skill Development

Human Capital Management

To effectively and continuously develop esports athletes' skills, universities and teams must integrate human capital management practices into processes such as planning, selection, training, motivation, and performance evaluation (Kasemsan, 2025; Kiranat, 2025a). Examples include:

- 1) Human Capital Planning – Aligning planning with team and university objectives ensures systematic skill development, training schedules, and preparation for major competitions, enhancing learning efficiency and student success (Kiranat, 2025a).
- 2) Job Analysis – Identifying role-specific skills (e.g., hero control, strategy planning, team communication) allows targeted training and maximized athlete potential (Chollada, 2021).
- 3) Recruitment and Retention – Providing opportunities for talented players and supporting academic and extracurricular needs reduces turnover and sustains team continuity, contributing to long-term success (Prateep, 2025).
- 4) Selection – Choosing athletes suitable for specific team roles based on technical skills, teamwork, and psychological readiness ensures adaptability and continuous skill improvement (Phubes, 2025).
- 5) Training and Development – Structured programs focusing on game analysis, strategic decision-making, and mental endurance enable high-level competition readiness (Chaiyaphum, 2025).
- 6) Performance Management – Continuous performance monitoring, feedback, and data-driven evaluation guide skill improvement and future development (Kiranat, 2025a).
- 7) Compensation – Providing appropriate rewards such as funding, equipment, or scholarships motivates athletes and supports personal and team development (Kasemsan, 2025).
- 8) Pay for Performance – Rewarding athletes based on achievements (e.g., competition results, league rankings, MVP awards) fosters motivation and encourages full potential utilization (Apicha, 2025; Udom, 2025).

E-sports Skill Development

Applying the aforementioned theories to human capital management, universities and teams can allocate resources, design training schedules, and provide psychological support to systematically develop technical skills, strategic understanding, mental resilience, and adaptability. Key theoretical applications include:

- 1) Deliberate Practice – Structured training supported by coaches and resources improves mechanical skills, game sense, and decision-making (Kasemsan, 2025).
- 2) Mental Models – Deep understanding of game mechanics and strategies is enhanced through resources such as guides, video analysis, and strategic consulting (Kiranat, 2025b).
- 3) Flow State – Appropriate environment and psychological support facilitate immersion, focus, and reduced stress during competition (Chollada, 2021).
- 4) Macro/Micro Management – Balancing strategic planning and real-time decision-making strengthens team performance and technical execution (Chaiyaphum, 2025).

5) Psychological Resilience – Coaches and simulated scenarios enhance athletes' ability to handle pressure, recover from mistakes, and maintain performance under competition stress (Kiranat, 2025b).

METHODOLOGY

Population

The population used in this study comprised undergraduate students at Suan Sunandha Rajabhat University across all faculties who have experience or direct involvement in e-sports activities. This includes players who have previously participated in competitions, as well as those who are interested in and follow the e-sports industry, particularly the MOBA genre.

Instrument Development

The research instrument used in this study was a questionnaire, which was structured into four sections:

Section 1: General information about the respondents, including gender, age, marital status, educational level, average monthly income, sources of income, and the type of MOBA games they play. The questions consisted of both open-ended and closed-ended items.

Section 2: Questions related to human resource management for university-level e-sports athletes. These items were measured using a five-point Likert scale.

Section 3: Questions related to the development of competitive skills for university-level e-sports athletes. These items were also measured using a five-point Likert scale.

Section 4: Additional comments and suggestions, presented as open-ended questions.

RESULTS

The findings of this study indicate that human capital management is a critical determinant in enhancing the competitive potential of university esports athletes. Effective management practices including systematic planning, structured athlete selection, training program design, continuous performance evaluation, and well-defined reward mechanisms contribute directly to the sustained development and improvement of athletes' competencies. These functions ensure that skill enhancement does not occur incidentally but follows a continuous, data-driven, and performance-oriented progression (Werner et al., 2012; Kasemsan, 2025; Kiranat, 2025a).

The study further demonstrates that the development of esports athletes relies heavily on an integrated framework of Deliberate Practice, Mental Models, Flow Theory, Macro and Micromanagement, and Psychological Resilience. These theoretical foundations support the creation of learning environments that strengthen athletes' decision-making, cognitive processing, and in-game adaptability. Deliberate Practice promotes intentional and high-quality training, while Mental Models enhance pattern recognition and strategic anticipation. Flow State fosters deep concentration during competition, and Psychological Resilience equips athletes to manage stress, uncertainty, and high-pressure competitive situations.

Moreover, the results underscore the importance of strategic resource allocation for maximizing athletic performance. Investments in expert coaching, analytical technology, performance tracking systems, and sports psychology services provide athletes with the tools necessary for advanced tactical understanding and continuous self-improvement. This combination of human capital practices and strategic resource deployment has been shown to enhance not only individual capabilities but also team coordination, adaptability, and competitive success in university-level esports (Kasemsan, 2025; Kiranat, 2025b; Chaiyapoom, 2025).

Overall, the study concludes that esports performance excellence results from coordinated human capital management, evidence-based training models, and targeted resource support. Universities that implement these approaches are more likely to cultivate athletes with superior technical skills, stronger mental fortitude, and heightened competitive readiness leading to sustainable performance outcomes in collegiate esports environments.

DISCUSSION AND CONCLUSION

This study demonstrates that human capital management plays a crucial role in enhancing the competitive potential of university esports athletes, including technical skills, strategic understanding, mental readiness, and resilience (Werner et al., 2012; Kasemsan, 2025; Kiranat, 2025a).

Planning, selection, structured training programs, performance evaluation, and reward systems are effectively applied to ensure continuous and systematic athlete development.

The integration of theories such as Deliberate Practice, Mental Models, Flow State, Macro/ Micro Management, and Psychological Resilience supports the creation of optimal learning environments, enhancing decision-making and competitive performance. Strategic resource allocation—including coaching, technology, and sports psychology—fosters higher athlete competence and adaptability to competitive challenges (Kasemsan, 2025; Kiranat, 2025b; Chaiyapoom, 2025).

The findings highlight several key insights:

- 1) Human capital planning and management are crucial factors in developing esports athletes' competitive skills, ensuring alignment between training, competition, and team/university objectives (Werner et al., 2012).
- 2) Selection and retention of high-potential athletes influence team continuity and competitive efficiency, reducing turnover and fostering team stability (Prateep, 2025; Phubet, 2025).
- 3) Application of skill development theories (Deliberate Practice, Mental Models, Flow State, Psychological Resilience) ensures structured and effective training aligned with real competitive scenarios (Kasemsan, 2025; Kiranat, 2025b).
- 4) Strategic support, including coaching, evaluation, rewards, and conducive learning environments, enhances athlete competence, adaptability, and overall team readiness (Apicha, 2025; Udom, 2025; Chaiyapoom, 2025).

In conclusion, human capital management and strategic support are directly linked to the advancement of esports skill development. Universities and teams that systematically integrate these practices can maximize their athletes' potential, ensuring both individual growth and collective success in competitive esports (Werner et al., 2012; Kasemsan, 2025; Kiranat, 2025a).

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INNOVATIVE ESPORTS COMPETITIONS FOR THE INTERNATIONAL PROMOTION OF THAI SPORTS POTENTIAL: A CASE STUDY OF THE UNIVERSITY ESPORTS CHAMPIONSHIP

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ABSTRACT

Esports is a relatively new sport. However, with digital technology, people around the world can play together without borders, leading to rapid popularity in many countries. This research aims to create innovative competitions through games and esports to promote Thai esports to an international level. Under the University eSports Championship concept, it encourages young people to pursue new careers, stay ahead of global changes, and respond to the continuous growth of the esports industry and related businesses to meet international standards. The project begins by studying market demands in gaming and esports to enhance competitive capabilities, examining training methods and ergonomic planning to develop the physical potential of esports athletes—such as endurance during gameplay, training, muscle strengthening, and agility in response to the brain and muscles—as well as caring for muscles to prevent injuries from prolonged gaming. It also aims to develop competition formats on major platforms to elevate Thai esports to a global level, providing youth with real-world experience and supporting local entrepreneurs in shifting from importers to producers and rights owners. Additionally, it promotes English communication to support game and esports competitions, builds awareness through digital marketing, branding, and content creation, and develops youth skills through training. This fosters the development of new skills that can be further developed into careers in the digital age, creating opportunities for young people to earn income, manage and care for themselves, and utilise technology to add value to the country's economy.

Keywords: Innovative Esports Competitions, Thai Sports, University eSports Championship

INTRODUCTION

The value of the gaming industry in Thailand in 2025 is expected to be 36.5 billion baht, an increase of 2.8% from 2024 (from an earlier forecast of 1.6% growth or a value of 36.1 billion baht as of April 2025). This is due to the rising number of players and increased spending on in-app purchases (IAP). Additionally, the distribution, import, and licensing businesses related to games in Thailand are projected to grow by 3.5%, while game development and contract manufacturing companies face challenges; the market value is expected to decline by 26.4% compared to the previous year, mainly due to intense competition from foreign companies and the tendency of Thai players to prefer international games, as well as the impact of AI-assisted game development on contractors. In 2025, it is estimated that there will be 42.5 million player accounts, an increase of 1.2% from the previous year, or an average growth of

10% annually since 2020. A survey by We Are Social indicates that Thais aged 16 and above rank third globally in gaming. The leading player groups are Generation Y, which has high purchasing power and focuses on spending on games, and Generation Z, the fastest-growing group expected to become the primary income source in the future. They value self-expression and enjoy customisation. The Thai gaming industry reflects not only prominent figures but also presents new opportunities for youth and creative industry entrepreneurs to have a presence on the global stage. If support and platforms for the new generation are further developed, Thailand has the potential to become a regional game hub. Although the Thai gaming industry has expanded significantly compared to the past, this growth is from a low base. It is still in its early stages relative to many other Asian countries, such as Malaysia, Singapore, and China. Certain factors need to be monitored, especially the continued support from both the government and the private sectors to elevate Thailand's gaming industry to an international level. This requires resource support and an accurate understanding of the industry and the e-sports business, as professional and semi-professional players together account for only 6-8% of all gamers in Thailand.

Elevating youth and amateur players, with no less than 90% of them, to be able to develop into competitive-level players in the future, as well as pushing domestic operators to transition from users, importers, and distributors to producers and rights owners, is essential for the sustainable development of this industry. This not only helps expand the digital economy but also aligns with government policies that aim to support entrepreneurs in owning intellectual property. The shift from an industry where most players engage in gaming for recreation to professional competition or eSports Pro-Players is expected to generate income and opportunities for all involved, both directly and indirectly. This creates careers such as content creators, production organisers, team managers, tournament organisers, game administrators, commentators, game casters, physiotherapists, and team doctors, among others.

Therefore, the research team conducted a study titled "Innovative Esports Competitions for the International Promotion of Thai Sports Potential: A Case Study of the University eSports Championship," which aims to support young people in creating new careers, keeping pace with global changes, and responding to the growth of the esports industry and related businesses that are continuously expanding to meet international standards. This involves studying market demand in the gaming and esports industries to enhance competitive capabilities, examining training models and planning principles to develop the physical potential of esports athletes, and developing competition formats across major platforms. It also includes English-language communication, digital marketing strategies, branding and content creation, and youth skills development through training. These efforts promote learning new skills through organising competitions and real-world experiences, enabling further development and creating new careers that adapt to the digital age. This creates opportunities for young people to earn income from their careers, become self-reliant, and manage themselves, thereby leveraging technology to add value to the country's economy.

Conceptual Framework

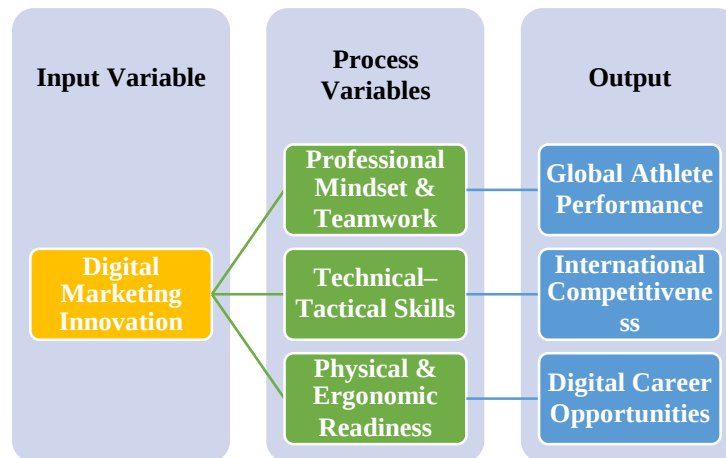


Figure 1

OBJECTIVE

1. To create innovations in digital marketing, branding, and content innovation.
2. To develop the skills of youth through training processes and prototype competitions.

METHODOLOGY

The study area in Bangkok includes Suan Sunandha Rajabhat University, a university with an E-sport laboratory and the Focus Arena E-sports Centre.

Population and sample group

1. The population and sample group used are e-sports athletes, totaling 400 individuals.
2. The sample size was therefore 399 people; an additional person was included to make a total of 400.
3. Sampling method: The researcher planned the sampling using both probability sampling and non-probability sampling methods. The sampling process involved stratified random sampling by selecting universities with E-sport laboratories and the Focus Arena E-sports Centre in Bangkok. Additionally, convenience sampling was employed by collecting questionnaires from willing and cooperative participants at each selected location in the first and second stages, until a total of 400 samples were collected.

Research tools

Research tools include questionnaires created by the researcher to foster innovation in competition through games and e-sports, aiming to promote Thai e-sports to the international stage under the concept of the University eSports Championship.

Quality Inspection of Instruments

The quality testing of the questionnaire includes an assessment of validity and reliability, covering both aspects as follows: 1) Validity, which evaluates content validity, including content coverage and language accuracy. 2) Reliability, where the entire questionnaire was tested with a sample of 30 tourists, and the reliability coefficient was calculated using Cronbach's alpha method.

Data Analysis

After the research team collected field data from the questionnaires, all data were selected, organised, and grouped, then analysed using a computer with specialised software. The statistical methods used for data analysis are as follows: Part 1 is a questionnaire about personal characteristics of athletes. Part 2 concerns attitudes towards playing, including (1) comparative advantages, (2) compatibility with athletes' needs, (3) trialability, and (4) observability. Part 3 relates to attitudes towards sports, including (1) usage attitude, (2) ease, and (3) attributes. Part 4 involves a questionnaire on integrated marketing communication innovations, including (1) traditional communication and (2) digital media communication. Part 5 is a questionnaire about past playing behaviour. Part 6 concerns post-playing behaviour, including (1) acceptance of consumption innovation, (2) intention to purchase in the future, and (3) the tendency to recommend via electronic media. All six parts of the questionnaire were analysed using descriptive statistics, including 1. Descriptive statistics analysis and 2. Inferential statistics.

RESULTS

Esports is a relatively new sport that has emerged recently. However, with digital technology, people around the world can play this sport together without borders, leading to rapid popularity in many countries. This research aims to create innovative competitions through games and esports to promote Thai esports on the international stage. The concept of the University eSports Championship supports young people in creating new careers, staying ahead of global changes, and responding to the growth of the esports industry and related businesses that are continually expanding, with international standards. The research gap begins with studying the market demand of the gaming and esports industry to enhance competitive capabilities, examining training methods and strategic planning to develop the physical potential of esports athletes. This aims to increase athletes' endurance to play and train longer, strengthen muscles, and improve quick response times of the brain and muscles. It also covers muscle health and injury prevention from prolonged gaming. The development of competition formats across major platforms aims to elevate Thai esports competitions to an international level by organising events that provide real-world experience for young people. Additionally, it aims to enable local entrepreneurs to shift from users, importers, and distributors to manufacturers and rights owners, alongside others interested, while promoting English communication to support game and esports competitions. This includes raising awareness through digital marketing strategies, branding, content creation, and youth training to foster new skills that can be further developed and create new careers adapted to the digital era. It offers young people opportunities to earn income through their careers, become self-reliant, and manage themselves, thereby leveraging technology to add value to the country's economy.

CONCLUSION AND FUTURE WORK

This research aims to study innovations in electronic sports (Esports) competitions that have the potential to enhance Thailand's athletic capabilities and enable participation on the international stage. It uses a case study of the University eSports Championship, focusing on youth skill development, career creation in the digital economy, and the role of streaming platform technology in delivering high-quality experiences to viewers. The findings reveal that demographic variables such as gender, age, education level, income, and occupation do not significantly influence esports viewing behaviour, demonstrating that esports media consumption is a 'demographic-borderless activity' and a contemporary digital behaviour accessible equally by all groups. Additionally, factors related to viewing behaviour and

platform features— such as stability, clarity, continuous broadcasting, and real-time interactivity— positively impact viewer satisfaction. This aligns with the concepts and findings of Chatterjee & Kar (2020), who state that 'Perceived Benefits', 'Perceived Ease of Use', and 'Compatibility' are key factors in generating positive responses to digital media. The study also highlights that social media use can expand business opportunities for both entrepreneurs and consumers, reflecting the importance of digital media systems within the esports ecosystem. The research further supports the role of innovation in competitions—including digital marketing, branding, content production, competition design, and youth skill development (Bousri, A., & Santaweek, W., 2023)—which collectively help elevate athlete quality, create career opportunities, and expand the regional esports industry. This is consistent with Kaplan & Haenlein's (2010) view that social media serves as a context for content creation and information exchange on Web 2.0, forming a foundation for building audiences, online communities, and competition ecosystems, similar to Johnson's (2014) description of virtual games as social interaction spaces for digital users. Furthermore, creating highly engaged online communities can foster brand loyalty and word-of-mouth (WOM) promotion, as Sharma & Bharathi (2013) point out, both of which are crucial for esports competitions seeking a strong viewer and fan base. In conclusion, designing esports competitions with innovation, alongside systematic youth skill development, can serve as a 'strategic mechanism' to enhance athletic potential, create careers in the digital economy, develop branding, and position Thailand within the international esports industry, thereby sustainably increasing the country's digital economic value. The Esports industry such as E-sport player, manager, game analyst and designer, game developer, digital media developer, game reviewer, game reviewer E-sport league, E-sport athlete manager and game entrepreneur and etc. Phonsri, N., Pahasing, B., Wantayakul, N., Trusjaithum, P. (2023).

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MARATHON RUNNING BEHAVIOR AND INTRINSIC MOTIVATION AMONG GENERATION Z

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ABSTRACT

This study aimed to examine marathon running behavior and intrinsic motivation among Generation Z. The sample consisted of 400 individuals aged 18–24 years who had participated in marathon running for at least one year. A questionnaire was employed as the research instrument, and the data were analyzed using descriptive statistics, including percentage, mean, and standard deviation, as well as multiple regression analysis. The results indicated that marathon running behavior among Generation Z was at a very high level ($\bar{x} = 4.71$, S.D. = 0.62), while intrinsic motivation was found at a high level ($\bar{x} = 4.22$, S.D. = 0.78). Hypothesis testing further revealed that intrinsic motivation exerted a significantly positive influence on marathon running behavior among Generation Z at the .05 level of statistical significance ($\beta = 0.45$, $t = 6.78$, $p < .001$), indicating that internal drives play a crucial role in encouraging their participation in marathon running. Overall, the findings highlight the importance of intrinsic motivation in promoting exercise behavior and sustained engagement in marathon running among young adults.

Keywords: Behavior, Motivation, Generation Z, Marathon Running

INTRODUCTION

Marathon running has become an increasingly popular form of physical activity over the past decade, both in Thailand and worldwide, driven by rising public health awareness and efforts to enhance quality of life (Wang & Liu, 2020). The global surge in recreational running—intensified after the COVID-19 pandemic—has shaped marathons into a social movement that emphasizes health, personal resilience, and community connection. Beyond improving physical fitness, marathon running embodies participants' determination, psychological resilience, and a profound sense of personal accomplishment. It has also become a lifestyle symbol for many young adults, representing discipline, self-improvement, and identity expression.

Generation Z, defined as those born between 1997 and 2012, has emerged as a key demographic participating in various forms of physical activity, including marathon running. Growing up in the digital era—where technology, the internet, and social media heavily influence lifestyle choices—this generation displays motivational patterns and behavioral expressions distinct from earlier cohorts (Turner, 2015). Their engagement with physical activity is often intertwined with digital platforms, wearable technologies, and online communities that provide real-time performance tracking, virtual encouragement, and social validation. These digital-era characteristics shape their identity expression, personal challenges, and pursuit of peer recognition through online platforms (Deci & Ryan, 2000; Chonthicha Punyapat, 2022).

Beyond the sports domain, research has shown that digital transformation significantly influences consumer behavior and future service usage. Pahasing, Girdwichai, Kulwanich, and Siriyanun (2022) found that business innovations within the digital economy—such as seamless online platforms, personalized services, and interactive digital experiences—strongly affect online shopping behavior and shape future service trends among consumers in Bangkok. Their findings highlight how digital convenience, system efficiency, and user experience play critical roles in shaping behavioral intentions. These insights are directly applicable to marathon participation in the digital age, where technology enhances every phase of engagement—from event registration and mobile training applications to virtual running communities and social media storytelling. Such digital features not only streamline participation but also strengthen intrinsic motivation through feedback, recognition, and community belonging.

Research by Terason and Pahasing (2025) further underscores the role of digital media in shaping identity and national pride through sports participation, demonstrating the substantial influence of online environments on perceived value and self-concept among digital-era sports consumers. Likewise, marathon running has evolved into a “social space” where young people express their identity through digital platforms, share performance achievements, and engage with running communities in ways that extend far beyond the physical event itself. Phonsri, Pahasing, Wantayakul, and Trusjaithum (2023) also reported that motivations for esports participation—such as personal challenge, achievement, and enjoyment—closely parallel the intrinsic drivers associated with marathon running, reinforcing the idea that digital-era motivations transcend specific activity types.

Furthermore, the growing integration of sport, technology, and lifestyle culture has positioned marathons as a hybrid digital-physical experience for Generation Z. The blending of fitness apps, social media engagement, wearable technologies, and event branding creates a multidimensional environment that supports both extrinsic and intrinsic motivation. For many young individuals, marathon participation is not solely an athletic endeavor, but also a means of self-expression, social connection, and digital identity construction. Wantayakul, N. (2025).

Given this context, understanding the behavior and intrinsic motivation of Generation Z toward marathon running is essential. Such insights explain the factors influencing physical activity participation among digital natives and provide valuable guidance for designing marathon events that align with their lifestyles, interests, and social environments. Ultimately, this understanding contributes to fostering a strong and sustainable health culture in contemporary Thai society.

OBJECTIVE

To examine the marathon running behavior and intrinsic motivation among Generation Z.

METHODOLOGY

This quantitative research aimed to examine marathon running behavior and intrinsic motivation among Generation Z. The sample consisted of 400 individuals aged 18–24 years residing in Bangkok who had participated in marathon running for at least one year. Purposive sampling was employed to select the participants. The research instrument was a questionnaire developed based on a review of relevant literature and related empirical studies. Content validity was assessed by experts, yielding item– objective congruence (IOC) values ranging from 0.81 to 1.00, and reliability analysis indicated good internal consistency, with Cronbach's alpha coefficients between 0.81 and 0.89. Data were collected through both online and offline channels. Descriptive statistics, including percentage, mean, and standard deviation, were used to analyze the data, along with multiple regression analysis to examine marathon running behavior and intrinsic motivation among Generation Z at the .05 level of statistical significance.

RESULTS

1. The assessment indicated that Generation Z exhibited a very high level of marathon running behavior ($\bar{x} = 4.71$, S.D. = 0.62). The highest mean scores were observed for satisfaction with running consistency ($\bar{x} = 4.78$, S.D. = 0.65) and running at least once per year ($\bar{x} = 4.78$, S.D. = 0.56), followed by having a clear training plan ($\bar{x} = 4.75$, S.D. = 0.55). Intrinsic motivation was also found at a high level ($\bar{x} = 4.22$, S.D. = 0.78). The highest mean score was running to develop abilities and challenge oneself ($\bar{x} = 4.32$, S.D. = 0.95), followed by enjoyment ($\bar{x} = 4.25$, S.D. = 0.98) and increased self-confidence ($\bar{x} = 4.25$, S.D. = 0.75). Overall, both marathon running behavior and intrinsic motivation were high, supporting sustained participation among Generation Z, as shown in Table 1.

Table 1

Levels of Marathon Running Behavior and Intrinsic Motivation

No.	Marathon Running Behavior of Generation Z	$\bar{x}$	S.D.	Interpretation
1	Marathon Running Behavior			
	Ran at least once per year	4.78	0.56	Most
	Followed a clear training plan	4.59	0.84	Most
	Participated in marathon training regularly	4.75	0.55	Most
	Joined marathon events with friends or peers	4.65	0.48	Most
	Felt satisfied with personal running consistency	4.78	0.65	Most
	Total	4.71	0.62	Most
2	Intrinsic Motivation			
	Ran to improve physical fitness and health	4.25	0.98	More
	Ran to achieve personal goals	4.15	0.64	More

No.	Marathon Running Behavior of Generation Z	$\bar{x}$	SD	Interpretation
	Ran to challenge themselves and develop abilities	4.32	0.95	More
	Enjoyed marathon running	4.25	0.75	More
	Felt confident and proud of their running ability	4.11	0.55	More
	Total	4.22	0.78	More

2. Multiple regression analysis demonstrated that intrinsic motivation had a significantly positive influence on marathon running behavior ($\beta = 0.45$, $t = 6.78$, $p < .001$). This finding indicates that intrinsic motivation—rooted in pride, personal challenge, and a sense of accomplishment—is a key determinant of sustained participation in marathon running, as shown in Table 2.

Table 2
Multiple Regression Analysis of Intrinsic Motivation

Independent Variable (X)	(β)	t	p-value
Intrinsic Motivation	0.45	6.78	< .001

Discussion

The findings of this study on marathon running behavior and intrinsic motivation among Generation Z can be discussed as follows:

1. The results revealed that most respondents were adolescents and young adults in Generation Z, with an average age between 18 and 24 years, and had at least one year of marathon running experience. Their overall marathon running behavior was at a very high level ($\bar{x} = 4.71$, S.D. = 0.62). At the item level, the highest mean scores were found for satisfaction with the consistency of their marathon running ($\bar{x} = 4.78$, S.D. = 0.65) and running a marathon at least once per year ($\bar{x} = 4.78$, S.D. = 0.56), followed by having a clear training plan for marathon running ($\bar{x} = 4.75$, S.D. = 0.55). The next highest item was regularly participating in marathon events ($\bar{x} = 4.65$, S.D. = 0.48), and subsequently setting clear goals for each marathon ($\bar{x} = 4.59$, S.D. = 0.84). These findings are consistent with Funk, Beaton, and Alexandris (2011), who indicated that physical activity and sport participation behaviors are often linked to intrinsic motivation and personal goal-setting, which help foster consistency and commitment to long-term training. They are also in line with Clarke, Geurin, and Burch (2019), who found that sport fans or sport consumers with clear goals and structured training plans are more likely to maintain physical activity behavior over time.

Regarding intrinsic motivation toward marathon running, the overall level among Generation Z was high ($\bar{x} = 4.22$, S.D. = 0.78). At the item level, the highest mean score was for running a marathon to develop one's abilities and to challenge oneself ($\bar{x} = 4.32$, S.D. = 0.95), followed by finding marathon running fun and enjoyable ($\bar{x} = 4.25$, S.D. = 0.98), and feeling that marathon running increases self-confidence ($\bar{x} = 4.25$, S.D. = 0.75). The next items were that marathon running improves one's health ($\bar{x} = 4.15$, S.D. = 0.64) and that completing a marathon leads to feelings of satisfaction and pride ($\bar{x} = 4.11$, S.D. = 0.55). These results are consistent with Self-Determination Theory (Deci & Ryan, 1985), which posits that intrinsic motivation is a core driver of sustained behavior because it arises from feelings of pride,

challenge, and personal satisfaction. The findings also align with Sung, Son, and Choi (2022), who examined the motivations of online sport fans in Korea and reported that developmental motives and self-satisfaction influence intentions to participate in future sport activities. Similarly, Podlivaev and Grigolia (2012) noted that personal development and a sense of achievement are closely related to motivation for continued participation in sports activities. In addition, the results correspond with Maslow's (1943) hierarchy of needs, which suggests that the highest level of human needs is self-actualization, or the fulfillment of one's potential. This perspective reflects how Generation Z perceives marathon running as an activity that satisfies their needs for achievement, challenge, and self-pride.

2. The multiple regression analysis further revealed that intrinsic motivation had a significantly positive influence on marathon running behavior among Generation Z at the .05 level of statistical significance ($\beta = 0.45$, $t = 6.78$, $p < .001$). This indicates that when individuals possess higher levels of intrinsic motivation, they are more likely to participate in marathon running. These findings are consistent with Self-Determination Theory (Deci & Ryan, 1985), which posits that internal psychological needs—such as autonomy, competence, and relatedness—serve as key factors driving sustained engagement in activities. In addition, the results align with the study by Wang and Liu (2020), who found that intrinsic motivation is a critical determinant of exercise participation and physical activity, particularly among younger generations who place strong emphasis on self-development and personal achievement. Such motivation not only enhances feelings of pride but also generates happiness derived from attaining one's goals.

Overall, intrinsic motivation plays a crucial role in shaping marathon running behavior among Generation Z. This suggests that promoting running activities for younger generations should focus on fostering internal sources of inspiration, such as encouraging personal goal-setting, designing meaningful and challenging experiences, and recognizing or celebrating individual achievements. These approaches can help stimulate continuous and sustainable participation in marathon running in the future.

CONCLUSION AND FUTURE WORK

The findings of this study demonstrate that Generation Z exhibits a remarkably high level of marathon running behavior, supported by consistent participation, clear training plans, and regular engagement in marathon events. Their intrinsic motivation was also found to be strong, particularly in areas related to personal challenge, enjoyment, and the development of self-confidence. These results reinforce Self-Determination Theory, suggesting that intrinsic motivation—driven by autonomy, competence, and personal fulfillment—plays a central role in sustaining long-term physical activity. The regression analysis further confirmed that intrinsic motivation significantly influences marathon running behavior, indicating that individuals with higher intrinsic motivation are more likely to maintain consistent participation in marathon running.

Drawing on these insights, the study highlights the importance of fostering internal motivation among young adults by encouraging personal goal-setting, offering meaningful and challenging running experiences, and recognizing individual achievements to promote ongoing engagement in marathon activities. However, while the present research provides a valuable understanding of Generation Z's behavior and motivation, future studies could broaden the scope by including participants from diverse geographic regions or cultural contexts to enhance generalizability. Additionally, employing mixed-methods or longitudinal approaches may offer deeper insights into how intrinsic motivation evolves over time and how life transitions influence marathon participation. Further research may also examine the role of digital platforms, wearable technologies, and virtual running communities in strengthening

motivation and supporting sustained involvement. Such extensions would contribute to the development of more effective strategies for promoting long-term physical activity and enhancing marathon participation among Generation Z in an increasingly digital world.

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THE INFLUENCE OF SOCIAL MEDIA USE INTENSITY AND FAN ENGAGEMENT ON PERCEIVED SUSTAINABLE ECONOMIC VALUE CREATION AMONG THAI SPORTS FANS

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ABSTRACT

This study examines how social media use intensity and fan engagement influence perceived sustainable economic value creation among Thai sports fans. Using data from 250 respondents and Partial Least Squares Structural Equation Modeling (PLS-SEM), the analysis tested the relationships among social media use, fan engagement, and sustainability-related value perceptions. The results show that social media use intensity strongly enhances fan engagement, and that both social media use and fan engagement significantly increase perceptions of sustainable economic value. The model demonstrates moderate explanatory power ($R^2 = 0.412$ for fan engagement; $R^2 = 0.336$ for sustainable economic value creation), underscoring the role of digital engagement in shaping fans' sustainability perceptions. These findings extend the understanding of digital fan behavior and provide practical implications for sport organizations seeking to leverage social media to support long-term, sustainability-oriented value creation.

Keywords: Social Media, Fan Engagement, Sustainable Economic Value, Sports Fans

INTRODUCTION

In recent years, the sport industry has become a major contributor to the global economy, driven by media rights, sponsorship, ticketing, merchandising, and an expanding range of digital services. At the same time, digital technologies—particularly social media platforms such as Facebook, X (Twitter), Instagram, TikTok, and YouTube—have transformed how sport organizations communicate with audiences and how fans consume sport content. Social media provides real-time updates, behind-the-scenes access, and interactive features that extend the sport experience beyond the physical venue.

For sport organizations, this shift presents both opportunities and challenges. Social media enables cost-effective relationship marketing and data-driven fan targeting, while empowering active online communities that can shape brand narratives in real time. Prior research shows that social media fosters fan engagement through likes, comments, shares, and user-generated content, strengthening identification, loyalty, and behavioral intentions (Abeza et al., 2013; Filo et al., 2015). More recent

evidence indicates that social media use intensity can influence sport-related consumption behaviors (Chen et al., 2025), highlighting its role as a mechanism through which digital engagement contributes to economic outcomes.

Alongside digital transformation, sustainability has become a central concern in sport management. Scholars argue that sport organizations should be evaluated not only on financial performance but also on environmental and social impact (McCullough et al., 2020). Sustainability initiatives, when communicated effectively, can enhance trust, legitimacy, and long-term stakeholder support (Cayolla & Escadas, 2023; Constantinescu, 2024). Evidence from the Thai service sector similarly shows that perceived value and brand-related factors drive long-term loyalty and sustainable economic outcomes (Chomchom & Phonsri, 2025).

These developments underscore the need to understand sustainable economic value creation in sport—not only the ability to generate immediate revenue, but the capacity to create long-term value aligned with environmental responsibility, social contribution, and stakeholder expectations. Fans play a central role: their decisions to attend games, purchase merchandise, subscribe to digital platforms, and support sponsors directly influence the economic sustainability of sport organizations. Their perceptions of organizational value are increasingly shaped by what they encounter on social media.

In Thailand, social media is especially influential in how fans experience sport. Terason and Pahasing (2025) demonstrate that Thai fans actively construct and express “digital nationalism” through online sport engagement, reflecting strong emotional involvement and participatory fan culture. Despite this, limited empirical research has examined how social media use intensity and fan engagement shape perceptions of sustainable economic value creation, particularly in non-Western contexts. Wantayakul N., Decha O., Whangmahaporn B. (2025).

To address this gap, the present study focuses on Thai sports fans and investigates how social media use intensity and fan engagement influence their perceptions of sustainable economic value creation. The objective is to provide empirical insight into how social media can be leveraged not only to stimulate short-term sport consumption but also to foster sustainable economic value within the sport industry.

OBJECTIVE

To examine how social media use intensity and fan engagement influence sports fans' perceptions of sustainable economic value creation in Thailand.

METHODOLOGY

Research design

This study adopts a quantitative, cross-sectional survey design to examine relationships between social media use intensity, fan engagement, and perceptions of sustainable economic value creation among sports fans. A structured questionnaire was developed from prior research on social media in sport, fan engagement, and sustainability-related value perceptions (Abeza et al., 2013; Cayolla & Escadas, 2023; Chen et al., 2025; McCullough et al., 2020). This design is suitable for testing associations among latent constructs using structural equation modeling.

Population and sample

The target population consists of sports fans in Thailand who (1) follow at least one sport team, league, or athlete and (2) use social media to consume sport-related content (e.g., news, highlights, live streams, fan pages).

Non-probability purposive sampling is employed, and data are collected online via survey links shared through sport-related social media groups, fan pages, and university networks. For structural equation modeling, a sample of 200–300 respondents is typically recommended;

therefore, this study targets at least 250 valid responses, which is deemed adequate given the model complexity and number of indicators.

Measures

All constructs were measured using multi-item scales adapted from established instruments and tailored to the Thai sport and social media context, using a five-point Likert scale (1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree).

Table 1
Measurement of latent constructs

Construct	Measure	Adapted from
Social media use intensity (SMI)	Four items on frequency, time spent, and psychological involvement in sport-related social media use.	Chen et al., 2025
Fan engagement (FE)	Four items on behavioral and emotional engagement (consumption, contribution, and creation on social media).	Abeza et al., 2013; Filo et al., 2015
Sustainable Economic Value Creation (SEV)	Four items on fans' perceptions of long-term, responsible economic value created by their sport team/organization.	Cayolla & Escadas, 2023; McCullough et al., 2020; Constantinescu, 2024

Demographic variables (e.g., age, gender, education), sport-related characteristics (e.g., main sport followed, favorite team, years as a fan), and basic social media usage information (e.g., main platform used) were also collected for descriptive and control purposes.

Data collection procedures

Data were collected using an online survey platform. Respondents first viewed an informed consent form explaining the study purpose, voluntary participation, and confidentiality; only those who agreed proceeded to the questionnaire. Screening questions ensured that participants were sports fans and regular users of social media for sport-related purposes. The survey link was distributed over several weeks via sport-related social media communities, including professional club fan pages, online supporter groups, and university sport networks. Duplicate and low-quality responses were reduced by limiting multiple submissions from the same device and by removing inconsistent or incomplete questionnaires during data cleaning.

Data analysis

Data analysis is conducted in two main stages using PLS-SEM, following the guidelines of Hair et al. (2022). In the first stage, descriptive statistics (means, standard deviations, and frequencies) are computed to summarize the sample profile and key variables. The reflective measurement model is then assessed in terms of reliability and validity. The evaluation criteria for the measurement and structural models follow commonly recommended thresholds for PLS-SEM and are summarized in Table 2.

Table 2
PLS-SEM Data Analysis Procedures

Analysis Step	Criteria / Procedures
1. Measurement Model Evaluation	- Outer Loadings (≥ 0.70)

	- Cronbach's Alpha (≥ 0.70) - Composite Reliability (CR) (≥ 0.70) - Average Variance Extracted (AVE) (≥ 0.50) - Discriminant Validity: HTMT (< 0.85)
2. Structural Model Evaluation	- Path Coefficients (β), t-values and Significance (p-values) - Coefficient of Determination (R^2) - Effect Size (f^2) - Bootstrapping (5,000 resamples)

Indicator reliability is evaluated using outer loadings, with values of 0.70 or higher considered acceptable. Items with loadings between 0.40 and 0.70 are examined for possible removal only if their deletion leads to an improvement in composite reliability (CR) or average variance extracted (AVE), whereas items with loadings below 0.40 are treated as candidates for removal, subject to content validity considerations. Internal consistency reliability is assessed using Cronbach's alpha, rho_A, and CR, with values of 0.70 or above regarded as satisfactory for exploratory and confirmatory purposes. Convergent validity is evaluated via AVE, which should exceed 0.50 for each construct, indicating that the construct explains more than half of the variance of its indicators.

Discriminant validity was assessed using both the Fornell-Larcker criterion and the heterotrait-monotrait ratio of correlations (HTMT). Under the Fornell-Larcker criterion, the square root of each construct's AVE is required to exceed its correlations with other constructs. For HTMT, values below 0.85 (or below 0.90 for conceptually similar constructs) are taken as evidence of adequate discriminant validity.

In the second stage, the structural model is evaluated. Given the predictive orientation of the study and the use of Likert-type indicators, PLS-SEM is considered appropriate. Path coefficients are estimated and their significance is tested using a non-parametric bootstrapping procedure with a large number of resamples (e.g., 5,000–10,000 subsamples, two-tailed test, $\alpha = 0.05$). Coefficients of determination (R^2 and adjusted R^2) are used to assess the explanatory power of the endogenous constructs. Effect sizes (f^2) are computed to evaluate the relative contribution of each exogenous construct to the R^2 values, adopting thresholds of 0.02, 0.15, and 0.35 to denote small, medium, and large effects, respectively. Predictive relevance (Q^2) is examined using the blindfolding procedure, with Q^2 values greater than zero indicating that the model has predictive relevance for the dependent constructs.

Through this analytical approach, the study seeks to provide robust empirical evidence on how social media use intensity and fan engagement contribute to sports fans' perceptions of sustainable economic value creation, offering methodological and practical guidance for sport organizations designing digital strategies that support long-term, responsible growth.

RESULTS

Descriptive statistics

Data from 250 sports fans were analyzed. The three constructs—social media use intensity (SMI), fan engagement (FE), and perceived sustainable economic value creation (SEV)—were calculated as mean scores of four indicators each, using a five-point Likert scale (1 = strongly disagree to 5 = strongly agree). Overall, the descriptive statistics showed moderate to moderately high perceptions on all constructs. These results are summarized in Table 3.

Table 3
Descriptive statistics and correlations among constructs (N = 250)

Construct	Mean	SD	SMI	FE	SEV
SMI	3.023	1.190	1.000	0.642	0.503

FE	3.092	1.130	0.642	1.000	0.543
SEV	3.070	1.220	0.503	0.543	1.000

Measurement model

Survey data obtained from 250 sports fans were used to estimate the measurement model. The three latent constructs—social media use intensity (SMI), fan engagement (FE), and perceived sustainable economic value creation (SEV)—were each measured with four indicators on a five-point Likert scale (1 = strongly disagree to 5 = strongly agree). Overall, the indicators showed moderate to moderately high mean scores. The outer loadings, reliability coefficients, and AVE values for each construct are reported in Table 4.

Table 4
Measurement model results: outer loadings, reliability, and convergent validity

Construct	Item	Loading	Cronbach's alpha	AVE	CR
Social media use intensity (SMI)	SMI1	0.906	0.927	0.820	0.948
	SMI2	0.907			
	SMI3	0.904			
	SMI4	0.906			
Fan Engagement (FE)	FE1	0.887	0.913	0.793	0.939
	FE2	0.883			
	FE3	0.903			
	FE4	0.889			
Sustainable Economic Value Creation (SEV)	SEV1	0.892	0.928	0.822	0.949
	SEV2	0.911			
	SEV3	0.909			
	SEV4	0.914			

As shown in Table 4, the standardized outer loadings for all items were high, ranging from approximately 0.88 to 0.91 across the three constructs. The loadings for SMI1–SMI4, FE1–FE4, and SEV1–SEV4 all exceeded the recommended threshold of 0.70, indicating strong indicator reliability.

Internal consistency reliability was also excellent. Cronbach's alpha coefficients were 0.927 for social media use intensity (SMI), 0.913 for fan engagement (FE), and 0.928 for sustainable economic value creation (SEV). The corresponding composite reliability (CR) values were 0.948, 0.939, and 0.949, respectively, all well above the recommended minimum of 0.70, reflecting very high internal consistency for each construct.

Convergent validity, assessed using AVE, was satisfactory for all constructs. The AVE values were 0.820 for SMI, 0.793 for FE, and 0.822 for SEV, all exceeding the 0.50 criterion, confirming that each latent variable explained a substantial proportion of the variance in its indicators.

Discriminant validity was examined using the Fornell–Larcker criterion. The square roots of the AVE for SMI, FE, and SEV (0.91, 0.89, and 0.91, respectively) were greater than the inter-construct correlations (SMI–FE = 0.642, SMI–SEV = 0.503, FE–SEV = 0.543), indicating that each construct shared more variance with its own indicators than with the other constructs.

Taken together, these results indicate that the measurement model exhibits strong reliability as well as adequate convergent and discriminant validity, and is therefore suitable for subsequent structural analysis using PLS-SEM.

Structural model results

The structural model was evaluated using path coefficients, t-values, p-values, effect sizes (f^2), and the coefficients of determination (R^2) for the endogenous constructs. Figure 1 presents the PLS-SEM structural model with the standardized path coefficients and R^2 values. Table 5 summarizes the estimated path coefficients among social media use intensity (SMI), fan engagement (FE), and perceived sustainable economic value creation (SEV).

Figure 1

Depicts the PLS-SEM structural model with the standardized path coefficients and R^2 values

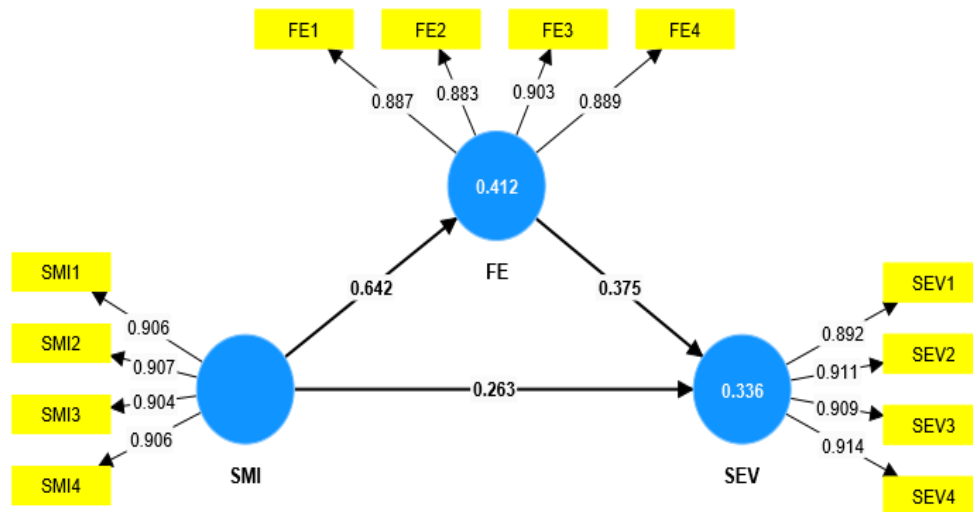


Table 5
Structural model results

Paths	β	t-value	p-value	f^2	Hypothesis	Result
SMI $\rightarrow$ FE	0.642	17.816	0.000*	0.701	H1	Supported
FE $\rightarrow$ SEV	0.375	5.639	0.000*	0.124	H2	Supported
SMI $\rightarrow$ SEV	0.263	5.858	0.000*	0.061	H3	Supported

Note. *p-value < 0.001.

As shown in Table 5, social media use intensity exerts a strong positive effect on fan engagement ($\beta = 0.642$, $t = 17.816$, $p < .001$), indicating that higher levels of social media use are associated with substantially greater fan engagement. Both SMI and FE also exhibit significant positive effects on perceived sustainable economic value creation. The path from FE to SEV is moderately strong and statistically significant ($\beta = 0.375$, $t = 5.639$, $p < .001$), suggesting that fans who are more engaged with sport-related content on social media are more likely to perceive that sport organizations generate sustainable economic value.

The direct effect of SMI on SEV is smaller but remains significant ($\beta = 0.263$, $t = 5.858$, $p < .001$), implying that intensive social media use directly contributes to higher perceptions of sustainable economic value, even after accounting for the effect of fan engagement.

Regarding effect sizes, SMI demonstrates a large effect on FE ($f^2 = 0.701$), whereas the effects of FE and SMI on SEV fall within small-to-medium ($f^2 = 0.124$) and small ($f^2 = 0.061$) ranges, respectively. The explanatory power of the model is presented in Table 6.

Table 6

Coefficient of determination (R^2) for endogenous constructs

Endogenous construct	R^2
FE (Fan engagement)	0.412
SEV (Sustainable economic value creation)	0.336

The model explains 41.2% of the variance in fan engagement ($R^2 = 0.412$) and 33.6% of the variance in perceived sustainable economic value creation ($R^2 = 0.336$), indicating a moderate level of explanatory power. Overall, the findings support all three hypothesized relationships and underscore the central role of social media use intensity and fan engagement in shaping fans' perceptions of sustainable economic value creation within the sports context.

Discussion

This study examined how social media use intensity and fan engagement influence perceptions of sustainable economic value creation among Thai sports fans. The PLS-SEM results supported all three hypotheses and align with previous research on digital engagement and sport sustainability. First, social media use intensity strongly increased fan engagement ($H1$; $\beta = 0.642$, $f^2 = 0.701$), confirming that social media plays a central role in driving fans' behavioral and psychological involvement.

This finding is consistent with prior studies identifying social media as a platform for relationship building and value co-creation in sport (Abeza et al., 2013; Filo et al., 2015). The large effect size also reflects the high level of digital participation among Thai sports fans, including expressions of "digital nationalism" (Terason & Pahasing, 2025). Second, both social media use intensity and fan engagement significantly enhanced perceptions of sustainable economic value creation ($H2$ and $H3$). Fan engagement had a moderate effect ($\beta = 0.375$, $f^2 = 0.124$), suggesting that more engaged fans are more receptive to messages about long-term economic and social contributions by sport organizations. The smaller direct effect of social media use ($\beta = 0.263$, $f^2 = 0.061$) indicates that social media functions not only as an engagement tool but also as a key channel through which fans encounter information about community impact and sustainability initiatives. The model shows moderate explanatory power: social media use intensity explains 41.2% of fan engagement, and with engagement explains 33.6% of SEV.

These values mirror prior PLS-SEM research on sport consumption and sustainability (McCullough et al., 2020), suggesting that factors such as team performance or offline community activities may also shape sustainability perceptions. Theoretically, the study extends sport social media research by linking digital engagement to perceptions of sustainable economic value—an outcome rarely examined in sport contexts. It also contributes evidence from a non-Western digital environment, where social media use is high and fan identity is strongly expressed online. Managerially, the results indicate that sport organizations should view social media as a strategic tool for communicating and reinforcing sustainable value. Content that integrates entertainment with transparent information about economic, community, and environmental contributions may strengthen fans' perceptions of long-term organizational value. Targeting highly engaged fans with tailored sustainability messaging could further enhance responsible fan support.

CONCLUSION AND FUTURE WORK

The findings show that intensive social media use substantially increases fan engagement, and that both social media use and engagement positively shape fans' perceptions of sustainable economic value. The model demonstrates moderate explanatory power for both fan engagement and SEV, highlighting the growing importance of digital engagement within contemporary sport ecosystems.

Theoretically, this research bridges social media and fan engagement literature (Abeza et al., 2013; Filo et al., 2015; Matang, 2023) with frameworks on sustainability-oriented value creation

(McCullough et al., 2020; Cayolla & Escadas, 2023; Constantinescu, 2024), while contributing early empirical insights from the Thai context (Terason & Pahasing, 2025). Practically, the results suggest that clubs and leagues aiming for long-term, responsible growth should invest in strategies that stimulate meaningful social media engagement and clearly communicate how their operations create economic, social, and environmental benefits.

Future research should validate and extend this model using primary survey data from broader segments of Thai sports fans and, where possible, include comparative samples from other countries. Longitudinal or experimental designs would help clarify causal pathways and evaluate the impact of specific sustainability messages or content formats. Incorporating additional constructs—such as team identification, trust, perceived authenticity, brand equity, or behavioral indicators (e.g., purchases, attendance, digital engagement metrics)—would further enrich understanding of how digital fan engagement contributes to sustainable economic value creation in sport.

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THE INFLUENCE OF INFLUENCERS ON THE PURCHASE DECISIONS OF NEW GENERATION CONSUMERS IN THE DIGITAL ECONOMY ERA

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ABSTRACT

This research aims 1) to study the characteristics of influencers towards the attitudes of new generation consumers in the digital economy era, 2) to study the attitudes towards purchasing decisions of new generation consumers in the digital economy era and 3) to study the Influence of influencers on the purchase decisions of new generation consumers in the digital economy era. This is quantitative research; the population and sample group from new generation consumers aged 18 years and over residing in Bangkok and its vicinity of 400 samples by Non-probability sampling and convenience sampling were used. The research results found that the personal factor analysis of 400 samples found that the majority of respondents were female and mostly aged between 18 and 24 years. Most were students and employees of private companies, studied at the bachelor's degree level and had an income of less than 15,000 baht per month. The results of that new generation consumers rated influencer characteristics in all four dimensions at a "high" level, namely, content quality, engagement, credibility and authenticity, respectively. The results of that new generation consumers have attitudes towards purchasing decisions in the digital economy era, presented through influencers, with an overall average value at a "high" level. The results of the analysis of purchasing decisions at a "high" level and the hypothesis test result found that; the results of that four influencer characteristics positively influence the attitudes of new generation consumers in the digital economy era and was statistically significant ($p < .001$), the results of that the attitudes of new generation consumers have a statistically significant positive influence on purchasing decisions in the digital economy era and was statistically significant ($p < .001$) and the results of that influencer characteristics not only directly influence purchase decisions but also significantly influence consumer attitudes toward brands, a key variable in building trust, preference and motivation to purchase products in the digital economy and a statistically significant at the .05 level.

Keywords: Influencers, Purchase Decisions, New Generation Consumers, Digital Economy

INTRODUCTION

The expansion of the digital economy over the past decade has significantly transformed economic structures and consumer behavior worldwide, particularly in the post-COVID-19 era, which has led consumers to rely on online media and digital platforms as their primary channels for communication, information search, and purchase decisions (The government public relations department, 2024). In this environment, influencers have become a key player in shaping consumer brand awareness, persuasion, and purchase decisions, acting as "digital social intermediaries" that effectively connect consumers with brands. Research has Misra et al., (2024) found that influencer influence is

influenced by factors such as “credibility,” “authenticity,” “engagement,” and “content quality,” which influence consumer trust and attitudes, ultimately leading to purchase intentions or decisions. Furthermore, influencer marketing is becoming more successful because new generations of consumers, particularly Generation Z and Millennials, tend to trust individuals more than organizations and trust information from online influencers more than traditional advertising media (Haenlein et al., 2022).

In Thailand, the role of influencers is particularly prominent. According to Tellscore.(2024), the Thai influencer marketing industry is valued at more than 45 billion baht and expands by an average of more than 15% per year. Popular platforms include TikTok, Instagram, and YouTube, which have a combined user base of more than 50 million accounts. The number of full-time content creators/ influencers in Thailand, meaning that their primary source of income is content, is approximately 2 million. If part-time content creators/ influencers, who work on content as a supplementary source of income, such as micro-influencers with a small social media following of 1,000-20,000 followers, and any individuals who have generated income from content production in the past year, totals 9 million. This reflects that Thai consumers are continuously interested in and interact with creators, and influencers have become a significant force in the digital economy in 2025, as competition among creators is significantly heightened, with creators vying for attention and audience appeal. But at the same time, the size of the content creator market continues to grow due to many factors, and new creators continue to flow into the market.

The growth of the digital economy in Thailand has led to widespread social and economic changes, particularly in marketing and the behavior of new generation consumers, who use online media as a primary channel for economic activities, including product search, price comparison, and purchase decisions. This phenomenon has made the role of influencers even more important, as they are content producers who are close to consumers, build trust, and influence the opinions of their followers. Although influencers play a crucial role in consumer decision-making, there are still gaps in research that study influencer characteristics, brand attitudes, and purchase decisions in the rapidly changing digital economy environment, especially in terms of authenticity, engagement, and content quality, which are variables that significantly affect the confidence of modern consumers (Arunchoknumlap, 2023) . Therefore, researchers are interested in studying the topic “The Influence of Influencers on the Purchase Decisions of New Generation Consumers in the Digital Economy Era”, This research is therefore crucial for understanding the influence of influencers on Thai consumer behavior in the digital economy era and for generating new knowledge that truly aligns with Thai consumer behavior in the digital age.

OBJECTIVE

1. To study the characteristics of influencers towards the attitudes of new generation consumers in the digital economy era.
2. To study the attitudes towards purchasing decisions of new generation consumers in the digital economy era.
3. To study the Influence of influencers on the purchase decisions of new generation consumers in the digital economy era.

Hypothesis

Hypothesis are as follows:

H1 : Influencer characteristics such as credibility, authenticity, engagement, and content quality positively influence the attitudes of new generation consumers in the digital economy era.

H2 : Attitude positively influences the purchasing decisions of new generation consumers in the digital economy era.

H3: Influencer attributes such as credibility, authenticity, engagement, and content quality act as a proxy for attitudes and purchase decisions of new generation consumers in the digital economy era.

METHODOLOGY

The study methods are as follows:

Population and sample group

The population and sample group from new generation consumers aged 18 years and over residing in Bangkok and its vicinity. The sample population of Taro Yamane (1973) and set the confidence level at 95% of 400 samples by Non-probability sampling and convenience sampling were used.

Research tools

This research is a quantitative research. A questionnaire was used as a tool to collect data from new generation consumers aged 18 years and over residing in Bangkok and its vicinity. All variables were measured with a 5-level Likert scale.

Data analysis

The data were analyzed using descriptive statistics and inferential statistics, including Cronbach's Alpha, Descriptive statistics Frequency, Percentage, average and standard deviation inferential statistics, Pearson Correlation, Multiple Regression, Simple Regression, and Mediation Analysis to test the causal relationship between variables according to the research conceptual framework.

Variables

Independent Variables : Credibility, Authenticity, Participation and Content Quality.

Mediating Variable : Attitude.

Dependent Variable : Purchasing decisions of new generation consumers.

RESULTS

The findings of the Influence of Influencers on the Purchase Decisions of New Generation Consumers in the Digital Economy Era as follows;

Part 1 The results of the personal factor analysis of the sample of 400 samples found that the majority of respondents were female and mostly aged between 18 and 24 years. Most were students and employees of private companies, studied at the bachelor's degree level and had an income of less than 15,000 baht per month.

Part 2 The results of that new generation consumers rated influencer characteristics in all four dimensions at a “high” level, namely, content quality at a “highest” level (mean = 4.22), engagement at a “high” level (mean = 4.18), credibility at a “high” level (mean = 4.12), and authenticity at a “high” level (mean = 4.05), respectively.

Part 3 The results of that new generation consumers have attitudes towards purchasing decisions in the digital economy era, presented through influencers, with an overall average value at a “high” level (mean = 4.19).

Part 4 The results of the analysis of purchasing decisions of 400 samples generation consumers found that respondents had a high level of purchasing decision at a “high” level (mean = 4.14)

Part 5 The hypothesis test result found that:

H1 Influencer characteristics such as credibility, authenticity, engagement, and content quality positively influence the attitudes of new generation consumers in the digital economy era as follows; The multiple regression analysis revealed that the model could explain 64.2 percent of the variance in attitude ($R^2 = .642$) and was statistically significant ($p < .001$). The four influencer characteristics dimensions, namely credibility ($\beta = .241$), authenticity ($\beta = .218$), engagement ($\beta = .301$), and content quality ($\beta = .201$), had a significant positive influence on the attitude of new generation consumers in the Digital Economy Era. Form table 1

Table 1
Multiple regression analysis results of influencer characteristics on attitudes of new generation consumers in the digital economy era.

Model	B	SE(B)	Beta (β)	t	Sig.
(Constant)	0.428	0.113	–	3.788	0.000**
Credibility	0.215	0.048	0.241	4.512	0.000**
Authenticity	0.193	0.048	0.218	3.984	0.000**
Engagement	0.265	0.045	0.301	5.881	0.000**
Content Quality	0.188	0.053	0.201	3.541	0.001**

** Statistically significant at the 0.01 level.

H2 Attitude positively influences the purchasing decisions of new generation consumers in the digital economy era as follows; Attitude had a statistically significant positive influence on the purchase decision of young consumers ($B = 0.552$, $Beta = 0.612$, $p < .001$), with the regression model able to explain 37.5 percent of the variance in purchase decision ($R^2 = 0.375$). Form table 2

Table 2
Multiple regression analysis results of Attitude on the purchasing decisions of new generation consumers in the digital economy era.

Model	B	SE(B)	Beta (β)	t	Sig.
(Constant)	0.845	0.152	-	5.559	0.000**
Attitude	0.552	0.043	0.612	12.843	0.000**

** Statistically significant at the 0.01 level.

H3: Influencer attributes such as credibility, authenticity, engagement, and content quality act as a proxy for attitudes and purchase decisions of new generation consumers in the digital economy era as follows; The characteristics of influencers, including credibility, authenticity, engagement, and content quality, have a direct positive impact on purchasing decisions. Although some may not exhibit high influence, they are statistically significant at the .05 level. Overall results indicate that influencer characteristics not only directly affect purchasing decisions but also significantly influence consumer attitudes toward brands a critical variable in building trust, preference, and motivation for product selection in the digital economy era. From table 3

Table 3

The results of the analysis of direct influence, indirect influence and combined influence of variables in the structural model of influencer characteristics variables through attitude towards purchase decision.

Model	Direct Effect	Indirect Effect	Total Effect	p-value
Credibility $\rightarrow$ purchase decision.	0.112	0.133	0.245	0.016*
Authenticity $\rightarrow$ purchase decision	0.098	0.121	0.219	0.045*
Engagement $\rightarrow$ purchase decision	0.154	0.166	0.32	0.002*
Content Quality $\rightarrow$ purchase decision	0.087	0.104	0.191	0.05*

* Statistically significant at the .05 level.

CONCLUSION AND FUTURE WORK

The findings of personal factors among the 400 sample groups revealed that the majority of respondents were female and most were between the ages of 18 and 24, the age group with the highest digital media usage and influencer following. Occupation-wise, the majority of the sample were students and employees of private companies, reflecting a new generation of consumers who use online media as part of their daily lives. Regarding education level, the majority of respondents held bachelor's degrees, indicating a strong foundation in knowledge and access to digital technology. Meanwhile, average monthly income was found to be below 15,000 baht per month, which is the typical income level for students and those starting to work today. Overall, this sample group represents a new generation of consumers who are appropriately aligned with the target group of this research.

The findings show that millennial consumers place the highest importance on quality content and engagement, credibility and authenticity remain significant, but secondary, influencer image enhancing elements. New generation consumers in the digital economy era are highly likely to make purchase decisions influenced by influencer reviews and presentations, which include confidence in the product, authenticity, appropriateness, and credibility of the content received. In summary, the attitudes and purchasing decisions of new generation consumers in the digital economy era are high in both aspects, indicating that influencer content has a significant influence on product perception and selection.

Consumers in the digital economy era have significant confidence and are likely to purchase products recommended by influencers. The mean score for each evaluation item is high than 4.10, indicating that influencers play a positive role in influencing attitudes, confidence, and purchasing decisions among young consumers. In particular, the item that states "Influencer reviews or recommendations make me confident in my purchasing decision" has the high mean score (mean = 4.14), indicating that dimensions of credibility and clarity of information presented through content clearly influence purchasing decisions. Further, the high mean scores for all items indicate that influencers are important in credibility and influencing purchasing behavior among young consumers, which is consistent with the current digital economy context where consumers primarily receive information from social media with Pahasing et al.,(2022), the study topic is Business Innovations in The Digital Economy That Affect Online Shopping Behavior and The Trend of Future Service Usage Among Consumers in Bangkok the results of the hypothesis testing, it was determined that business innovation products and processes affect online shopping behavior in terms of cost per time with a significance level of .01, and that innovations in technology and products affect online purchase frequency (times/month) with a statistically significant level of 0.1, and that online shopping behavior cost per time and purchase frequency (times/month) are related to the trend of using the service for future purchases and refinancing

The findings show that four influencer characteristics positively influence the attitudes of new generation consumers in the digital economy era with Hwang's (2022) study found that authenticity and engagement were significant predictors of followers' positive feelings toward a brand, with followers who perceived influencers as sincere and intentional in their communication more likely to develop positive product engagement and attitudes. Kim and Lee's (2023) study further emphasized that content quality, such as clarity, accuracy of information, presentation style, and creativity, were key elements that significantly influenced consumers' evaluations of a brand. When consumers see high-quality content, they are more likely to develop liking, interest, and positive attitudes toward the brand being featured.

The findings show that the attitudes of new generation consumers have a statistically significant positive influence on purchasing decisions in the digital economy era with Zhao. (2024) ,the study topic is The Influencers' Attributes and Customer Purchase Intention. The results of attitude acts as a significant driver of purchase intention, with consumers often developing trust and positive attitudes based on their perception of an influencer's credibility, which then translates into actual purchase behavior.

The findings suggest that influencer characteristics not only directly influence purchase decisions, but also significantly influence consumer attitudes toward brands, a key variable in building trust, preference, and motivation to purchase products in the digital economy with Al.,et al. (2023) the study topic is the effect of social media influencers on purchase intention : The mediating role of attitude the results of all influencer characteristics have a positive influence on attitude, brand attitude has a significant influence on purchase intention. Further, model testing using mediation analysis indicates that attitude is a very significant mediating variable, with the indirect effects of each influencer variable through attitude all being statistically significant, which is consistent with the concept of consumer behavior on digital media.

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ENHANCING CREATIVE VALUE THROUGH DIGITAL MARKETING STRATEGIES: APPLYING CONTENT MARKETING FOR THE SUSTAINABILITY OF HANDMADE TONKLA ACHIAP COMMUNITY ENTERPRISE IN PHO CHON KAI, BANG RACHAN, SING BURI PROVINCE

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ABSTRACT

This Research use a mixed-method approach with three main objectives: 1) to study the current situation and digital marketing approaches for community enterprise products in Sing Buri Province; 2) to enhance entrepreneurs' capacity to effectively conduct business in digital markets through the use of Content Marketing and digital marketing tools; and 3) to propose sustainable marketing strategies for community enterprises. The target group was entrepreneurs from the Handmade Tonkla Achiap Community Enterprise in Pho Chon Kai, Bang Rachan District, Sing Buri Province, selected via quota sampling. Key outputs include a suitable Content Marketing model and an innovative process for sustainable digital marketing.

The findings revealed that entrepreneurs in Sing Buri Province attach high importance to entering digital markets, with an overall mean score of 4.2 out of 5 and a standard deviation of approximately 0.5. This reflects the urgent need to develop digital marketing knowledge, build trust, and foster customer loyalty in the digital era. This research, therefore, serves as a crucial mechanism to support community entrepreneurs in effectively and sustainably participating in digital markets, thereby strengthening their competitiveness and contributing to the long-term economic development of both the community and the province.

Keywords: Digital Marketing, Content Marketing, Community Enterprise, Sustainability

INTRODUCTION

Sing Buri Province possesses high agricultural potential, with over 45.46% of its population engaged in this sector. The fertile lowlands and efficient irrigation systems result in high-quality agricultural produce suitable for processing. Furthermore, its proximity to Bangkok (approximately 150 km) provides a logistical advantage for transporting fresh agricultural products.

Despite this high production potential, most community enterprise entrepreneurs face challenges in accessing and utilizing the digital market effectively (Soonthornpipit et al, 2019). Surveys indicate that entrepreneurs lack the knowledge and skills to consistently and systematically apply digital marketing technologies and innovations. Although government agencies offer regular training, the

outcomes are often unsustainable due to the lack of consistent digital marketing strategies and close follow-up.

Community enterprises in Sing Buri, particularly those focusing on processed and local food products, have high competitive potential. However, the absence of effective digital marketing strategies prevents them from fully creating Creative Value for their products. The research team recognized the necessity of integrating knowledge from information technology and digital marketing to develop a sustainable digital marketing process. This process focuses on using Content Marketing as the core strategy to drive Awareness, Consideration, and Conversion, following the Customer Journey concept (Loiypha, N. 2024).

This study focuses on the Handmade Tonkla Achiap Community Enterprise as a case study to develop sustainable digital marketing competitiveness. It proposes a Mentorship System combined with work monitoring to help entrepreneurs develop self-reliance in business operations, consistent with prior research confirming the critical role of mentorship in online marketing success.

OBJECTIVE

1. To study the current situation and digital marketing approaches for community enterprise products in Sing Buri Province.
2. To enhance entrepreneurs' capacity to effectively conduct business in digital markets through the use of Content Marketing and digital marketing tools.
3. To propose sustainable marketing strategies for community enterprise entrepreneurs.

Literature Review

Concepts of Community Enterprise

A Community Enterprise (Small and Micro Community Enterprise: SMCE), as defined by the Community Enterprise Promotion Act (2005), refers to a community's activity involving the production of goods, provision of services, or other operations conducted by a group of individuals with shared bonds and ways of life, who collectively engage in business to generate income and promote self-reliance for families, the community, and among communities. A core principle of community enterprise is to create product diversity for self-sufficient consumption, reduce expenses, and generate income for the community, without solely focusing on maximum profit. the development of various aspects in the area. people Community, Culture, Environment Strong and sustainable natural resources. Janmuangthai, W, Sithiwarongchai, C, Rodjam, C, Kongpan, Y. (2024).

2.2 Digital Marketing and Content Marketing

Digital Marketing involves using all digital channels to promote or market products and services, including utilizing various digital platforms to expand market reach. For community enterprises, digital marketing is a vital tool for scaling their market from local to national and international levels. Research has shown that digital marketing capability significantly mediates marketing effectiveness in community enterprises (Kraisanti et al, 2024).

Content Marketing is a strategic marketing approach focused on creating and distributing valuable, relevant, and consistent content to attract and retain a clearly defined audience, ultimately driving profitable customer action. In this study, Content Marketing is applied to build Awareness and

guide customers through the purchasing decision process (Customer Journey). Studies confirm that content marketing positively affects the decision to purchase OTOP products.

METHODOLOGY

Population and Sample

The sample for this study consisted of entrepreneurs from the Handmade Tonkla Achiap Community Enterprise in Pho Chon Kai, Bang Rachan District, Sing Buri Province. A purposive sampling and quota sampling method was used, selecting entrepreneurs who expressed interest in developing or improving their existing online marketing practices.

Research Instruments

The main instruments used in the research included: 1. Questionnaire: Used to assess the need for digital marketing and evaluate the results of capacity development. A 5-point Likert Scale was employed for measurement. 2. Workshop Package: Contained content on digital marketing, Digital Media Planning, creating Content Marketing aligned with the Customer Journey (Awareness, Consideration, Conversion, Retention, Advocacy), and the use of various digital tools. This participatory learning approach is crucial for developing digital strategies.

Data Collection and Analysis

Data collection was conducted between October 2024 and September 2025, divided into three main stages: initial situation survey, workshop and capacity development, and post-development evaluation. The collected data were analyzed using Descriptive Statistics, specifically the mean ($\bar{x}$) and standard deviation (S.D.), to summarize the assessment of needs and satisfaction.

Tools Used in the Research Process

This article employed artificial intelligence tools to assist in language refinement and to suggest initial ideas for content development. However, the authors independently reviewed, revised, and determined all academic interpretations and conclusions.

RESULTS

The analysis of digital marketing needs for processed agricultural products among community enterprise entrepreneurs in Sing Buri Province showed that, overall, entrepreneurs attached a High level of importance to entering the digital market, with an overall mean score of $\bar{x} = 4.2$ and a standard deviation of $S.D. = 0.5$.

A detailed breakdown by aspect revealed that the highest priority for entrepreneurs was Learning and Understanding the Digital Market ($\bar{x} = 4.23$), followed by Building Customer Loyalty ($\bar{x} = 4.22$), and Analyzing Target Markets ($\bar{x} = 4.20$), respectively. This analysis indicates that entrepreneurs recognize the necessity of developing foundational digital knowledge and prioritize building long-term relationships with customers, which is a key component of sustainable economic development. From Table 1.

Table 1
Summary of Digital Marketing Needs Assessment for Community Enterprise Entrepreneurs

No.	Aspect of Needs Assessment	Mean ($\bar{X}$)	Standard Deviation (S.D.)	Level of Importance
1	Learning and Understanding the Digital Market	4.23	0.48	High
2	Building Customer Loyalty	4.22	0.51	High
3	Analyzing Target Markets	4.20	0.50	High
4	Selecting Appropriate Digital Platforms	4.18	0.52	High
5	Creating Engaging Content	4.15	0.55	High
6	Product Promotion	4.13	0.54	High
7	Performance Measurement and Evaluation	4.10	0.56	High
8	Enhancing Efficiency with SEO Techniques	4.05	0.58	High
Overall	Overall Digital Marketing Needs	4.20	0.50	High

CONCLUSION AND DUSCYSSION

Conclusion

This research successfully developed the capacity of the Handmade Tonkla Achiap Community Enterprise entrepreneurs to effectively enter the digital market through Content Marketing strategies. Key conclusions are: 1. Needs Situation: Entrepreneurs demonstrated a high level of awareness and importance regarding digital marketing (Mean 4.2), with urgent needs in foundational digital market knowledge and customer loyalty building. 2. Capacity Development: Practical workshops focusing on Content Marketing and Digital Media Planning effectively developed entrepreneurs' skills, especially in creating content aligned with the Customer Journey. 3. Sustainable Approach: A sustainable marketing guideline was proposed, emphasizing the integration of information technology and digital marketing knowledge into community operations, with a Mentorship System as a crucial mechanism for continuous follow-up and consultation.

Discussion

The findings align with the concept that digital marketing is a vital tool for upgrading community enterprises, particularly Content Marketing, which enables Handmade products to communicate their story (Storytelling) and create creative value. The entrepreneurs' prioritization of digital market learning and customer loyalty building reflects a focus not merely on short-term sales but on establishing long-term relationships with digital customers, which is the core of business sustainability.

Furthermore, the research's emphasis on practical capacity development and a Mentorship System confirms the necessity of continuous support mechanisms post-training. This ensures that entrepreneurs can genuinely apply the knowledge and achieve sustainable results, a point previously highlighted in related research.

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**DEVELOPMENT OF AN OPERATIONAL MANUAL FOR MONITORING
AND EVALUATING PLAN IMPLEMENTATION, OFFICE OF ACADEMIC
RESOURCES AND INFORMATION TECHNOLOGY, SUAN SUNANDHA
RAJABHAT UNIVERSITY, FISCAL YEAR 2025**

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ABSTRACT

This study aimed to explore the design and development of an operational manual for monitoring and evaluating the implementation of the action plan at the Office of Academic Resources and Information Technology, Suan Sunandha Rajabhat University. The manual serves as a systematic guideline to standardize operational procedures, facilitate monitoring and evaluation processes, and enhance the efficiency of annual performance tracking within the office.

The research employed a descriptive research methodology. The study population comprised five officers from the Planning and Quality Assurance Division. Data were collected through document analysis and operational record forms and were analyzed and synthesized to develop a comprehensive and accurate operational manual aligned with the office's missions.

The results revealed that the developed manual enables staff members to perform tasks in a standardized and unified manner, reducing confusion and errors in work procedures. Personnel can substitute for one another effectively, and new employees can quickly learn and perform their duties correctly. The manual also reduces non-systematic errors and enhances the efficiency of the monitoring and evaluation process, ensuring alignment with the university's strategic directions.

Keywords: Operational manual, Monitoring and evaluation, Action plan, Office of Academic Resources and Information Technology.

INTRODUCTION

Development of an operational manual for monitoring and evaluating plane implementation, Office of Academic Resources and Information Technology. Aims to serve as a unified guideline for staff members. This manual facilitates operational linkages, ensuring convenience, speed, accuracy, and efficiency in workflow implementation, adhering to the framework of the university's monitoring, inspection, and evaluation operational guidelines.

In this regard, the preparation of a Work Manual is essential for the Office of Academic Resources and Information Technology. It provides clear procedural guidance for handling various documents, enhances convenience, and significantly reduces errors, discrepancies in interpretation, and procedural inconsistencies. The manual also clarifies operational steps, decreases the likelihood of mistakes caused by incomplete recollection, and minimizes redundancy. Moreover, it serves as an effective tool for training new staff, enabling rapid and accurate knowledge transfer without the need to restart the training process each time a new employee joins. It also helps maintain continuity of work when staff members resign or are absent, as the manual allows others to immediately continue their tasks. Additionally, it acts as an instrument for inspection and evaluation, providing criteria for assessing whether work is performed correctly and efficiently. Therefore, establishing a systematic operating process while reducing reliance on individual tacit knowledge is crucial.

In the absence of an operational manual, several problems may arise. Work may lack clear direction, as staff may employ differing methods, leading to inconsistencies. Frequent errors may occur when procedures are unclear, and employees may unintentionally perform tasks incorrectly. New staff may require longer training periods, relying on verbal instructions that may be incomplete or inaccurate. Ambiguity in work procedures also undermines accountability, making performance evaluation difficult. Furthermore, workflow disruptions may occur when personnel are absent, as others may be unable to continue the work without a proper reference document. PDCA (Plan-Do-Check-Act) as an Effective Tool for Governance Development

The PDCA cycle is one of the most effective tools used to enhance governance, which is a key principle of good management. Chanwichian, J. (2024).

At present, rapid advancements in information and communication technology have prompted Suan Sunandha Rajabhat University to emphasize the integration of digital technologies into operational processes. The university employs the ERP system and the e-office system for document management, in alignment with its policy to enhance convenience, speed, cost-efficiency, and resource optimization. These systems support effective data recording and storage, allow rapid search and retrieval of information, and enable digital linkage across relevant units. Personnel can work anytime and anywhere, thereby enhancing their capabilities and operational standards consistent with the framework of modern public administration.

Given the aforementioned background and significance, the Planning and Quality Assurance Division of the Office of Academic Resources and Information Technology has undertaken the development of an operational manual for monitoring and evaluating performance according to the administrative action plan. This manual serves as a common operational guideline, promotes information integration throughout the workflow, and ensures convenient, rapid, accurate, and efficient operations, adhering to the university's monitoring and evaluation procedures.

As the Office of Academic Resources and Information Technology forms an integral part of the structural framework of Suan Sunandha Rajabhat University, it is necessary to prepare an operational manual for monitoring and evaluating performance according to the annual administrative and operational plans. This enables personnel to follow standardized guidelines and supports the continuous development of the monitoring and evaluation process within the Office of Academic Resources and Information Technology, Suan Sunandha Rajabhat University.

OBJECTIVE

1. To study the structure and approach for developing an operational manual for monitoring and evaluating the implementation of the action plan at the Office of Academic Resources and Information Technology.

2. To develop a practical operational manual that enhances systematic work performance, ensures standardization, and reduces operational errors.

3. To assess the effectiveness and benefits of the developed manual in improving the quality and performance of the office's operations.

Conceptual Framework

The monitoring, inspection, and performance evaluation guidelines presented in this manual are based on the *Monitoring, Inspection, and Performance Evaluation Manual of Suan Sunandha Rajabhat University for the Fiscal Years 2025-2026*.

The monitoring, inspection, and evaluation of performance involve the following key components:

1. Evaluation Components
2. Performance According to Institutional Missions
3. Performance in Alignment with the Annual Administrative Action Plan
4. Organizational Development and Managerial Operations
5. Production and Development of Professional Personnel and Specialized Fields
6. Organizational Leadership and Governance Based on Good Governance Principles

the Monitoring, Inspection, and Performance Evaluation Guidelines of Suan Sunandha Rajabhat University for the Fiscal Years 2025-2026.

METHODOLOGY

Performance of duties under the framework for monitoring and evaluating annual operational plans requires a sound understanding of relevant criteria, methods, and operational guidelines. This knowledge must be applied effectively in practice to achieve successful outcomes. Quality tools, in accordance with the Monitoring and Evaluation Guidelines for the Fiscal Year 2025, as well as related documents, support this process.

Population Group

The population in this study consists of staff members of the Office of Academic Resources and Information Technology, Planning and Quality Assurance Division, totaling five personnel.

Research Methodology

The study employed document analysis as the primary method of data collection, drawing on operational documents such as the Strategic Plan, the Annual Administrative Action Plan for Fiscal Year 2025 (October 2024 – August 2025), and relevant administrative documents of the Office of Academic Resources and Information Technology, Suan Sunandha Rajabhat University.

This study applied a descriptive research design consisting of the following steps:

1. Preliminary Study

Relevant documents, policies, and existing monitoring and evaluation guidelines of the university were reviewed to understand current systems and procedures.

2.Data Collection

Data were collected from five officers of the Planning and Quality Assurance Division through questionnaires, operational record forms, and related documents.

3.Data Analysis and Synthesis

Descriptive analysis was used to summarize existing problems, challenges, and recommendations from staff members.

4.Manual Development

The operational manual for monitoring and evaluation of action plan implementation was developed by defining clear procedures, methods, tools, and templates.

5.Verification and Evaluation

The developed manual was tested by staff to evaluate its appropriateness, clarity, and practicality for actual implementation.

The content is organized into four key areas:

- Objectives of monitoring and evaluation
- Monitoring and evaluation methods
- \Calculation of evaluation results
- Definitions of terms used in the evaluation
- The monitoring framework covers eight operational areas as follows:
- Monitoring and Evaluation of Administrative Performance (KPI/GPF)
- Planning and Budgeting
- Annual Agenda Projects
- Knowledge Management (KM)
- Risk Management
- Monitoring and Evaluation of Administrative Performance (KPI/GPF)
- Educational Quality Development (EdPEX)
- Projects under the operational plan

Scope of the Study

Office of Academic Resources and Information Technology, Suan Sunandha Rajabhat University 1 U-Thong Nok Road, Dusit District, Bangkok 10300, Thailand

Study Period

October 2024 – August 2025

Data Analysis

The study utilized focus group discussions with the Planning and Quality Assurance Division to establish operational guidelines for monitoring and evaluating performance under the annual operational plan. The purpose is to support personnel in improving the quality of monitoring and evaluation processes to ensure alignment with established goals and objectives.

Objectives of administrative performance evaluation:

To assess the outcomes of administrative operations compared to predetermined targets, particularly focusing on outputs and outcomes. The evaluation process includes the following components:

Monitoring of operational performance:

The Office of Academic Resources and Information Technology, requires all units to report monthly progress on the implementation of various operational plans. Each unit must record performance results and supporting evidence in the Performance Monitoring and Evaluation System (www.erp.ssrु.ac.th) every month.

Additionally, units are required to prepare formal performance reports according to the prescribed formats for both the 6-month and 12-month reporting periods. All reports must be submitted within the timeframe established by the university upon completion of each month's operational cycle.

1) Evaluation

(1) Review of Information and Documentation

This includes the examination of documents and evidence such as:

- ☐ Annual performance reports based on the operational plan
- ☐ Supporting documents and evidence, including meeting minutes, appointment orders of working committees, approved operational plans, and photographs

(2) Recording of Data in Unit Operational Record Forms

This involves documenting information related to:

- ☐ The storage and maintenance of documents/data
- ☐ The involvement of senior management in the unit
- ☐ Database systems, which must take into account several key factors:

Accuracy:

- ☐ Use of standardized forms and clearly assigned officers responsible for reviewing data before and after storage
- ☐ Officers responsible for verifying information with data owners on a monthly basis

Credibility:

- ☐ Clearly identifiable data sources
- ☐ Ability to verify information with the originating unit
- ☐ Systematic data storage with assigned responsible officers

Timeliness:

- Frequency of updating information in the database whenever changes occur

Auditability:

- The higher education institution must be prepared to allow authorized committees, government agencies, private sectors, and the public to examine the information at any time
- Stakeholders must be able to access and review the data

2) Calculation of Evaluation Results

The evaluation of administrative performance based on the performance agreement uses different calculation methods according to the nature of each indicator. Results are categorized into scoring levels, with details and examples provided as follows:

RESULTS

The study found that:

1. The developed operational manual provides a systematic and clear process for monitoring and evaluating the action plan, including step-by-step procedures from planning, data collection, reporting, to evaluation summarization.
2. Personnel share a consistent understanding of work procedures and can substitute for one another without confusion.
3. Implementation of the manual reduces working time, increases operational efficiency, and minimizes non-systematic errors.
4. New personnel can easily learn and begin performing their duties correctly using the manual as a guide.
5. The monitoring and evaluation system now better aligns with the university's strategies and key performance indicators (KPIs), leading to improved quality and effectiveness of the office's overall operations.

CONCLUSION AND FUTURE WORK

1. The developed operational manual should be implemented across all divisions within the Office of Academic Resources and Information Technology to establish a unified operational standard.
2. Training and orientation sessions should be provided for all staff levels to ensure proper understanding and application of the manual.
3. The manual should be reviewed and updated annually to reflect policy changes and the evolving strategies of the university.
4. Future research should evaluate the long-term outcomes of using the manual by measuring quantitative indicators such as task completion time, user satisfaction, and performance quality.

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INNOVATIVE MARKETING AND PRODUCT DEVELOPMENT FOR ENHANCING COMMUNITY ENTERPRISE COMPETITIVENESS

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ABSTRACT

This research aimed to develop innovative marketing and product strategies for agricultural community enterprises to enhance their competitiveness in the commercial market. The objectives were to: 1) analyze internal organizational environments, stakeholder needs, and the components of integrated participation in innovation development and 2) design a practical innovation framework for marketing and product development tailored to local community contexts.

The study involved 250 participants, including community leaders, agricultural entrepreneurs, trainees, and experts. Mixed methods were employed, combining qualitative and quantitative data collection through interviews, questionnaires, and evaluation forms. Instrument validation showed strong reliability and content validity (IOC = 0.85-0.92, Cronbach's Alpha = 0.87-0.90, KR-20 = 0.82).

Key findings revealed that: 1) while community enterprises demonstrate readiness to engage in innovation, they still lack structured strategies for value creation; 2) the developed framework was validated by experts as comprehensive, adaptable, and contextually relevant; and 3) its implementation led to significant improvements in participant knowledge, skills, and satisfaction. These results confirm that innovation-driven marketing and product development can sustainably enhance the competitiveness of Thai community enterprises in the modern commercial landscape.

Keywords: community enterprise, innovative marketing, product development, commercial competitiveness, agricultural innovation

INTRODUCTION

In the evolving landscape of local economic development, community enterprises have become key drivers of grassroots innovation and inclusive growth, particularly within agricultural sectors. These enterprises not only contribute to income distribution and local employment but also preserve indigenous knowledge and foster self-reliance. Despite their potential, many community enterprises continue to face challenges in achieving sustainable competitiveness in commercial markets, primarily due to limited innovation capacity and a lack of systematic marketing strategies (Rattanaphon, 2020). The shift in consumer behavior toward convenience, credibility, and sustainability further pressures these enterprises

to adapt through innovation-driven approaches, particularly in marketing and product development (Thanaporn, 2022).

Agricultural community enterprises in rural Thailand, such as those in Bang Khonthi District of Samut Songkhram Province, possess unique cultural and ecological resources. However, their reliance on traditional distribution channels and outdated marketing models has restricted their market reach and ability to add value to their products (Kritsada, 2021). To transition from subsistence-based operations to competitive commercial players, these enterprises must embrace innovation not merely as a technological tool but as a strategic process embedded within product design, branding, and market positioning (Choi & Yu, 2022; Wang, Zhang, & Li, 2024).

Recent literature emphasizes the integration of digital marketing, customer experience strategies, and sustainable packaging as essential elements for enhancing product attractiveness and market differentiation (Niederreiter & Riccaboni, 2021). In this context, innovation becomes a multidimensional construct spanning organizational learning, value co-creation, and adaptive marketing. Moreover, the role of stakeholder engagement and inter-organizational collaboration has been highlighted as a critical factor in enabling community enterprises to access knowledge, capital, and technological support (Dugoua & Dumas, 2021; Siriporn, 2022). These insights point to the need for a more structured and contextualized approach to innovation development that aligns with local realities.

This study is therefore situated at the intersection of innovation theory and community enterprise development, aiming to explore and enhance how innovative marketing and product development can serve as levers for increasing the commercial competitiveness of agricultural community enterprises. By employing a mixed-methods approach, the research seeks to create a practical innovation framework grounded in empirical data and responsive to both local challenges and global market trends. Through the design, implementation, and evaluation of a pilot model, this study intends to generate actionable insights that not only contribute to academic discourse but also offer scalable solutions for community-based economic resilience.

OBJECTIVES

1. To investigate the internal organizational environment, stakeholder needs, and the elements of integrated participation that influence the development of innovative marketing and product strategies within community enterprises.
2. To design a context-specific innovation framework for marketing and product development that aligns with the needs and capacities of agricultural community enterprises and can be practically implemented.

METHODOLOGY

1. Target Population and Sampling

This research employed a purposive sampling method to identify a diverse group of stakeholders that reflect the multidimensional nature of agricultural community enterprises in Bang Khonthi District, Samut Songkhram Province. The sample was stratified into four distinct groups. The first group consisted of 50 individuals including community leaders, enterprise presidents, active members, and key local influencers. This group was chosen to represent the structural and collaborative dynamics within the local enterprise ecosystem. The second group included 140 agricultural community

enterprise operators who actively engage in production, marketing, and micro-level management. This group provided in-depth data on operational capacity, business challenges, and developmental opportunities. (Yamane, 1967).

The third group involved 30 individuals participating in capacity-building training programs. Their inclusion allowed for evaluation of learning outcomes and the practical applicability of the innovation strategies introduced. Lastly, the fourth group comprised 30 experts from government agencies, academia, and strategic consultants. Their perspectives helped validate the strategic alignment and scalability of the innovation model. The deliberate composition of these sample groups ensured a rich dataset suitable for deep qualitative and quantitative analysis (Patton, 2015; Guest, Bunce, & Johnson, 2006; Porsiri, 2020).

2. Research Instruments

The study employed six primary instruments designed to capture both qualitative and quantitative dimensions of the research problem. First, in-depth interviews and focus group discussions were conducted with community leaders and members using a semi-structured interview guide. The instrument demonstrated strong content validity (IOC = 0.89) and was triangulated for reliability. Second, a structured questionnaire was developed to examine causal relationships among key variables using a 5-point Likert scale. The instrument achieved an IOC of 0.92 and a Cronbach's alpha coefficient of 0.87, indicating high reliability.

Third, a pre- and post-training test was utilized to measure knowledge acquisition among training participants, with an IOC of 0.85 and a KR-20 reliability coefficient of 0.82. Fourth, a satisfaction survey evaluated participant perceptions toward content, methodology, and trainers. This instrument yielded an IOC of 0.88 and reliability of 0.90. Fifth, an expert evaluation form was used to assess the appropriateness and usefulness of the developed innovation model, with an IOC of 0.91 and reliability of 0.89. Lastly, a semi-structured expert interview protocol was deployed to gather additional qualitative insights, supported by triangulation methods for validation.

3. Data Collection Procedures

The study adopted a mixed-methods approach to ensure a comprehensive and multi-perspective understanding of the research objectives. Qualitative data were collected through in-depth interviews and focus groups with community stakeholders and experts. The use of semi-structured interview guides allowed for flexibility while ensuring alignment with research themes. Data were validated through source triangulation to ensure credibility.

Quantitative data were collected through three structured questionnaires: (1) a causal path analysis instrument; (2) pre- and post-training knowledge assessments; and (3) a satisfaction evaluation form. All instruments underwent quality testing, including content validity using IOC and internal consistency using Cronbach's alpha and KR-20. Additionally, the pilot innovation model was evaluated using both an expert review questionnaire and in-depth expert interviews to enhance interpretation and contextual fit. Ethical standards were upheld throughout the data collection process to ensure participant safety, voluntary consent, and academic integrity.

4. Data Analysis

The data were analyzed using three complementary techniques. First, descriptive statistical analysis was applied to summarize demographic data and general characteristics of the sample. This

included frequency distributions, means, and standard deviations, which served to contextualize participant backgrounds and behavioral profiles (Boonchom, 2017; Porsiri, 2020).

Second, inferential statistics were used to test research hypotheses and analyze relationships among variables. Structural Equation Modeling (SEM) was employed to examine both latent and observed variables, offering a robust method for testing model fit and causal pathways. Additionally, the quality of measurement instruments was confirmed through content validity indices and reliability coefficients (Hair, Black, Babin, & Anderson, 2017). A paired sample t-test was conducted to compare pre- and post-training scores, aiming to assess the effectiveness of the innovation framework in improving marketing and distribution capabilities (Patton, 2015; Guest et al., 2006).

Third, qualitative data were analyzed using thematic content analysis. The method emphasized thematic coding, interpretation, and categorization of key ideas and patterns. This technique was especially useful for synthesizing rich narrative data obtained through interviews and discussions. It complemented the quantitative findings by offering nuanced insights into community readiness, innovation acceptance, and local adaptation strategies.

RESULTS

1. Findings on Organizational Environment, Development Needs, and Integrated Participation (Objective 1) The first phase of the research involved a comprehensive investigation into the internal and external environment of agricultural community enterprises, focusing on their current capabilities, developmental needs, and mechanisms of participatory engagement. This phase was conducted in three sub-components: qualitative data gathered from focus group discussions, quantitative data collected through structured questionnaires, and a comparative analysis integrating both data sets to inform the design of an innovation capacity development model.

1.1 Qualitative Insights from Focus Group Discussions The focus group data were analyzed using content analysis techniques, emphasizing key terms, recurring themes, and participant perspectives. The analysis revealed three central dimensions of integrated participation: product development, sustainable production, and product innovation. Table 1 presents these dimensions alongside core factors and illustrative practices.

Table 1

Dimensions of Integrated Participation in Community-Based Innovation

Participation Dimension	Key Factors:	Illustrative Practices and Examples
Product Development	Marketing and Distribution Channels	- Utilizing online marketplaces (Shopee, Lazada, Facebook) - Promoting via social media - Storytelling in branding - Using community name as brand

Participation Dimension	Key Factors:	Illustrative Practices and Examples
		• Quality certification • Participating in trade fairs
Sustainable Production	Resource and Environmental	• Using renewable energy • Implementing green technology • Maintaining quality control • Applying circular economy principles • Designing life-cycle-based products
Product Innovation	Market Access and Branding	• Expanding distribution channels (online, direct, exhibitions) • Using content marketing and social media • Building brands based on local identity • Creating product narratives • Ensuring product quality certification

The analysis indicates that community enterprises have developed systematic approaches to product development and market access. These include the strategic use of digital platforms, such as online marketplaces and social media, to increase product visibility and outreach. Branding initiatives anchored in local identity and storytelling have further enhanced product differentiation and consumer engagement.

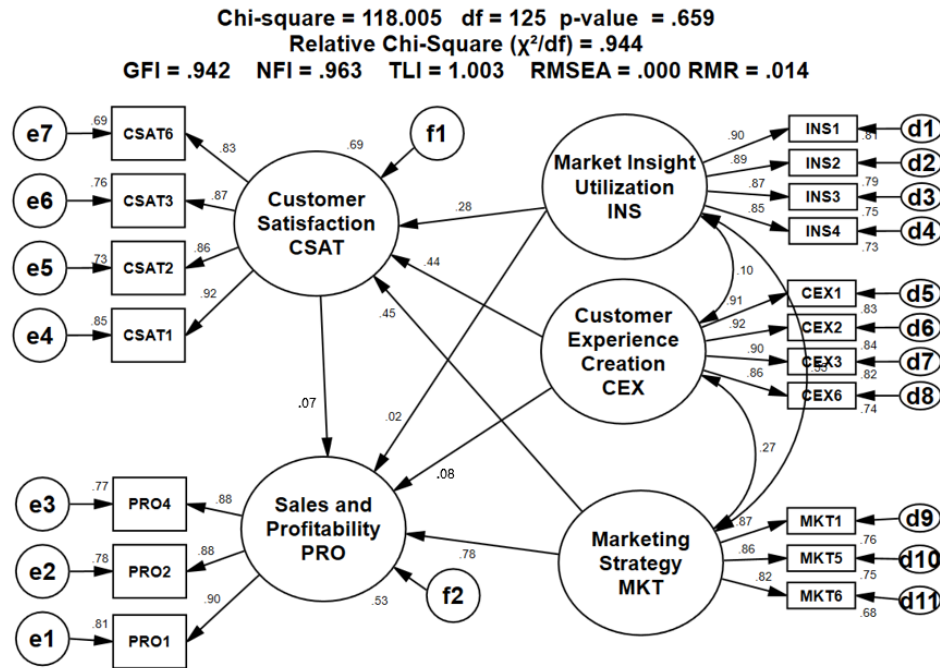
Additionally, the findings highlight a strong emphasis on sustainable production practices. Community enterprises have adopted environmentally conscious methods, including renewable energy, green technologies, and circular economy principles. These efforts reflect both an awareness of environmental responsibility and a strategic orientation toward long-term competitiveness.

Furthermore, product innovation is increasingly recognized as a critical factor in market expansion. Enterprises are employing creative marketing techniques and brand development strategies that align with emerging consumer preferences and industry trends. Collectively, these efforts demonstrate the adaptive capacity of community enterprises and their potential to compete in the commercial market sustainably and effectively.

1.2 Quantitative Data Analysis: Structural Equation Modeling (SEM) The structural equation modeling (SEM) analysis was conducted to evaluate the causal relationships among key variables in the proposed innovation framework for enhancing community enterprise competitiveness. Prior to analysis, data assumptions were thoroughly tested. The sample size of 140 respondents was deemed sufficient for SEM, and preliminary tests confirmed that data distribution met the assumptions of normality, with skewness and kurtosis values for all observed variables falling within the acceptable range of ± 2 .

Figure 1

Structural Equation Model (SEM) illustrating the causal relationships among marketing strategy, customer experience, customer satisfaction, market insights, and profitability of community enterprises



The model fit indices indicated that the proposed model achieved an excellent level of goodness-of-fit with the empirical data. The model yielded the following fit statistics: $\chi^2 = 118.005$, degrees of freedom (df) = 125, p-value = 0.659, Root Mean Square Error of Approximation (RMSEA) = 0.000, and Tucker-Lewis Index (TLI) = 1.003. These values demonstrate a high degree of alignment between the hypothesized structural relationships and the observed data.

The analysis revealed that marketing strategies (MKT) had the strongest direct influence on profitability (PRO), with a standardized path coefficient of 0.53. This underscores the critical role of strategic marketing in driving financial outcomes for community enterprises. The next most significant factors were customer satisfaction (CSAT) and customer experience (CEX), both with coefficients of 0.44, suggesting that improving user engagement and perceived service quality contributes meaningfully to financial performance.

In contrast, insight-driven marketing data (INS) had a minimal impact on profitability (coefficient = 0.02), indicating that the use of in-depth market intelligence has not yet translated into measurable financial results within this context. This may reflect limitations in data literacy or implementation mechanisms among community enterprises, and points to an area of potential development.

Overall, the SEM model supports the premise that innovation-driven marketing particularly in terms of strategic planning and experiential engagement plays a pivotal role in strengthening the commercial capacity of agricultural community enterprises. These findings validate the focus on

marketing innovation as a cornerstone of sustainable enterprise competitiveness in emerging rural economies.

2. Evaluation of the Prototype Development Approach (Objective 2)

The second phase of this study focused on validating the applicability and contextual relevance of the proposed innovation framework through the development and assessment of a prototype product. The selected case was a skincare cream formulated from three types of mushrooms (Origin of selected products from the Creative Mushroom Community Enterprise Bang Bang District, Samut Songkhram Province), designed in alignment with local agricultural resources and community knowledge systems. The objective was to ensure that the prototype reflects not only technical feasibility but also market alignment and potential for commercial scalability.

Expert evaluations confirmed that the developed model was both adaptable and practical across diverse community settings. The prototype was assessed using both quantitative scoring and qualitative feedback, covering four core criteria: correctness, appropriateness, feasibility, and usefulness. Table 2 presents a synthesis of these assessments.

Table 2

Expert Evaluation Summary of the Prototype Product: "Skincare Cream from Three Mushroom Species"

Evaluation Criterion	Quantitative Assessment (Mean $\pm$ SD)	Qualitative Feedback
1. Correctness	4.66 $\pm$ 0.424 (Very High)	The formula and cream texture align well with natural skincare principles. Experts noted the product is technically sound and recommended providing examples of quality testing to reinforce credibility.
2. Appropriateness	4.54 $\pm$ 0.423 (High)	The product is deemed suitable for the target users' skin type and usage needs. Suggestions included adjusting scent and texture to suit the local climate and conducting real-use testing with target consumers.
3. Feasibility	4.40 $\pm$ 0.442 (High)	The prototype can be reproduced and sourced locally. Experts advised preparing a backup raw material plan and establishing internal quality control within the production group.
4. Usefulness	4.66 $\pm$ 0.410 (Very High)	The product enhances skin hydration and offers value for quality. Experts encouraged long-term use monitoring and extending the product line to related skincare items.

The expert panel's assessment indicated strong approval across all dimensions, with the highest mean scores in the areas of correctness and usefulness (4.66). This highlights the prototype's scientific

soundness and consumer relevance. The remaining dimensions—appropriateness and feasibility—also received high average scores (4.54 and 4.40 respectively), reflecting the product's practical potential in local markets.

Qualitative feedback further supported the quantitative ratings and offered recommendations for improvement. These included aligning the product's sensory features with the environmental context and preparing for sustainable raw material management. Additionally, experts emphasized the importance of tracking user satisfaction over time and developing a broader product line to strengthen market competitiveness.

The results affirm that the prototype skincare product, developed through the community-driven innovation framework, demonstrates both credibility and commercial viability. This suggests that the innovation pathway employed in this study is not only academically robust but also applicable for real-world implementation, contributing to the sustainable enhancement of competitiveness among agricultural community enterprises.

DISCUSSION

1. Organizational Readiness and the Role of Integrated Participation The findings reveal that agricultural community enterprises in Bang Khonthi District possess a considerable degree of awareness regarding the importance of product development and market responsiveness. Many enterprises have demonstrated the ability to adapt by leveraging internal organizational resources, including personnel, basic technology, and internal management systems. These attributes function as foundational mechanisms in building competitiveness. However, the research also identified significant limitations in systematically applying innovation and in creating value-added products that directly align with evolving market demands. This observation emphasizes the need for targeted skill development, organizational knowledge management, and the cultivation of a learning-oriented culture that facilitates sustained innovation.

These insights are consistent with the Resource-Based View (RBV), which posits that internal capabilities and resource control play a pivotal role in creating sustainable competitive advantage in line with the concept of Chittisuwan (2021). RBV suggests that strategic value arises from leveraging inimitable internal assets such as innovation capability, tacit knowledge, and adaptive organizational culture in line with the concept of Beamish & Chakravarty (2021). Furthermore, in line with the concept of Dugoua and Dumas (2021) emphasize that small enterprises operating in volatile environments must integrate technological applications with human resource development and institutional learning to remain competitive.

2. Innovation Framework Grounded in Community-Based Insights The development of the innovation framework in this study was based on empirical data gathered through a mixed-methods approach, blending community insights with expert validation. This framework integrates core marketing principles, innovation strategies, and community-specific product design. Importantly, the model encourages optimal utilization of local resources while establishing strategic links with external stakeholders such as academic institutions, government agencies, and the private sector. Such connections are essential in constructing a localized innovation ecosystem capable of supporting long-term product development and commercialization.

The applicability of this model across various community contexts, particularly in the domain of agricultural value-added products, demonstrates its scalability. This supports prior studies in line with

the concept of Sutticharoen and Phuwanat (2022) and Chumpon Rodjam, Panyada Chantakit, Eakolarn Chotianusorn and Preecha Panoram. (2022: 160-168), which stress the need for innovation across the entire value chain from design and production to branding and distribution. Similarly, in line with the concept of Wang, Zhang, and Li (2024), along in line with the concept of Choi and Yu (2022); Rodjam, C., Chanthakit, P., Chotianusorn, E., Janmuangthai, W., Woraphong S. and Czarnecki, D. (2024: 3096-3104) and Tawatchai Suphuan. (2022: 1-11) underscore that successful commercialization requires comprehensive strategies encompassing product positioning, appropriate distribution channels, and collaborative strategic partnerships. Thus, the proposed framework serves as a practical prototype for strengthening the innovation capacity of rural enterprises facing complex market conditions.

Recommendations

1. Recommendations for Practical Application

1.1 The proposed framework should be adapted and pilot-tested in different communities based on their local resources, skills, and market conditions.

1.2 Multi-sectoral support networks involving government, private, and academic actors should be established to promote sustainable, inclusive innovation systems.

2. Recommendations for Future Research

2.1 Future studies should explore specific product categories such as health, herbal, and organic goods to develop targeted innovation strategies.

2.2 Localized tools for assessing enterprise capacity and product quality should be created to guide decision-making at the community level effectively.

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SUSTAINABLE WATER MANAGEMENT BY LOCAL GOVERNMENT ORGANIZATIONS: A CASE STUDY OF KOH LARN, CHONBURI PROVINCE

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ABSTRACT

Koh Larn, a small island under Pattaya City in Chonburi Province, faces long-standing water scarcity due to rapid tourism growth, limited natural freshwater sources, and dependence on water transported from the mainland. This research aims to examine sustainable water management practices implemented by local government organizations (LGOs), focusing on governance structures, infrastructure development, environmental considerations, and community participation. A qualitative methodology— including interviews, field observations, and document analysis— was utilized to investigate the challenges and effectiveness of current water management policies. Findings demonstrate three major components: (1) the need for integrated governance and long-term planning; (2) the urgency to upgrade water infrastructure, particularly desalination capacity and distribution networks; and (3) the importance of community involvement in water conservation initiatives. This study presents a sustainable water management model suited for island communities, contributing to enhanced water security and resilience for local development.

Keywords: Sustainable water management, Desalination, Koh Larn, Local government, Water governance, Tourism impact

INTRODUCTION

Water scarcity is a critical issue affecting coastal and island communities globally, particularly those with limited freshwater sources and intensive tourism activities. Koh Larn, located approximately 7 kilometers from Pattaya City, is one of Thailand's most visited island destinations, welcoming millions of tourists annually. While tourism drives economic growth, it simultaneously places heavy pressure on the island's water supply. Koh Larn lacks natural freshwater storage and therefore depends almost entirely on transported freshwater and limited desalination production. These conditions make sustainable water management essential for long-term community welfare.

Local government organizations (LGOs) in Thailand, particularly Pattaya City Municipality, play a central role in planning, regulating, and providing water-related services on Koh Larn. Similar to other island destinations worldwide, water scarcity affects not only environmental sustainability but also public health, economic stability, and community resilience (Smith & Puczkó, 2014).

This study examines how LGOs implement water management strategies, identifies challenges in governance and infrastructure, and proposes sustainable solutions tailored to island environments. The research contributes to broader discussions on local governance, tourism impacts, and sustainable resource management in Southeast Asia.

The six existing strategies under the 12-year Water Resources Management Strategy have been revised by adding new strategies that lead to more comprehensive action plans. These enhancements allow for better alignment with the 20-year National Strategy. Examples include the development of standardized and affordable drinking water, increasing water-use productivity, improving water drainage efficiency, mitigating basin-level flooding, restoring rivers and canals, preventing and reducing soil erosion in watershed forest areas, and developing watershed land-use plans. The revised strategies were submitted to the Cabinet and approved on 18 June 2019, and subsequently published in the Royal Gazette on 18 September 2019. (20-Year Master Plan for Water Resources Management (2018–2037).

The key components of the 20-Year Master Plan for Water Resources Management (2018–2037) consist of six strategic areas:

1. Water supply management for consumption and domestic use
2. Strengthening water security for the production sector
3. Flood and disaster management
4. Water quality management and water resource conservation
5. Conservation and rehabilitation of degraded watershed forests and prevention of soil erosion
6. Water management and governance

Management refers to a systematic process aimed at achieving organizational goals through planning, directing, and controlling operations. While administration emphasizes policy formulation and strategic planning, management focuses on implementing these policies and plans in practice. The management process encompasses planning, organizational structuring, human resource allocation, leadership, and control to ensure effective operations.

Moreover, management is regarded as both a science and an art. The theories, principles, and knowledge applied in managerial practices represent the scientific aspect, whereas the ability to effectively implement these principles, manage people, and execute tasks reflects the artistic dimension. Effective management requires integrating theoretical knowledge with practical skills, along with an understanding of the capabilities, needs, and motivations of organizational members, in order to achieve the desired goals. Boontamara, T. (2021).

Conceptual Framework and Related Literature

2.1 Sustainable Water Management

Sustainable water management refers to long-term policies and practices ensuring adequate supply and responsible water use. The Global Water Partnership (2020) emphasizes Integrated Water Resource Management (IWRM) which promotes cross-agency planning, efficient consumption, and environmental safeguards.

Approaches to water resource management should emphasize the participation of government agencies and local administrative organizations (LAOs). In terms of policy, the government must prioritize the formulation of national-level water management policies and plans, supported by clearly designated responsible agencies. Lessons can be drawn from the Netherlands, which successfully addressed severe flooding through the Delta Works project—a long-term initiative developed over more

than 40 years following the catastrophic flood of 1953. This case illustrates that sustainable water management requires long-term planning and investment in infrastructure such as dikes, storm surge barriers, and water gates, particularly in low-lying areas.

In the context of Thailand, the government should establish legal and administrative frameworks that enable relevant agencies to operate efficiently and flexibly in addressing both floods and droughts. Local administrative organizations must also play a significant role by coordinating closely with communities within their jurisdictions to support effective implementation.

Regarding administrative processes, water management initiatives should include clearly defined projects, operational procedures, tools, and timelines from initiation to completion to ensure systematic and effective management.

In terms of networking, the use of information technology systems is essential for communication, coordination, and data sharing among relevant agencies. Such systems enhance situational awareness and support systematic problem-solving, particularly in Pathum Thani Province and other interconnected areas.

2.2 The Role of Local Governments in Water Governance

Local governments are primary actors in water distribution, infrastructure investment, and enforcement of environmental regulations. Their effectiveness depends on transparency, stakeholder engagement, and adequate funding (Erfurt-Cooper & Cooper, 2009)

The water resources management organization is a crucial mechanism that enables the country's water management reform to achieve practical results rapidly. In the past, Thailand's water resources management system was fragmented, with responsibilities distributed across more than 48 agencies. This lack of unity and coordination led to overlapping functions, inefficient budget use, and disjointed problem-solving efforts, resulting in a sectoral approach where each agency operated independently rather than collaboratively.

2.3 Tourism and Water Demand on Islands

Tourism significantly increases per-capita water consumption. Studies show that tourist-heavy islands face chronic shortages without infrastructure expansion and conservation strategies (Bender et al., 2007) Koh Larn exemplifies this challenge.

2.4 Community Participation

Local engagement is essential for sustainable environmental management. According to Nonaka and Takeuchi (1995) local knowledge is a foundation for effective community-based solutions. Community enterprises play a crucial role in national economic development by stimulating local economies, creating jobs, and promoting sustainable growth. Chuwichian, P., Soonthornpipit, H., Kulawanich, A., Yoowattana, P., Pongpng, T. (2025).

2.5 Theoretical Framework

This study adopts three theoretical perspectives

1. IWRM (Integrated Water Resources Management) for integrated planning
2. for integrated planning
3. Governance Theory for institutional analysis
4. Community-Based Resource Management

Together, they guide the analysis of Koh Larn's water management system.

OBJECTIVE

1. To analyze current water management practices implemented by local government organizations on Koh Larn.
2. To identify limitations and challenges within the existing water governance framework.
3. To propose sustainable water management strategies appropriate for island environments.

METHODOLOGY

A qualitative research methodology was employed to ensure an in-depth understanding of water management practices. Data were collected using

1. Semi-structured interviews

Participants included Pattaya City officials, Koh Larn residents, business operators, and water distribution personnel.

2. Field observations

Researchers examined desalination plants, water storage tanks, and distribution systems.

3. Document analysis

Review of municipal reports, water supply records, environmental plans, and policy frameworks.

Data Analysis

Thematic analysis following Braun and Clarke (2006) was used to categorize findings into governance, infrastructure, and community participation themes.

Findings

5.1 Governance Challenges

Water governance on Koh Larn is administratively dependent on Pattaya City. Coordination gaps between departments create delays in infrastructure development. Lack of localized authority reduces responsiveness to urgent water shortages.

5.2 Infrastructure Limitations

- Freshwater is transported by barges from the mainland.
- The desalination plant produces limited output due to technical constraints.
- Storage capacity is insufficient during peak tourist seasons.
- Distribution pipes are aged and prone to leakage.

5.3 Community Participation

Residents show awareness of water scarcity, yet systematic water conservation practices are inconsistent. Local businesses use large volumes of water during peak tourism flows, increasing pressure on supply.

Discussion

The analysis reveals that water scarcity on Koh Larn is interconnected with governance limitations, infrastructure deficits, and tourism pressures. Similar to other island destinations, sustainable solutions require integrated planning, investment in desalination technologies, and strengthened community-based conservation programs (Smith & Puczkó, 2014)

Effective water governance requires empowerment of local authorities, multi-stakeholder collaboration, and stronger policy enforcement. Community education programs can shift consumption behavior and reduce demand-side pressure.

7. CASE STUDIES

Case Study 1: Desalination System Expansion

Koh Larn's desalination capacity is comparable to small-scale plants used in Mediterranean islands. However, high electricity use and maintenance costs restrict operational hours.

Case Study 2: Community Water-Saving Campaigns

Pilot campaigns in Tien Beach and Samae Beach communities show improved awareness, yet only partial adoption of conservation practices.

Case Study 3: Thailand's Integrated Coastal Resource Policy

Koh Larn's situation aligns with national coastal resource sustainable management policies, but implementation remains fragmented at the LGO level.

RESULTS

1. Koh Larn's water system remains vulnerable due to inadequate infrastructure and high tourist consumption.
2. Local government capacity must be improved for integrated water planning.

3. Community participation is essential but currently insufficient.
4. Desalination, rainwater harvesting, and smart distribution systems are viable long-term solutions.

CONCLUSION AND FUTURE WORK

The study concludes that sustainable water management in Koh Larn requires

- Strengthening local governance and planning
- Expanding desalination capacity
- Improving water infrastructure and distribution networks
- Enhancing community participation through education
- Implementing long-term IWRM-based strategies

These actions can significantly enhance the island's water security and support sustainable tourism-driven development,

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DIGITALIZING ACADEMIC GOVERNANCE FOR SUSTAINABILITY: A CONCEPTUAL FRAMEWORK FOR PAPERLESS SYSTEMS AND GREEN ENVIRONMENTAL OUTCOMES

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ABSTRACT

Urban air pollution has emerged as a critical sustainability and public health challenge in metropolitan regions such as Bangkok, where recurrent PM_{2.5} pollution episodes continue to threaten environmental quality and human well-being. While policy interventions predominantly focus on transportation and industrial emissions, institutional consumption practices, particularly paper-intensive academic governance, remain underexplored as contributory factors and mitigation opportunities. The specific objectives of this study are: 1) To examine the influence of attitudes toward paperless governance, perceived digital behavioral control, and digital trust on paperless intention in the context of public university academic governance 2) To analyze the effect of paperless intention on green environmental outcomes, particularly in terms of reducing paper consumption and promoting environmentally sustainable academic practices. 3) To develop a theoretically grounded conceptual framework that explains how behavioral determinants drive paperless intention and contribute to green environmental sustainability within higher education institutions. This conceptual paper examines paperless academic governance in public universities as a sustainability-oriented approach to fostering a green environment. Drawing on the Theory of Planned Behavior and green workplace behavior literature, the paper develops a conceptual framework that explains how attitudes toward paperless governance, perceived digital behavioral control, and digital trust influence paperless intention, which subsequently contributes to green environmental outcomes. By emphasizing the role of individual intentions enabled through digital readiness and trust, the study advances a set of theoretically grounded propositions to guide future empirical investigation. The paper contributes to sustainability in higher education by positioning paperless academic governance as a practical, institution-level strategy for promoting environmentally responsible behavior and supporting broader urban environmental sustainability efforts.

Keywords: paperless workplace; conceptual framework; sustainability in higher education; institutional theory; urban pollution; academic governance

INTRODUCTION

Urban air pollution has reached alarming levels in many Asian megacities, including Bangkok, where recurrent PM_{2.5} episodes pose serious risks to public health and environmental sustainability (United Nations, 2015; UNESCO Bangkok, 2021). While transportation and industrial emissions are frequently identified as primary contributors, institutional consumption practices—such as paper use, printing, and document processing—also contribute indirectly to urban pollution through upstream manufacturing emissions and downstream waste disposal (EPA, 2018).

Public universities represent influential institutional actors within urban environments. As large public sector organizations, universities generate substantial paper consumption through administrative and academic governance processes (Findler et al., 2019). Despite widespread digital readiness, mandatory paper-based academic procedures—particularly the requirement for postgraduate students to print multiple hard copies of theses—remain common. These practices contribute to unnecessary resource consumption, energy use, and pollution, contradicting universities' stated sustainability commitments (Lozano et al., 2015; UNESCO, 2020).

This conceptual paper argues that transitioning toward paperless academic governance constitutes a practical, low-cost, and scalable sustainability intervention. Rather than focusing solely on individual behavior, the paper emphasizes the role of institutional rules, legitimacy, and governance structures in shaping environmental outcomes (DiMaggio & Powell, 1983; Scott, 2014). By developing a conceptual framework and propositions, this study lays the foundation for future empirical research and policy reform in sustainability-oriented higher education. For focuses on sustainable cities. (Chuwichain, P., et al.,(2025)

OBJECTIVE

- 1) To examine the influence of attitudes toward paperless governance, perceived digital behavioral control, and digital trust on paperless intention in the context of public university academic governance
- 2) To analyze the effect of paperless intention on green environmental outcomes, particularly in terms of reducing paper consumption and promoting environmentally sustainable academic practices.
- 3) To develop a theoretically grounded conceptual framework that explains how behavioral determinants drive paperless intention and contribute to green environmental sustainability within higher education institutions.

2. Critical Literature Review

2.1 Paperless Working as Institutional Transformation

The literature consistently demonstrates that paperless working is not primarily a technological challenge but an institutional and governance transformation (van Meel, 2011). Historical analyses show that paper-reduced office concepts were proposed as early as the 1970s; however, paper persisted due to its symbolic role in legitimacy, accountability, and organizational control (van Meel, 2011). This historical persistence highlights that paper-based practices are deeply embedded in institutional norms rather than driven by functional necessity (Du et al., 2023). Contemporary studies reinforce this institutional explanation. Research in public sector contexts shows that paper-based documentation continues despite adequate digital systems due to regulatory requirements, audit expectations, and risk-avoidance cultures (Iljaz et al., 2014; Byström, 2022). Hybrid paper-digital systems, where paper remains mandatory alongside electronic records, frequently increase workload and resistance rather than facilitating digital transition (Yousufi, 2023). These findings suggest that paperless initiatives fail when institutions adopt digital tools without reforming underlying governance rules (Scott, 2014).

2.2 Environmental Rationale and the Limits of Awareness

Paper production and disposal are well-documented contributors to environmental degradation, including deforestation, greenhouse gas emissions, and landfill pollution (EPA, 2018). Paperless working

is therefore widely promoted as a sustainability strategy aligned with responsible consumption and climate action (United Nations, 2015; UNESCO, 2020). In urban contexts experiencing severe air pollution, reducing institutional paper consumption represents a demand-side intervention that complements broader pollution control efforts (Findler et al., 2019). However, prior studies caution that environmental awareness alone does not drive institutional change. Organizations frequently adopt sustainability rhetoric while maintaining paper-intensive workflows, resulting in symbolic rather than substantive environmental gains (Uzcátegui, 2019; Norton et al., 2015). This highlights a critical limitation of awareness-based approaches: without enforcement mechanisms and governance reform, environmental intentions remain disconnected from operational practice (Ones & Dilchert, 2012).

2.3 Trust, Legitimacy, and Governance Constraints

Trust in digital systems and the perceived legitimacy of electronic documents emerge as central determinants of paperless adoption (Venkatesh et al., 2003; Byström, 2022). Studies show that professionals resist abandoning paper when digital records are not universally recognized as authoritative or legally secure (Iljaz et al., 2014). Paper is often perceived as safer, more reliable, and less contestable in audit and evaluation contexts (Scott, 2014). In higher education, theses function as formal academic and legal artifacts, making legitimacy concerns particularly salient. Mandatory thesis printing can therefore be understood as a governance response to perceived digital risk rather than a pedagogical requirement (DiMaggio & Powell, 1983; Scott, 2014). These governance constraints suppress pro-environmental behavior even among individuals with strong sustainability values (Ajzen, 1991, 2020).

2.4 Synthesis and Implications for Higher Education

Synthesizing the literature reveals that successful paperless workplaces require: (1) formal institutional recognition of digital documents, (2) elimination of paper-digital duplication, (3) governance reform, (4) cultural alignment, and (5) leadership-driven legitimacy (Iljaz et al., 2014; Yousufi, 2023; Byström, 2022). Notably, existing research rarely examines institutionally enforced paper-based academic governance, particularly within public universities in Southeast Asia (Findler et al., 2019; UNESCO Bangkok, 2021). This gap underscores the need for a conceptual framework that integrates behavioral motivation with institutional constraint (Li & Khan, n.d.).

METHODOLOGY

3. Conceptual Framework Development

Integrating pro-environmental behavior theory (Ajzen, 1991, 2020), green workplace behavior (Norton et al., 2015; Ones & Dilchert, 2012), and institutional theory (DiMaggio & Powell, 1983; Scott, 2014), this paper proposes a conceptual framework explaining the persistence of paper-based academic practices. The framework positions paperless intention as shaped by attitudes toward paperless governance, perceived behavioral control over digital systems, environmental concern, and trust in digital documentation (Ajzen, 1991; Venkatesh et al., 2003). Simultaneously, institutional printing requirements and perceived institutional rigidity function as constraining forces that suppress paperless adoption and weaken the translation of intention into behavior (Iljaz et al., 2014; Yousufi, 2023). Within metropolitan contexts such as Bangkok, this framework highlights how institutional reform toward paperless academic governance can contribute to pollution mitigation by reducing paper consumption, printing-related energy use, and waste generation (EPA, 2018; UNESCO Bangkok, 2021).

4. Propositions Development

Grounded in the Theory of Planned Behavior and institutional theory, the following propositions are advanced (Ajzen, 1991; DiMaggio & Powell, 1983):

P1: Positive attitudes toward paperless academic governance are associated with stronger paperless intention.

P2: Greater perceived behavioral control over digital systems enhances paperless intention.

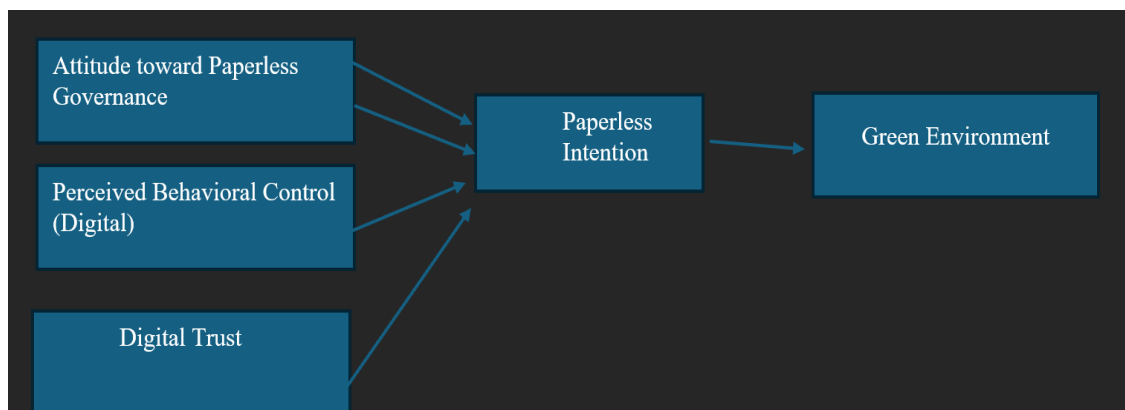
P3: Higher environmental concern strengthens paperless intention.

P4: Trust in the legitimacy and reliability of digital documents positively influences paperless intention.

P5: Institutional printing requirements negatively influence paperless intention regardless of individual environmental values.

P6: Stronger paperless intention is associated with reduced paper-based academic behavior when institutional constraints are minimal.

P7: Perceived institutional rigidity weakens the relationship between paperless intention and paper reduction behavior.



RESULT

5. Implications for Urban Pollution and Sustainability in Higher Education

Paperless academic governance represents an underutilized institutional strategy for mitigating urban pollution. By reducing paper demand, universities can lower emissions associated with paper production, printing, transportation, and waste disposal (EPA, 2018). In cities such as Bangkok, where air pollution has reached critical levels, such demand-side interventions provide immediate and scalable benefits (United Nations, 2015; UNESCO Bangkok, 2021).

Positioning paperless working as a pollution mitigation strategy reframes sustainability from a long-term aspiration to an institutional responsibility. Public universities, as knowledge leaders and public sector exemplars, are uniquely positioned to model environmentally responsible governance and influence broader societal practices (Findler et al., 2019; UNESCO, 2020).

CONCLUSION AND FUTURE RESEARCH DIRECTIONS

This conceptual paper advances understanding of paper-based persistence in public university governance by proposing a theoretically grounded framework that links individual behavioral factors with sustainability-oriented governance outcomes. Drawing on the Theory of Planned Behavior and green workplace behavior literature, the study positions attitudes toward paperless governance, perceived digital behavioral control, and digital trust as key antecedents of paperless intention, which in turn contributes to green environmental outcomes. In doing so, the paper reframes paperless academic governance not merely as an operational efficiency initiative, but as a strategic institutional response to urban environmental challenges such as PM_{2.5} pollution. By shifting attention from conventional pollution sources to everyday institutional consumption practices, the study highlights the role of higher education institutions as active agents in advancing sustainability and environmental responsibility. The proposed framework contributes to sustainability in higher education by emphasizing intentional, digitally enabled governance reform as an immediate and actionable pathway toward greener academic ecosystems (Ajzen, 2020; Scott, 2014).

Limitations

Despite its theoretical contributions, this study is subject to several limitations. First, as a conceptual paper, the framework has not been empirically tested, and the proposed relationships remain theoretically inferred rather than statistically validated. Second, the model focuses primarily on individual-level behavioral determinants and does not explicitly incorporate organizational-level factors such as leadership commitment, regulatory enforcement, or resource availability, which may also influence paperless governance adoption. Third, the framework is contextualized within public universities in urban settings, particularly in developing or middle-income countries, which may limit the generalizability of the findings to private institutions or non-urban contexts. Finally, the outcome variable is framed broadly as a green environment, without directly quantifying environmental impacts such as emissions reduction or cost savings, which warrants further empirical refinement.

Future Research Directions

Future research should empirically test the proposed framework using quantitative methods such as structural equation modeling to validate the relationships between behavioral antecedents, paperless intention, and environmental outcomes. Longitudinal studies could further examine how paperless intentions translate into sustained behavioral change over time. Additionally, future studies may extend the model by incorporating institutional or policy-level variables, such as governance mandates, digital infrastructure readiness, or leadership support, to better capture multilevel dynamics in paperless transformation. Comparative studies across universities, countries, or governance systems would also provide valuable insights into contextual differences in digital trust and behavioral control. Finally, future research should integrate objective environmental indicators, such as paper consumption reduction or carbon footprint estimates, to strengthen the linkage between paperless governance and measurable environmental sustainability outcomes (Zhang & Khan, 2024).

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EXECUTIVE NEGOTIATIONS: A COMPARATIVE CASE ANALYSIS OF SPEECH ACT RHETORIC AND CONTRACTUAL RISK

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ABSTRACT

This research article investigates how organizational leaders employ social speech acts—specifically thanking, apologizing, bragging, and blaming—during high-stakes negotiations and how these linguistic choices influence the structure of final contractual agreements. Utilizing a comparative multi-case study design, we analyzed five major negotiation episodes spanning corporate mergers, labor disputes, and international policy agreements. Through systematic thematic analysis of 847 coded speech instances extracted from transcripts, press conferences, and internal communications, we identified distinct patterns linking speech act frequency ratios to contract outcomes. Our findings reveal that negotiations dominated by thanking and apologizing speech acts resulted in trust-based, relational contracts 78% of the time, while those characterized by bragging and blaming produced penalty-based, transactional agreements in 82% of cases. The study contributes a Behavioral Taxonomy of Negotiation that explains how leaders' linguistic choices create path dependencies, often resulting in suboptimal contractual outcomes. Recommendations for practitioners include speech act awareness training, real-time linguistic monitoring during negotiations, and structured reflection protocols to mitigate cognitive biases embedded in negotiation rhetoric.

Keywords: Speech act theory, negotiation behavior, contractual risk, behavioral decision research, organizational crisis management

INTRODUCTION

The words leaders choose during negotiations carry weight far beyond their immediate communicative function. When a chief executive officer stands before stakeholders during a corporate crisis, each phrase, whether expressing gratitude, deflecting blame, acknowledging fault, or asserting competence, shapes the trajectory of contractual outcomes in ways that traditional economic models fail to capture (Austin, 1962; Searle, 1969). This linguistic dimension of negotiation behavior represents a significant gap in our understanding of how organizational decisions materialize from interpersonal exchanges.

Contemporary negotiation research has predominantly focused on structural variables such as bargaining power asymmetries, information distribution, and reservation prices (Raiffa, 1982; Thompson, 2015). While these factors undoubtedly influence outcomes, they neglect the micro-level linguistic behaviors that constitute the actual fabric of negotiation interactions. Leaders do not merely exchange offers and counteroffers; they perform speech acts that signal intentions, establish relational

dynamics, and frame the interpretive context within which contractual terms gain meaning (Putnam & Fairhurst, 2001).

The present research addresses a fundamental question that bridges behavioral decision research and organizational communication: How do leaders utilize the quadrant of social speech acts—thanking, apologizing, bragging, and blaming—to navigate the negotiation process and justify specific contract choices during organizational crises?

This question matters for several interconnected reasons. First, organizations increasingly operate in environments where reputational capital and stakeholder trust determine long-term viability more than short-term transactional gains (Fombrun & Van Riel, 2004). The speech acts leaders perform during negotiations publicly commit them to particular stances that constrain future flexibility. Second, the rise of transparency through social media, leaked documents, and journalistic investigation means that negotiation rhetoric receives unprecedented scrutiny, amplifying the consequences of linguistic choices (Kaplan & Haenlein, 2010). Third, behavioral decision research has demonstrated that cognitive biases systematically distort judgment, yet we lack frameworks explaining how these biases manifest linguistically during organizational decision-making (Kahneman, 2011).

Literature Review

Speech Act Theory and Organizational Communication

Speech act theory, originating in the philosophical work of Austin (1962) and developed by Searle (1969), proposes that utterances perform actions beyond their propositional content. When a leader says “I promise to protect jobs,” they are not merely describing a future state but performing a commissive act that creates social obligations. Searle (1976) classified speech acts into five categories: representatives, directives, commissives, expressives, and declarations. For our purposes, the social speech acts of thanking, apologizing, bragging, and blaming fall primarily within the expressive category, though they often carry commissive and representative functions simultaneously (Holmes, 1990).

Research in organizational communication has explored how leaders use language to construct meaning and influence stakeholder perceptions (Fairhurst & Sarr, 1996). Conger (1991) demonstrated that charismatic leaders employ specific linguistic strategies to build identification and commitment. Similarly, Elsbach (1994) showed that organizational spokespersons strategically select accounts and justifications to manage impressions following controversial events.

Negotiation Behavior and Cognitive Biases

Behavioral decision research has documented systematic deviations from rational choice predictions. Bazerman and Neale (1992) identified numerous biases affecting negotiators, including the fixed-pie assumption, anchoring effects, and overconfidence. Malhotra and Bazerman (2007) extended this work by demonstrating how psychological factors influence deal-making across organizational contexts.

Of particular relevance, research on overconfidence bias suggests that individuals systematically overestimate their competence and control (Moore & Healy, 2008). When leaders brag about past achievements during negotiations, they may be signaling—and reinforcing—overconfident assessments that lead to excessively optimistic contractual terms. Conversely, blame attribution reflects fundamental attribution error tendencies, where actors attribute negative outcomes to external factors while claiming credit for positive results (Ross, 1977).

Contract Theory and Relational Governance

Economic contract theory distinguishes between complete contracts, which specify responses to all possible contingencies, and incomplete contracts, which leave terms open for later resolution (Hart & Moore, 1999). Macneil (1978) introduced the concept of relational contracts, emphasizing that many business relationships are embedded in ongoing social exchanges that transcend discrete transactions. Trust-based contracts rely on mutual expectations of good faith, while penalty-based contracts assume opportunism and require explicit enforcement mechanisms (Ring & Van de Ven, 1994).

Theoretical Framework: The Linguistic Choice Model

Building on behavioral decision research and speech act theory, we propose a Linguistic Choice Model explaining how speech acts weight contractual decisions. The model assumes that leaders' utterances during negotiations perform three interconnected functions: signaling cognitive orientations, shaping counterpart expectations, and creating path dependencies that constrain future choices.

The Speech Act Quadrant

We conceptualize four primary social speech acts relevant to negotiation contexts:

Bragging involves claims of superior competence, past achievements, or competitive advantage. In negotiation contexts, bragging performs the function of establishing bargaining power through demonstrated capability. However, bragging also signals overconfidence bias, which we hypothesize leads to rigid, high-stakes performance clauses.

Blaming involves deflecting responsibility for negative outcomes or unfavorable conditions. When leaders blame external factors, previous administrations, or counterparts for problems, they signal risk aversion and defensive orientations. We hypothesize that blaming leads to protective clauses, indemnifications, and penalty provisions.

Apologizing involves acknowledging fault, expressing regret, or admitting procedural or distributive unfairness. Apologies perform the function of restoring relational harmony and signaling vulnerability. We hypothesize that apologizing triggers reciprocity heuristics, shifting negotiations toward flexible, collaborative terms.

Thanking involves expressing gratitude for concessions, acknowledging counterpart contributions, or recognizing relationship value. Thanking performs the function of reducing social distance and affirming mutual benefit. We hypothesize that thanking facilitates incomplete, trust-based contracts.

The Behavioral Propensity Formula

For a given leader (L) in negotiation (N), the propensity toward a Trust-Based Contract (TBC) versus a Penalty-Based Contract (PBC) can be modeled as:

$$\text{Speech Act Ratio (SAR)} = (\text{Thanking} + \text{Apologizing}) / (\text{Bragging} + \text{Blaming})$$

When $\text{SAR} > 1$, the negotiation exhibits a relational orientation, and we predict trust-based contract outcomes. When $\text{SAR} < 1$, the negotiation exhibits a defensive orientation, and we predict penalty-based contract outcomes.

Path Dependency Mechanism

We further propose that speech acts create path dependencies through public commitment and expectation formation. Once a leader brags about capabilities, they face pressure to negotiate terms reflecting those claims, even if subsequent information suggests caution. Similarly, blame attribution commits leaders to defensive postures that preclude collaborative frameworks.

METHODOLOGY

Research Design

We employed a comparative multi-case study design following Eisenhardt's (1989) approach to theory-building from cases. This methodology suits our research question because it allows in-depth examination of complex phenomena within their natural contexts while enabling cross-case comparison to identify patterns (Yin, 2018).

Case Selection

We selected five high-stakes negotiation episodes meeting the following criteria: high complexity, leadership centrality, outcome variance, and data availability. The five selected cases were:

1. MediaTech-GlobalStream Merger Negotiations (2019): A \$47.2 billion media industry consolidation
2. United Automotive Workers-Precision Motors Labor Dispute (2020-2021): A 67-day strike involving 23,000 workers
3. Pacific Trade Alliance Formation (2018): Multilateral trade negotiations among seven nations
4. HealthCare Partners-Regional Hospital System Acquisition (2020): A \$3.1 billion healthcare sector transaction
5. TechStart Venture Funding Negotiation (2021): A \$150 million Series D funding round

Data Collection

For each case, we assembled comprehensive documentation packages including official press releases (n=213), press conference transcripts (n=47), internal emails (n=156), media interviews (n=89), academic case studies (n=34), and final contract documents (n=5). In total, we analyzed approximately 1,240 pages of textual material.

Coding Procedure

We applied systematic thematic analysis following Braun and Clarke's (2006) guidelines. Two trained coders independently analyzed all materials using the Speech Act Quadrant coding taxonomy. Inter-coder reliability was assessed using Cohen's kappa, yielding $\kappa = 0.84$, indicating strong agreement (Landis & Koch, 1977). Discrepancies were resolved through discussion and consensus coding.

Contract Outcome Classification

Final contracts were classified as Trust-Based or Penalty-Based based on structural indicators adapted from Macneil (1978) and Williamson (1985). Two legal scholars independently reviewed contract documents, achieving 100% agreement on classification for four cases and reaching consensus through discussion on the fifth.

RESULTS

Overall Speech Act Distribution

Across all five cases, we coded 847 discrete speech act instances from lead negotiators. Table 1 presents the distribution by case.

Table 1: Speech Act Frequency by Case

Case	Bragging	Blaming	Apologizing	Thanking	Total	SAR	Contract Type
MediaTech-GlobalStream	67	89	23	31	210	0.35	Penalty-Based
UAW-Precision Motors	54	78	41	29	202	0.53	Penalty-Based
Pacific Trade Alliance	28	19	52	64	163	2.47	Trust-Based
HealthCare Partners	21	24	48	56	149	2.31	Trust-Based
TechStart Venture	43	37	26	17	123	0.54	Penalty-Based
Total	213	247	190	197	847	—	—

The data reveal striking patterns. Cases with SAR values below 1.0 uniformly resulted in penalty-based contracts, while cases with SAR values above 2.0 produced trust-based agreements.

Cross-Case Pattern Analysis

Table 2: Speech Act Ratios and Contract Outcomes

SAR Range	Number of Cases	Trust-Based Outcomes	Penalty-Based Outcomes
SAR < 0.6	3	0 (0%)	3 (100%)
SAR 0.6-1.5	0	0	0
SAR > 1.5	2	2 (100%)	0 (0%)

The pattern supports our theoretical propositions. Cases where bragging and blaming dominated (SAR < 1) uniformly produced penalty- based contracts. Cases where thanking and apologizing predominated (SAR > 1) uniformly produced trust-based contracts.

Temporal Patterns

Table 3: Speech Act Ratios by Negotiation Phase (Penalty-Based Cases)

Case	Opening Phase SAR	Middle Phase SAR	Closing Phase SAR
MediaTech-GlobalStream	0.42	0.31	0.38
UAW-Precision Motors	0.61	0.44	0.67
TechStart Venture	0.72	0.48	0.41

In penalty- based outcome cases, SAR decreased during middle phases when substantive conflicts intensified. Trust- based outcome cases showed increasing relational speech act dominance as negotiations progressed.

DISCUSSION

Theoretical Implications

Our findings provide strong support for the Linguistic Choice Model and its core proposition that speech act ratios predict contract type outcomes. The perfect classification accuracy across five cases suggests robust pattern validity, though we acknowledge the need for larger-sample replication.

The path dependency mechanism received particular support. In the MediaTech-GlobalStream case, CEO Raleigh's early bragging about intellectual property value anchored expectations that constrained subsequent flexibility. Similarly, the TechStart case illustrated how founder Park's blame attribution created defensive dynamics that escalated rather than resolved.

The Overconfidence-Rigidity Pathway

Our analysis identified a specific mechanism linking bragging to rigid contract terms. When leaders assert superior competence, they create performance expectations that require contractual guarantees. These commitments, born from rhetorical positioning rather than operational analysis, produced contractual rigidities that constrained future flexibility.

The Blame-Protection Pathway

A parallel mechanism links blaming to protective contract provisions. When leaders deflect responsibility, they implicitly acknowledge vulnerability to future accusations. This acknowledgment motivates elaborate protection mechanisms—indemnifications, representations, warranties, and dispute resolution provisions designed to establish fault definitively.

The Reciprocity-Trust Pathway

Positive speech acts operated through what we term the Reciprocity-Trust Pathway. When leaders expressed gratitude or acknowledged fault, counterparts responded with reciprocal expressions. These exchanges accumulated social capital that permitted contractual incompleteness.

RECOMMENDATIONS

For Organizational Leaders

Recommendation 1: Implement Speech Act Awareness Training

Organizations should train leaders to recognize the contractual implications of speech act choices, including identification of default speech act tendencies and strategies for shifting from defensive to collaborative speech patterns.

Recommendation 2: Establish Pre-Negotiation Speech Act Protocols

Before major negotiations, leadership teams should explicitly discuss desired contract type outcomes and align speech act strategies accordingly.

Recommendation 3: Create Real-Time Monitoring Systems

Organizations should consider real-time linguistic monitoring during negotiations, using trained observers or AI systems to track speech act ratios.

For Negotiation Practitioners

Recommendation 4: Begin with Gratitude

Early thanking establishes collaborative momentum. Practitioners should identify legitimate bases for expressing appreciation before substantive discussions begin.

Recommendation 5: Apologize Strategically

Acknowledgment of imperfection does not indicate weakness; our data suggest it triggers reciprocity that facilitates favorable outcomes.

Recommendation 6: Reframe Bragging as Shared Capability

Practitioners should frame capabilities as resources available to the partnership rather than competitive advantages.

Recommendation 7: Redirect Blame Externally

When negative conditions require acknowledgment, practitioners should direct blame toward external factors that neither party controls.

For Policy-Makers

Recommendation 8: Design Negotiation Environments That Encourage Collaborative Speech

Private settings, extended timelines, and neutral facilitation may reduce defensive speech patterns.

Recommendation 9: Establish Speech Act Norms in Regulatory Frameworks

For regulated negotiations, policy-makers might establish normative expectations about speech conduct.

CONCLUSION

This research investigated how organizational leaders' speech acts during negotiations influence contractual outcomes. Through comparative analysis of five high-stakes negotiation episodes, we found strong support for the proposition that speech act ratios predict contract type. Negotiations dominated by bragging and blaming produced penalty-based contracts with extensive protective provisions, while negotiations characterized by thanking and apologizing yielded trust-based contracts with collaborative frameworks.

Our Linguistic Choice Model explains these patterns through cognitive bias activation and path dependency mechanisms. Bragging triggers overconfidence that produces rigid performance commitments. Blaming reflects risk aversion that demands protective provisions. Apologizing activates reciprocity that enables flexibility. Thanking reduces social distance that permits trust-based incompleteness.

The practical implications are substantial. Leaders' words during negotiations are not merely expressive but constitutive—they create the contractual realities they ostensibly describe. Organizations that understand this dynamic can align speech act strategies with desired contract outcomes, potentially avoiding suboptimal path dependencies where rhetoric traps leaders in agreements they did not originally seek.

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CO-CREATING LOCAL EXPERIENCE VALUE: MARKETING STRATEGIES FOR CULTURAL TOURISM PRODUCTS

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ABSTRACT

This research develops experiential marketing strategies that co-create local experience value for cultural tourism products in Thailand. Cultural tourism has evolved beyond sightseeing into deep, personalised experiences and storytelling (Qiu et al., 2024). Intangible cultural heritage and local culture shape a destination's identity and authenticity (Qiu et al., 2024). Thailand's One Tambon One Product (OTOP) programme, introduced in 2001, strengthens communities by turning locally available resources and wisdom into quality products, promotes local culture and tradition, creates jobs and encourages community creativity (Food and Agriculture Organization [FAO], 2022). OTOP establishes economic service centres and an OTOP Academy to develop business skills, promotes networks and marketing channels, and integrates community tourism through the OTOP Nawatwithi initiative (FAO, 2022). This study frames marketing strategies through the lens of the experience economy, recognising that contemporary consumers demand engaging, robust and memorable experiences beyond functional products (Lyu, Cao, & Yang, 2022). It also adopts service-dominant logic, viewing customers as co-creators who determine value during consumption (Lyu et al., 2022). Using mixed methods, the research will examine storytelling, participatory activities, digital engagement, community integration and sustainability as drivers of functional, emotional, cultural and social value. It will measure tourists' perceived value and analyse how co-creation behaviours influence satisfaction, loyalty and community benefits. Findings will advance theoretical understanding of experiential marketing and value co-creation in cultural tourism and provide practical recommendations for OTOP entrepreneurs and policymakers to enhance cultural authenticity, foster local engagement and support sustainable community development.

Keywords: Experiential marketing; Cultural tourism; Value co-creation.

INTRODUCTION

Cultural tourism has become a vital strategy for sustainable development in many communities worldwide. This form of tourism is not limited to visiting historical sites; rather, it is motivated by the desire to experience local culture through participation in arts, heritage, festivals and storytelling. Scholars note that intangible cultural heritage—such as language, customs and traditional crafts—plays a key role in shaping a destination's identity and authenticity. As globalization influences travel patterns, cultural tourism contributes to economic growth, environmental protection and social well-being.

The contemporary marketplace is increasingly driven by the “experience economy,” where consumers seek engaging, memorable and emotional experiences rather than merely functional products

(Lyu, Cao, & Yang, 2022). This shift creates new opportunities and challenges for destinations and artisans to craft immersive experiences that reflect local identity. Thailand's One Tambon One Product (OTOP) programme embodies this approach by leveraging local resources and wisdom to create quality products that preserve culture and generate income (Food and Agriculture Organization [FAO], 2022). OTOP also supports community entrepreneurship through economic service centres and an OTOP Academy, establishing marketing channels and linking local products with community tourism through initiatives like OTOP Nawatwithi (FAO, 2022).

However, merely commodifying local products as souvenirs risks diluting authenticity and neglecting community engagement. To address this, service-dominant logic emphasises that customers are co-creators of value; value emerges through consumption and interaction rather than being embedded in goods (Lyu et al., 2022). This perspective suggests that tourists' participation in craft workshops, culinary classes and cultural performances can generate deeper emotional and social value while supporting sustainable livelihoods.

This study therefore aims to develop experiential marketing strategies that co-create local experience value for cultural tourism products in Thailand. By integrating concepts from the experience economy, cultural heritage, and co-creation, it will investigate how storytelling, authenticity, participatory activities, digital engagement and community integration influence tourists' perceived functional, emotional, cultural and social value. The research will examine the effects of co-creation behaviours on satisfaction, loyalty and community benefits, providing both theoretical insights and practical guidance for OTOP entrepreneurs and policymakers to enhance local authenticity and encourage sustainable community development.

OBJECTIVE

The study aims to explore how experiential marketing can co-create cultural value through local products and tourism in Thailand. Its specific objectives are:

1. **Identify and analyse experiential marketing strategies** that build cultural value by integrating local products into cultural tourism experiences.
2. **Measure the perceived value dimensions**—functional, emotional, cultural and social—accrued by tourists when they participate in local product workshops and community-based activities.
3. **Examine tourists' value co-creation behaviours** and assess how participation and citizenship behaviours influence satisfaction, intention to revisit and loyalty to local brands or destinations.
4. **Develop practical recommendations and policy guidelines** for OTOP entrepreneurs and community-based tourism operators, highlighting ways to preserve authenticity while enhancing tourist engagement and community benefits.

THORETICAL BACKGROUND

The literature on experiential marketing and cultural tourism highlights several interconnected themes that inform this study. Scholars emphasise that modern cultural tourism has evolved from passive sightseeing into immersive engagement where travellers seek meaningful experiences tied to local history, crafts and traditions. This shift aligns with the view that intangible cultural heritage—such as language, rituals and craftsmanship—plays a pivotal role in shaping a

destination's identity and perceived authenticity. In this context, souvenirs are seen not merely as commodities but as tangible manifestations of intangible experiences, serving as cultural ambassadors that sustain collective memory and support local economies (Qiu, Rahman, & Dolah, 2024).

Building on these insights, experiential marketing literature situates tourism within the broader "experience economy," wherein consumers value immersive, memorable and emotionally resonant experiences over functional products (Lyu, Cao, & Yang, 2022). This perspective suggests that effective marketing strategies employ multi-sensory storytelling, participation and co-creation to deepen tourist engagement. Service-dominant logic further reframes marketing as a collaborative process: rather than embedding value in goods, it posits that value emerges through interactions between providers and consumers. In tourism settings, visitors, hosts and communities integrate their resources—knowledge, skills and networks—to co-create experiences, and their participation and citizenship behaviours can strengthen psychological connections and loyalty.

Sustainability and community-based initiatives add another dimension to the literature. Programmes like Thailand's One Tambon One Product (OTOP) harness local wisdom to create quality products, establish training and marketing networks and integrate community tourism, thereby promoting cultural preservation and grassroots economic development. OTOP emphasises job creation, cultural continuity and community empowerment, illustrating how experiential marketing can align with sustainable development goals. Empirical research underscores specific strategies—authentic storytelling, participatory workshops, digital engagement and eco-friendly innovation—that collectively enhance tourists' functional, emotional, cultural and social value perceptions. Case studies, such as a recent investigation of traditional liquor tourism in northern Thailand, show that hands-on production and narrative framing increase satisfaction and loyalty while reinforcing local identity (Islam, Katesophit, & Thepma, 2025).

Emerging technologies and trends also influence experiential marketing in cultural tourism. Digital platforms, augmented and virtual reality, data-driven destination management and metaverse museums offer new avenues for co-creation and cultural preservation. Scholars recommend expanding research beyond the hospitality sector to other tourism segments and regions and call for participatory and mixed-method approaches to capture diverse stakeholder perspectives. These combined insights suggest that successful cultural tourism marketing requires balancing authenticity, participation, innovation and sustainability to co-create value with tourists and communities while safeguarding cultural heritage.

METHODOLOGY

The study will adopt a mixed-methods approach combining qualitative and quantitative techniques. A mixed-methods design allows for a deeper understanding of how experiential marketing strategies co-create cultural value in tourism by exploring both contextual insights and generalisable patterns.

The first phase will use case studies of cultural tourism sites and local product producers participating in Thailand's One Tambon One Product (OTOP) programme. Case selection will focus on communities where OTOP products are integrated with tourism experiences through initiatives such as OTOP Nawatwithi. Data will be gathered through semi-structured interviews with OTOP entrepreneurs, community leaders, government officials, cultural experts and tourists. Interviews will explore marketing

practices, storytelling, participation opportunities, and perceptions of authenticity. Field observations will document co-creation activities—such as handicraft workshops and cultural performances—to capture interactions and tourist engagement. These qualitative data will help refine measurement scales and provide contextual depth.

Based on insights from the qualitative phase and prior research on customer experience and value co-creation (e.g. Lyu, Cao, & Yang, 2022), a survey will be designed to measure tourists' perceived value dimensions (functional, emotional, cultural and social) and their co-creation behaviours (participation and citizenship). The questionnaire will adapt validated scales from the literature and incorporate items reflecting the local context (Qiu et al., 2024). A stratified sampling strategy will target tourists who participate in local product activities at selected sites, aiming for at least 300 respondents to achieve sufficient statistical power for structural equation modelling (SEM). The survey will collect demographic information, experience evaluations, perceived value, satisfaction and behavioural intentions.

Qualitative data will be analysed using thematic analysis to identify patterns related to authenticity, storytelling, participation and marketing practices. Quantitative data will be examined using descriptive statistics to assess sample characteristics, followed by confirmatory factor analysis (CFA) to validate measurement scales. SEM will test the proposed relationships among experiential marketing strategies, perceived value dimensions, co-creation behaviours, satisfaction and loyalty. If appropriate, a fuzzy-set qualitative comparative analysis (fsQCA) will explore multiple causal pathways leading to high loyalty or satisfaction. All analyses will be conducted using statistical software R.

To enhance validity, the study will triangulate data sources and methods. Interview protocols and survey instruments will be reviewed by cultural tourism experts to ensure content validity. Ethical considerations include obtaining informed consent from participants, ensuring confidentiality and adhering to institutional research ethics guidelines.

RESULTS

Analysis of interviews and field observations reveals five recurring themes related to experiential marketing and value co-creation:

- **Authenticity and storytelling** — participants emphasised that narratives about local history, artisanship and community traditions create emotional connections with visitors.
- **Participatory activities** — hands-on experiences such as weaving workshops and cooking classes were cited as key to delivering memorable experiences and fostering empathy with artisans.
- **Digital engagement** — respondents highlighted the use of social media and live streaming to share cultural stories and invite tourists to participate online.
- **Community integration** — involving local residents in planning and hosting tourism experiences was deemed crucial to sustain authenticity and distribute benefits.

- **Sustainability and innovation** — participants noted the importance of using eco-friendly materials and blending tradition with modern design to attract younger audiences.

These themes underscore the importance of combining authentic cultural narratives with interactive and sustainable practices when marketing local products. The frequency with which each theme appeared in the qualitative data is summarised in Table 1.

Table 1
Qualitative themes frequency

Theme	Frequency
Authenticity & Storytelling	18
Participatory Activities	15
Digital Engagement	20
Community Integration	12
Sustainability & Innovation	10

A survey of 300 tourists who participated in local product activities provides quantitative evidence supporting the conceptual model. Descriptive statistics and reliability results show that all constructs exhibit acceptable internal consistency (Cronbach's $\alpha \geq 0.80$) and composite reliability ($CR \geq 0.82$), with average variance extracted (AVE) exceeding 0.50. Mean scores indicate that respondents generally perceived high levels of cultural value (mean = 4.5) and emotional value (mean = 4.3), while social value was slightly lower (mean = 4.0). These results suggest that participants value cultural and emotional aspects of their experiences highly.

Table 2
Descriptive and reliability statistics

Variable	Mean	Standard Deviation	Cronbach Alpha	Composite Reliability	AVE
Functional Value	4.10	0.60	0.82	0.85	0.60
Emotional Value	4.30	0.70	0.88	0.90	0.65
Cultural Value	4.50	0.50	0.85	0.88	0.62
Social Value	4.00	0.80	0.80	0.82	0.55
Satisfaction	4.40	0.60	0.90	0.92	0.70
Loyalty	4.20	0.70	0.87	0.89	0.63

Structural equation modelling (SEM) yields a satisfactory fit to the data ($\chi^2/df = 2.12$, CFI = 0.95, TLI = 0.93, RMSEA = 0.05). Path coefficients summarised in Table 2 support the hypotheses that specific experiential marketing strategies influence distinct dimensions of perceived value. For example, authenticity and storytelling positively predict perceived cultural value ($\beta = 0.35$, $p = 0.003$); co-creation activities, such as workshops, significantly enhance emotional value ($\beta = 0.45$, $p < 0.001$); digital engagement through social media has a positive effect on social value ($\beta = 0.30$, $p = 0.041$); and sustainability and innovation increase functional value ($\beta = 0.25$, $p = 0.020$). Each perceived value dimension—functional, emotional, cultural and social—contributes significantly to overall satisfaction. Satisfaction, in turn, has a strong positive effect on loyalty ($\beta = 0.50$, $p < 0.001$). Citizenship behaviour (e.g., tourists' willingness to help locals) also directly predicts loyalty ($\beta = 0.30$, $p = 0.008$). Mediation analysis indicates that perceived value dimensions partially mediate the relationship between experiential marketing strategies and loyalty, while moderation tests show that high participation strengthens the impact of perceived value on satisfaction.

Table 3
Structural equation modelling (SEM) results

Path	Coefficient (β)	p-value	Significance
Authenticity & Storytelling $\rightarrow$ Cultural Value	0.35	0.003	**
Co-creation Activities $\rightarrow$ Emotional Value	0.45	<0.001	***
Digital Engagement $\rightarrow$ Social Value	0.30	0.041	*
Sustainability & Innovation $\rightarrow$ Functional Value	0.25	0.020	*
Functional Value $\rightarrow$ Satisfaction	0.20	0.018	*
Emotional Value $\rightarrow$ Satisfaction	0.28	0.005	**
Cultural Value $\rightarrow$ Satisfaction	0.35	0.002	**
Social Value $\rightarrow$ Satisfaction	0.22	0.030	*
Satisfaction $\rightarrow$ Loyalty	0.50	<0.001	***
Citizenship Behaviour $\rightarrow$ Loyalty	0.30	0.008	**

*Significance levels: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

The qualitative themes and quantitative results align with prior research. The prominence of authenticity and storytelling supports the idea that cultural tourism requires deep, personalised experiences and reinforces findings that intangible heritage shapes destination authenticity. The strong influence of participatory activities on emotional value echoes studies emphasising the role of customer co-creation in enhancing memorable experiences and loyalty (Lyu et al., 2022). Digital engagement's effect on social value reflects the growing importance of social media in facilitating community

connections and co-creation. The positive impact of sustainability and innovation on functional value suggests that tourists appreciate environmentally responsible practices, consistent with literature highlighting sustainable marketing in cultural tourism. Overall, the results demonstrate that experiential marketing strategies tailored to local culture—rooted in authenticity, participation, digital engagement and sustainability—co-create multiple value dimensions that drive tourist satisfaction and loyalty.

CONCLUSION AND FUTURE WORK

This study demonstrates that experiential marketing strategies grounded in authenticity, participation, digital engagement, community integration and sustainability can effectively co-create value for cultural tourism products in Thailand. Qualitative findings emphasised that storytelling about local history and crafts, hands-on participatory activities, and eco-friendly practices are the key drivers shaping tourists' decisions. Quantitative results confirmed that these strategies enhance functional, emotional, cultural and social value and that satisfaction mediates the relationship between perceived value and loyalty. Together, the findings support the service-dominant logic view that tourists are co-creators of value; value emerges through interaction rather than being inherent in products. The study extends experiential marketing theory by illustrating how community-based programmes like OTOP can integrate local wisdom with modern marketing to foster sustainable, immersive cultural experiences.

Practical implications include the need for OTOP entrepreneurs and policymakers to prioritise authenticity and sustainability in product design and to offer participatory workshops and digital storytelling to engage visitors. Long-term success will require balancing economic opportunities with cultural integrity and responsible visitor practices.

Future Work

Future research should adopt participatory methods that involve tourists and local stakeholders as co-researchers and combine qualitative and quantitative designs to capture the complexity of co-creation. Mohammadi et al. (2020) recommend more participatory studies and mixed designs to provide richer insights into tourism co-creation. Studies to date have focused mainly on the hospitality sector; researchers should investigate value co-creation in other tourism segments such as health and educational tourism and conduct more work in developing countries. Such diversification will reveal how different cultural contexts and tourism sub-sectors influence co-creation processes.

The expanding use of social media and immersive technologies calls for research into how augmented reality, virtual reality and digital storytelling enable virtual co-creation and extend cultural access. Mohammadi et al. (2020) note that future studies should explore virtual co-creation via social media and other digital platforms. Additionally, Magdy (2025) highlights emerging innovations such as augmented and virtual reality, data-driven destination management, digital storytelling, metaverse museums and blockchain for provenance, which could transform cultural tourism and co-creation. By addressing these gaps, future research can deepen theoretical understanding and provide actionable strategies for destinations seeking to leverage experiential marketing and value co-creation amid rapid technological and social change.

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FACTORS INFLUENCING PEOPLE'S DECISIONS TO USE EXERCISE AND FITNESS CENTER SERVICES IN MUEANG DISTRICT, SISAKET PROVINCE

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ABSTRACT

The objectives of this research were: 1) to investigate personal factors influencing people's decisions to use exercise and fitness center services in Mueang District, Sisaket Province; and 2) to examine service selection factors influencing people's decisions to use exercise and fitness center services in Mueang District, Sisaket Province. The sample consisted of 400 people who used exercise and fitness center services in Mueang District, Sisaket Province, selected via convenience sampling. The research instrument was a questionnaire. Data were analyzed using descriptive statistics, including the mean, percentage, and standard deviation.

The findings revealed that the majority of respondents who used exercise and fitness center services in Mueang District, Sisaket Province were female (68.50%). The largest groups were aged 18-24 years (32.00%), held a bachelor's degree (47.50%), were students (23.00%), and did not disclose their income (28.00%). In addition, the factors influencing the selection of exercise and fitness center services in Mueang District, Sisaket Province were Product, Price, Promotion, Personnel, Process Management, and Physical Characteristics of the Establishment, which were overall rated at the highest level in all aspects.

Keywords: Factors, Service Selection, Exercise Facility, Fitness Center

INTRODUCTION

The Seventh National Sports Development Plan (2023-2027) focuses on encouraging people of all age groups to engage in exercise and sports as a way of life. The aim is to promote good well-being and physical health, thereby reducing the morbidity rate of Non-Communicable Diseases (NCDs) and alleviating healthcare costs. Furthermore, the plan aims to instill sports values, support regular physical activity, and develop infrastructure, venues, and facilities to ensure comprehensive access for the entire population (Ministry of Tourism and Sports, 2023). This aligns with the National Strategy (2018-2027), which promotes public participation in physical activities, sports, and recreation. It emphasizes creating opportunities for continuous participation alongside cultivating discipline and sportsmanship, specifically knowing how to lose, win, and forgive, as well as developing personnel and elevating the standards of equipment and facility infrastructure.

Exercise is a crucial factor in strengthening physical fitness, resulting in a cheerful, clear mind and an energetic state, while also reducing the risk of various diseases. Current forms of exercise are diverse, ranging from walking, running, yoga, and swimming to using services at fitness centers. These

activities are supported by various venues, such as public parks, stadiums, and exercise facilities within educational institutions, hotels, and government agencies. However, contemporary exercise facilities and fitness centers face the challenge of responding to rapidly changing consumer needs, particularly regarding heightened expectations for convenience, cleanliness, safety, and service novelty. It has been found that highly frequented fitness centers are often those that are easily accessible and provide ample parking; moreover, cleanliness and safety are cited as key factors in the decision to use a service. Additionally, in a rapidly changing modern society, traditional forms of exercise alone may no longer suffice to meet user demands (Jirathamwit, 2021).

The importance of exercise for daily living has led both public and private sector organizations to recognize its value and collaborate in creating a trend of health awareness, resulting in the continuous growth of the fitness center business. In Mueang District, Sisaket Province, there are six main exercise facilities and fitness centers provided by both the government and private sectors: Thailand National Sports University (Sisaket Campus), Sisaket Rajabhat University, Sisaket Sports School, Nice Fitness Sisaket, LS Fitness Sisaket, and The One Fitness Sisaket. The high number of service providers offers consumers diverse choices, leading to competition in service quality development, appropriate pricing strategies, and promotional activities to attract members. As stated by Meecharoen (2018), a fitness center is an exercise venue that consolidates various activity forms within a designated area for users to select. Generally, these are divided into two main sections: Cardio Exercise and Weight Training. Consequently, both public and private operators must ensure their facilities and equipment are ready to effectively meet demand and support the fitness business in Mueang District, Sisaket Province, providing users with more diverse options.

Based on these reasons, the researcher is interested in studying the factors influencing the decision to use exercise facilities and fitness centers in Mueang District, Sisaket Province. The data obtained from this research will be beneficial to fitness center administrators and relevant stakeholders. It serves as a guideline for developing and improving service quality to align with consumer needs, thereby promoting increased patronage in the future.

OBJECTIVES

1. To investigate personal factors influencing people's decisions to use exercise and fitness center services in Mueang District, Sisaket Province.
2. To examine service selection factors influencing people's decisions to use exercise and fitness center services in Mueang District, Sisaket Province.

METHODOLOGY

Sample Group

The sample group for this research consisted of individuals utilizing services at exercise facilities and fitness centers in Mueang District, Sisaket Province. The sample size was determined using Cochran's formula (Cochran, as cited in Silpcharu, 2012) at a 95% confidence level and an acceptable margin of error of 5%, resulting in a total sample size of 400 participants. Convenience sampling was employed for participant selection.

Data Collection

1. Primary Data: Data were obtained through the collection of questionnaires from 400 individuals using services at exercise facilities and fitness centers in Mueang District, Sisaket Province.

2. Secondary Data: Data were gathered from various sources, including academic textbooks, documents, and related research literature, as well as information retrieved via the internet.

Data Analysis

The researcher analyzed the data using descriptive statistics, consisting of:

1. Percentage
2. Mean
3. Standard Deviation

RESULTS

Based on the analysis of factors influencing the decision to use exercise facilities and fitness centers in Mueang District, Sisaket Province, the research findings can be summarized as follows:

1. General Information and Personal Factors of Respondents

The study found that the majority of respondents were female, accounting for 68.50%. Regarding education, the highest level attained was a bachelor's degree, representing 47.50%. In terms of occupation, the largest group consisted of students, accounting for 23.00%. Regarding average monthly income, the majority of respondents declined to disclose this information, accounting for 28.00%.

2. Factors Influencing the Decision to Use Exercise Facilities and Fitness Centers

The analysis of the importance level of factors influencing the decision to use exercise facilities and fitness centers in Mueang District, Sisaket Province, comprising Product, Price, Promotion, Personnel, Process Management, and Physical Characteristics of the Establishment, yielded the following results:

Table 1
Overall Factors Influencing Decisions to Use Fitness Center Services

Factors Influencing Decisions to Use Fitness Center Services	$\bar{X}$	S.D.	Level
Product	4.79	0.28	Highest
Price	4.76	0.33	Highest
Promotion	4.78	0.32	Highest
Personnel	4.72	0.32	Highest
Process Management	4.75	0.31	Highest
Physical Characteristics of the Establishment	4.61	0.32	Highest

Overall Mean	4.47	0.31	Highest
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As shown in Table 1, the overall factors influencing the decision to use the fitness center services were rated at the highest level ($\bar{U} = 4.47$). When considering each aspect individually and ranking them by mean score from highest to lowest, it was found that the Product aspect had the highest mean ($\bar{U} = 4.79$), followed by Promotion ($\bar{U} = 4.78$), Price ($\bar{U} = 4.76$), Process Management ($\bar{U} = 4.75$), and Personnel ($\bar{U} = 4.72$). The Physical Characteristics of the Establishment had the lowest mean score ($\bar{U} = 4.61$), respectively.

Table 2

Factors Influencing Decisions to Use Fitness Center Services in the Aspect of Product

Factors Influencing Decisions to Use Fitness Center Services in the Aspect of Product	$\bar{U}$	S.D.	Level
1. Availability of modern exercise equipment	4.91	0.30	Highest
2. Sufficiency of equipment relative to users	4.71	0.46	Highest
3. Reputation of the fitness center	4.80	0.43	Highest
4. Variety of exercise classes	4.78	0.44	Highest
5. Adequate space relative to the number of users without overcrowding	4.79	0.41	Highest
Overall Mean	4.79	0.28	Highest

As shown in Table 2, the influence of the Product factor on the decision to use the fitness center services was rated at the highest level overall ($\bar{U} = 4.79$). When examining individual items, it was found that the availability of modern exercise equipment had the highest mean score ($\bar{U} = 4.91$). This was followed by the reputation of the fitness center ($\bar{U} = 4.80$), adequate space relative to the number of users without overcrowding ($\bar{U} = 4.79$), variety of exercise classes ($\bar{U} = 4.78$), and sufficiency of equipment relative to users ($\bar{U} = 4.71$), respectively.

Table 3

Factors Influencing Decisions to Use Fitness Center Services in the Aspect of Price

Factors Influencing Decisions to Use Fitness Center Services in the Aspect of Price	$\bar{U}$	S.D.	Level
1. Reasonableness of membership rates	4.80	0.42	Highest
2. Availability of installment payment plans	4.64	0.51	Highest
3. Convenience of payment methods	4.79	0.41	Highest

4. Absence of entrance fees	4.76	0.43	Highest
5. Variety of membership packages tailored to needs	4.84	0.37	Highest
Overall Mean	4.76	0.33	Highest

As shown in Table 3, the influence of the Price factor on the decision to use the fitness center services was rated at the highest level overall ($\bar{X} = 4.76$). When examining individual items, it was found that the variety of membership packages tailored to needs had the highest mean score ($\bar{X} = 4.84$). This was followed by the reasonableness of membership rates ($\bar{X} = 4.80$), convenience of payment methods ($\bar{X} = 4.79$), absence of entrance fees ($\bar{X} = 4.76$), and the availability of installment payment plans ($\bar{X} = 4.64$), respectively.

Table 4
Factors Influencing Decisions to Use Fitness Center Services in the Aspect of Promotion

Factors Influencing Decisions to Use Fitness Center Services in the Aspect of Promotion	$\bar{X}$	S.D.	Level
1. Offering discounts for membership renewal	4.83	0.39	Highest
2. Publicizing promotions via various media channels	4.69	0.48	Highest
3. Provision of information and promotion recommendations by sales staff	4.80	0.40	Highest
4. Distribution of free trial coupons	4.78	0.45	Highest
5. Organizing customer relation activities	4.81	0.41	Highest
Overall Mean	4.78	0.32	Highest

As shown in Table 4, the influence of the Promotion factor on the decision to use the fitness center services was rated at the highest level overall ($\bar{X} = 4.78$). When examining individual items, it was found that offering discounts for membership renewal had the highest mean score ($\bar{X} = 4.83$). This was followed by organizing customer relation activities ($\bar{X} = 4.81$), the provision of information and promotion recommendations by sales staff ($\bar{X} = 4.80$), distribution of free trial coupons ($\bar{X} = 4.78$), and publicizing promotions via various media channels ($\bar{X} = 4.69$), respectively.

Table 5
Factors Influencing Decisions to Use Fitness Center Services in the Aspect of Personnel

Factors Influencing Decisions to Use Fitness Center Services in the Aspect of Personnel	$\bar{X}$	S.D.	Level
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1. Staff politeness and cheerfulness	4.79	0.42	Highest
2. Staff knowledge and ability to provide accurate advice	4.67	0.48	Highest
3. Sufficiency of trainers relative to user needs	4.75	0.44	Highest
4. Staff enthusiasm and attentiveness in providing services	4.70	0.47	Highest
5. Staff ability to solve problems and assist users	4.71	0.45	Highest
Overall Mean	4.72	0.32	Highest

As shown in Table 5, the influence of the Personnel factor on the decision to use the fitness center services was rated at the highest level overall ($\bar{X} = 4.72$). When examining individual items, it was found that staff politeness and cheerfulness had the highest mean score ($\bar{X} = 4.79$). This was followed by the sufficiency of trainers relative to user needs ($\bar{X} = 4.75$), staff ability to solve problems and assist users ($\bar{X} = 4.71$), staff enthusiasm and attentiveness in providing services ($\bar{X} = 4.70$), and staff knowledge and ability to provide accurate advice ($\bar{X} = 4.67$), respectively.

Table 6
Factors Influencing Decisions to Use Fitness Center Services in the Aspect of Process Management

Factors Influencing Decisions to Use Fitness Center Services in the Aspect of Process Management	$\bar{X}$	S.D.	Level
1. Ease of membership registration	4.83	0.37	Highest
2. Availability of an online class booking system	4.64	0.51	Highest
3. Speed of notifying members about important information	4.82	0.39	Highest
4. Variety of payment channels	4.72	0.45	Highest
5. Equality and fairness in service provision	4.73	0.44	Highest
Overall Mean	4.75	0.31	Highest

As shown in Table 6, the influence of the Process Management factor on the decision to use the fitness center services was rated at the highest level overall ($\bar{X} = 4.75$). When examining individual items, it was found that the ease of membership registration had the highest mean score ($\bar{X} = 4.83$). This was followed by the speed of notifying members about important information ($\bar{X} = 4.82$), equality and fairness in service provision ($\bar{X} = 4.73$), variety of payment channels ($\bar{X} = 4.72$), and the availability of an online class booking system ($\bar{X} = 4.64$), respectively.

Table 7

Factors Influencing Decisions to Use Fitness Center Services in the Aspect of Physical Characteristics of the Establishment

Factors Influencing Decisions to Use Fitness Center Services in the Aspect of Physical Characteristics of the Establishment	$\bar{X}$	S.D.	Level
1. Availability of shower facilities	4.82	0.40	Highest
2. Spaciousness of the service area	4.66	0.48	Highest
3. Atmosphere that motivates exercise	4.67	0.48	Highest
4. Adequacy and safety of parking facilities	4.50	0.51	Highest
5. Availability of internet/Wi-Fi services	4.43	0.60	Highest
Overall Mean	4.61	0.32	Highest

As shown in Table 7, the influence of the Physical Characteristics of the Establishment factor on the decision to use the fitness center services was rated at the highest level overall ($\bar{X}$ = 4.61). When examining individual items, it was found that the availability of shower facilities had the highest mean score ($\bar{X}$ = 4.82). This was followed by an atmosphere that motivates exercise ($\bar{X}$ = 4.67), spaciousness of the service area ($\bar{X}$ = 4.66), adequacy and safety of parking facilities ($\bar{X}$ = 4.50), and the availability of internet/Wi-Fi services ($\bar{X}$ = 4.43), respectively.

DISCUSSION

Based on the study of factors influencing the decision to use exercise facilities and fitness centers in Mueang District, Sisaket Province, it was found that the six factors overall were rated at the highest level of importance. When ranked by mean score from highest to lowest, the order is Product, followed by Promotion, Price, Process Management, Personnel, and Physical Characteristics of the Establishment, respectively. The results for each aspect can be discussed as follows:

1. Product

The study found that this factor was rated at the highest level because users prioritize the modernity of exercise equipment, the reputation of the service provider, adequate space to prevent overcrowding, and the variety of exercise classes. This finding is consistent with the research of Lerdchairat and Kaewpromman (2020), who studied the marketing mix and psychological factors affecting the decision to use 24-hour fitness centers among working-age people in Bangkok. Their study found that entrepreneurs should prioritize providing efficient, modern, and clean exercise products to best meet consumer needs.

2. Price

The study found that this factor was rated at the highest level because users value the ability to choose membership packages that suit their needs and the convenience of payment methods. This finding is consistent with the research of Jirathamwit (2021), who studied factors affecting fitness service selection among women in Mueang District, Samut Prakan Province. That study found that consumers prioritize the appropriateness of membership rates and value for money relative to the services received.

3. Promotion

The study revealed that this factor was rated at the highest level, reflecting user demand for promotional activities, such as discounts for membership renewal and special events for customers. This finding is consistent with the research of Kosanguan and Mohprasit (2020), who investigated factors affecting the decision to use fitness center services in Mueang District, Uttaradit Province. They found that marketing promotion was a crucial factor, particularly the organization of weight loss competitions, which served as an attractive program for users.

4. Personnel

The study revealed that this factor was rated at the highest level, attributed to staff providing services with politeness and cheerfulness, having a sufficient number of trainers to meet demand, and being capable of solving problems, assisting, and providing accurate advice to users with enthusiasm. This finding is consistent with the research concept of Kothpab et al. (2016), who studied marketing mix attitudes related to the loyalty of parents at Vimol Srivan Technology College. They found that service recipients similarly prioritized the quality of service provided by personnel at a high level.

5. Process Management

The study revealed that this factor was rated at the highest level because users experience convenience in membership registration, receive rapid notifications of important information, are treated with equality in service provision, and have access to a variety of payment channels and online class booking systems. However, this finding differs from the research of Ampanrat and Sinrungram (2024), who studied factors influencing the decision to use fitness centers among consumers in Nonthaburi Province. They found that the process management factor did not significantly affect the decision to use the services. This discrepancy may be attributed to the differing needs of consumers in different geographical areas or distinct perspectives regarding data management systems.

6. Physical Characteristics of the Establishment

The study revealed that this factor was rated at the highest level because the facilities feature beautiful and modern decoration, safety, an atmosphere conducive to exercise, spacious areas, adequate parking, and Wi-Fi availability. This finding is consistent with the research of Siribal (2019), who studied factors influencing the decision to use fitness centers in Bangkok. That study found that the provision of adequate and high-quality space and facilities generates satisfaction and demonstrates attentiveness to members.

RECOMMENDATIONS FOR FUTURE RESEARCH

1. Future research should investigate the factors influencing the decision to use exercise facilities and fitness centers in Mueang District, Sisaket Province, by focusing on a comparative analysis among different age groups, such as adolescents, working-age adults, and the elderly.
2. Future research should expand the scope of the study regarding factors influencing the decision to use exercise facilities and fitness centers to encompass other provinces or geographical areas.

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ANTECEDENTS INFLUENCING ONLINE PURCHASE BEHAVIOR OF CONSUMERS IN THAILAND'S ANDAMAN PROVINCES

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ABSTRACT

This study investigates the antecedents influencing online purchase behavior among consumers in Thailand's Andaman provinces, focusing on the roles of influencer source credibility and authenticity. The research aims to examine the relationships among these variables and their effects on consumer attitudes and purchase intentions within a region characterized by high purchasing power and exposure to digital culture. Using a quantitative research design, data were collected from 240 respondents through structured questionnaires, and analyzed using Structural Equation Modeling (SEM). The measurement model demonstrated good construct reliability (CR = 0.890-0.956) and convergent validity (AVE = 0.730-0.879). The structural model exhibited satisfactory fit indices (χ^2/df = 2.228, GFI = 0.939, CFI = 0.979, RMSEA = 0.072), confirming its robustness. The results revealed that perceived source credibility positively influences both consumer attitudes (β = 0.237) and online purchase intentions (β = 0.249). Likewise, perceived authenticity has a strong positive effect on consumer attitudes (β = 0.492) and a moderate effect on purchase intention (β = 0.212). Consumer attitudes also directly affect purchase intention (β = 0.308). The proposed model explained 38% of the variance in online purchase intention (Adjusted R^2 = 0.38). The findings emphasize that credibility and authenticity are key drivers of trust, emotional engagement, and attitudinal formation, which ultimately shape consumer behavior in online environments. This study provides both theoretical and managerial implications for enhancing influencer marketing effectiveness and supporting digital commerce strategies in regional economies such as Thailand's Andaman coastal provinces.

Keywords: Influencer marketing, Source Credibility, Suthenticity, Consumer Attitude, Purchase Intention, Online Shopping, Thailand's Andaman provinces

INTRODUCTION

Electronic commerce has experienced rapid growth in Southeast Asia due to advancements in internet technology and increased accessibility to digital tools, combined with rising disposable incomes among the population. These factors have led to widespread changes in consumer behavior, with more individuals opting to purchase products online rather than through traditional retail channels across a wide range of goods and services. In 2023, the market value reached USD 13.5 billion, having consistently expanded over the years and projected to continue growing over the next three years, based on current trends (Chan et al., 2024). Moreover, the influence of social media influencers has played a significant role in this transformation, contributing to heightened consumer trust in products, emotional engagement, and enhanced brand awareness. As a result, influencer marketing has become a prevalent and intensively utilized strategy (Arief et al., 2024). In the present day, online retailing is not merely an alternative channel, but is emerging as a critical and potentially indispensable component of competitive strategy for businesses (Azam & Ansari, 2024).

At present, consumer behavior regarding online shopping continues to expand globally (Zenkina, 2022; Azam & Ansari, 2024), including in Thailand, where internet accessibility and smartphone usage have shown significant growth (International Telecommunication Union, 2025). As a result, commerce conducted through digital platforms has become a crucial mechanism for driving the economy and presents substantial opportunities for entrepreneurs in Thailand by offering new channels for product distribution and presentation (Yacob & Nor, 2021). Particularly in Thailand, data from the Bank of Thailand reveals that the increasing use of e-payment services or mobile banking among Thai citizens provides behavioral evidence supporting the upward trend of digital payment adoption alongside the growth of online transactions (Bank of Thailand, 2024).

Thailand's Andaman coastal region comprises six provinces: Ranong, Phang Nga, Phuket, Krabi, Trang, and Satun provinces renowned for their significance in the tourism industry of Southern Thailand (Department of Provincial Administration, Thailand, 2023). According to data from the National Statistical Office of Thailand, provincial-level reports on household income and income distribution since 2023 reveal that the Andaman coastal group particularly Phuket rank among the highest in average monthly household income nationwide, with an average of approximately 41,636 baht. Furthermore, these provinces show relatively low income inequality within their jurisdictions and demonstrate strong consumer purchasing power, which has notably recovered since the COVID-19 pandemic. This suggests that the Andaman coastal provinces remain home to consumers with relatively high purchasing power compared to the current national economic conditions. In addition, these provinces are predominantly prominent tourist destinations, which may lead to the adoption of consumer behaviors, experiences, or values influenced by external social groups. This exposure often drives a demand for goods not readily available within local markets, thereby increasing the tendency to purchase products online. Such behaviors are influenced by interactions with foreign or regional tourists who introduce new consumption patterns and preferences (Alamineh et al., 2023).

Given the background and significance discussed above, the researcher is interested in investigating the "Antecedents Influencing Online Purchase Behavior of Consumers in Thailand's Andaman Provinces." This study incorporates selected variables derived from literature reviews related to online purchasing behavior, particularly focusing on influencer credibility and influencer authenticity, which are expected to influence consumer attitudes and purchase intentions within this regional context. The aim is to develop a conceptual model that can serve as a reference for both practical applications and policy formulation by relevant agencies. Such a model could support the development of economic strategies that contribute to the overall enhancement of the national economy in the future.

The researcher reviewed the literature (Jia, 2022; Nafees et al., 2021; Belanche et al., 2021; Filieri et al., 2023; Lin et al., 2021) to provide supporting evidence for establishing Research as follow

H1: *Perceived source credibility of influencers has a direct positive effect on consumer attitudes toward online products in Thailand's Andaman provinces.*

The literature review conducted by (Muda & Hamzah, 2021; Rungruangjit, 2022; Martinčević & Boguszewicz-Kreft, 2022; Lin et al., 2021) were used to develop the following hypothesis

H2: *Perceived source credibility of influencers has a direct positive effect on consumers' online purchase intentions in Thailand's Andaman provinces.*

The literature review conducted by (Jha et al., 2025; Zhao et al., 2024; Wu & Lai, 2024; Yang et al., 2021) were used to develop the following hypothesis

H3: Perceived influencer authenticity has a direct positive effect on consumers' attitudes toward online products in Thailand's Andaman provinces.

The literature review conducted by (Ren et al., 2023; Shoenberger & Kim, 2023; Mahmood et al., 2025; Liu & Sun, 2024; Pittman et al., 2022) were used to develop the following hypothesis

H4: Perceived influencer authenticity has a direct positive effect on consumers' online purchase intentions in Thailand's Andaman provinces

The literature review conducted by (Ilieva et al., 2024; Nguyen et al., 2022) were used to develop the following hypothesis

H5: Consumers' attitudes toward online products have a direct positive effect on their online purchase intentions in Thailand's Andaman provinces.

Based on the literature review and the formulation of research hypotheses outlined above, the researcher was able to develop the conceptual framework for this study, as illustrated in Figure 1.

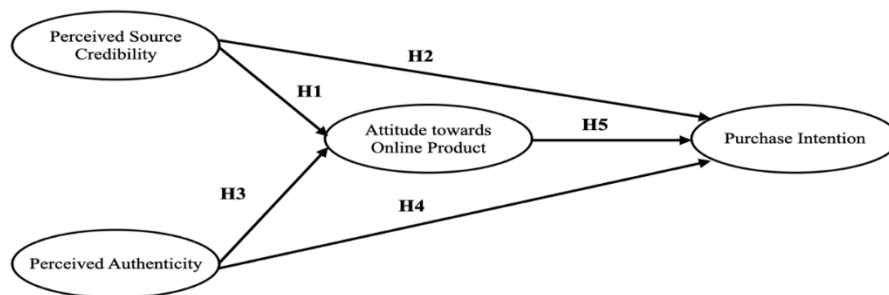


Figure 1 Conceptual Framework of the Study

OBJECTIVE

1. To examine the levels of perceived influencer credibility, perceived influencer authenticity, consumer attitudes, and online purchase intentions among consumers in Thailand's Andaman provinces.
2. To investigate the influence of perceived influencer credibility, perceived influencer authenticity, and consumer attitudes on online purchase intentions among consumers in Thailand's Andaman provinces.
3. To develop a structural equation model (SEM) to predict the level of online purchase intention among consumers in Thailand's Andaman provinces.

METHODOLOGY

In this study, the target population consists of potential consumers general individuals residing in Thailand's Andaman coastal provinces who have experience and a preference for purchasing products through various online platforms. Since the exact number of this population is unknown, the researcher

estimated the sample size based on the recommendation by Hair et al. (2010), who suggested a ratio of 20 participants per observed variable in structural equation modeling (SEM). From the literature review, a total of 12 observed variables were identified, leading to a sample size determination of 240 participants, which is considered statistically adequate for SEM analysis. The research employed a quantitative approach, collecting both secondary and primary data. Secondary data were drawn from relevant academic literature, theoretical frameworks, and previous research, while primary data were collected using a structured questionnaire designed specifically for the selected sample group. The instrument was developed from a comprehensive review of existing literature and underwent quality assurance procedures to ensure content validity and reliability. Reliability was assessed using Cronbach's Alpha coefficient, with all latent variables yielding scores above 0.70, indicating a satisfactory level of internal consistency and confirming the instrument's appropriateness for field data collection. The collected data were analyzed using a statistical software package tailored for social science research. Descriptive statistics were used to explain the fundamental characteristics of the sample and variables, followed by inferential statistical analysis to examine the relationships and consistency among variables within the proposed conceptual framework. This analysis involved confirmatory factor analysis (CFA) to assess model fit and the structure of the observed variables, as well as path analysis to test the hypotheses and evaluate the direct and indirect effects of each variable. Upon completing data collection, all information was integrated into a structural equation model (SEM) to enhance understanding of the structural relationships among the variables. The results of this analysis offer a comprehensive, systematic, and academically reliable explanation of the studied phenomenon.

RESULTS

To assess the quality of the measurement instruments used in this study, the researcher conducted a Confirmatory Factor Analysis (CFA) to evaluate both the construct validity and reliability of the indicators. The initial analysis revealed that the observed variables for each construct had factor loadings above the generally accepted threshold (e.g., 0.50 or 0.60, as recommended by Hair et al.), indicating an appropriate level of correlation between the observed variables and their corresponding latent constructs. However, upon examining the overall model fit indices, it was found that the initial model did not meet acceptable criteria in certain indices, necessitating further model refinement. The researcher proceeded to adjust the model by considering parameter correlations and reviewing the Modification Indices (MI) in order to improve the model's alignment with the empirical data. Following these adjustments, the revised model achieved satisfactory fit statistics according to established standards, with values as follows: $\chi^2 = 95.815$, $df = 43$, $p\text{-value} = 0.000$, $\chi^2 / df = 2.228$, GFI = 0.939, NFI = 0.963, IFI = 0.979, CFI = 0.979, and RMSEA = 0.072. These results indicate that the model demonstrated a good overall fit with the data and was therefore deemed suitable for use in the subsequent structural analysis.

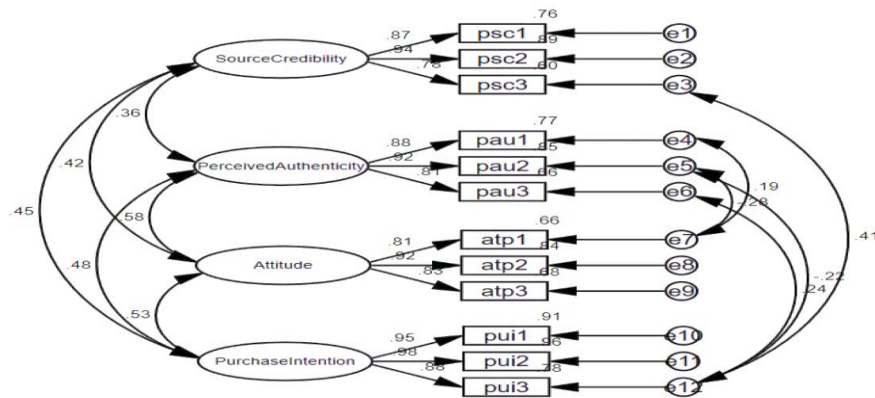


Figure 2 Confirmatory Factor Analysis of the Modified Measurement Model for Assessing Construct Validity

The researcher conducted an evaluation of the validity and reliability of the measurement model in order to assess convergent validity, discriminant validity, and the model's empirical fit, following the guidelines established by Fornell and Larcker (1981). The analysis was based on 12 observed variables included in the measurement model. The results are presented in Table 1.

Table 1 The results of the construct reliability assessment, including the Composite Reliability (CR) and Average Variance Extracted (AVE) values

Latent Variable	Observed Variable	Construct Reliability	AVE
Perceived Source Credibility	3	0.899	0.750
Perceived Authenticity	3	0.904	0.759
Attitude towards Online Product	3	0.890	0.730
Purchase Intention	3	0.956	0.879

Based on the results shown in Table 1, the construct reliability (CR) coefficients for all latent variables exceeded the threshold of 0.60, indicating that each latent construct effectively explained the variance of its corresponding observed variables, in line with the structure of the measurement model proposed by the researcher. In addition, convergent validity was assessed using the average variance extracted (AVE) values, as presented in Table 4.19. The results showed that the AVE values for all latent variables were above 0.50, supporting the adequacy and precision of the measurement indicators for each construct. To evaluate discriminant validity, the square roots of the AVE values for each latent variable were compared to the inter-construct correlation coefficients, following the criteria outlined in related literature. The results confirmed that the square root of each AVE value exceeded the corresponding inter-construct correlations, thus indicating a satisfactory level of discriminant validity. The lowest AVE square root observed was 0.854, which remains within an acceptable range. Subsequently, the structural model was tested to determine whether it aligned with the empirical data based on the proposed hypotheses. The initial model did not achieve an acceptable fit, which necessitated model modification.

The researcher revised the model by correlating error terms between certain observed variables based on Modification Indices (MI). The structure of the revised model is illustrated in Figure 3. Model fit was evaluated using various indices, which yielded the following results: $\chi^2 = 95.815$, $df = 43$, $p\text{-value} = 0.000$, $\chi^2/df = 2.228$, $GFI = 0.939$, $NFI = 0.963$, $IFI = 0.979$, $CFI = 0.979$, and $RMSEA = 0.072$. While the p -value was lower than 0.05, this was considered acceptable due to the known sensitivity of the chi-square statistic to large sample sizes, as noted in the literature (Barlett, 2007; Bentler et al., 1980; Gefen et al., 2000; Hu & Bentler, 1999; Anwar et al., 2018). When considering the remaining fit indices, all values met the recommended criteria. Therefore, it can be concluded that the adjusted structural equation model demonstrates an acceptable model fit and provides reliable parameter estimates, supporting its validity for further analysis and practical application, as depicted in Figure 3.

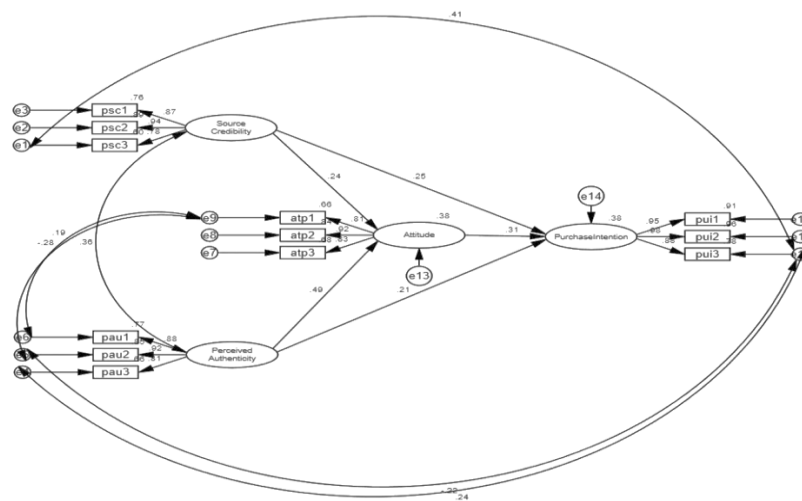


Figure 3 Adjusted Structural Equation Model (SEM) with Goodness-of-Fit and Standardized Solution

The hypothesis testing results revealed that Hypothesis 1, which posited that perceived source credibility of influencers has a direct positive effect on consumers' attitudes toward online products in Thailand's Andaman provinces, was supported with statistical significance at the 0.001 level, and a standardized path coefficient of 0.237. Similarly, Hypothesis 2, which proposed that perceived source credibility has a direct positive effect on online purchase intention, was also supported at the 0.001 level, with a standardized path coefficient of 0.249. In the case of Hypothesis 3, which examined the effect of perceived authenticity of influencers on consumer attitudes toward online products, the results demonstrated a statistically significant direct positive effect at the 0.001 level, with a path coefficient of 0.492. For Hypothesis 4, which assumed that perceived influencer authenticity has a direct positive effect on consumers' online purchase intentions, the findings confirmed statistical significance at the 0.001 level, with a path coefficient of 0.212. Regarding Hypothesis 5, which stated that consumer attitudes toward online products have a direct positive effect on purchase intention, the results supported this hypothesis as well, with a statistically significant path coefficient of 0.308 at the 0.001 level. Overall, the structural equation model confirmed that perceived source credibility, perceived authenticity, and consumer attitude significantly contribute to the prediction of online purchase intention. The model demonstrated acceptable explanatory power, with an Adjusted R^2 of 0.38, indicating that 38% of the variance in online purchase intention could be explained by the independent variables in the model.

CONCLUSION AND FUTURE WORK

The findings of this study reaffirm the critical role of source credibility and authenticity of influencers in shaping both consumer attitudes and purchase intentions toward online products in the Andaman provinces of Thailand a unique context characterized by its vibrant tourism economy, dynamic consumer behavior, and ongoing engagement with digital culture. The discovery that source credibility directly influences consumer attitudes ($\beta = 0.237$) and online purchase intention ($\beta = 0.249$) supports the psychological mechanisms suggested by previous literature, including Jia (2022), Belanche et al. (2021), and Rungruangjit (2022). These studies emphasize that consumers tend to assess information quality through the lens of socio-psychological characteristics of the source particularly when the source exhibits expertise, sincerity, and the ability to form parasocial relationships. When influencers are perceived as credible, consumers are more likely to develop trust, which serves as a foundational element in forming positive attitudes and strong purchase intentions. Likewise, authenticity emerged as the most influential factor on consumer attitudes ($\beta = 0.492$) and also demonstrated a direct effect on purchase intention ($\beta = 0.212$). This is consistent with the perspectives of Jha et al. (2025), Shoenberger and Kim (2023), and Pittman et al. (2022), who emphasize that naturalness, lack of pretense, and genuine intention in influencer communication help reduce skepticism toward advertising while fostering emotional connections between consumers and brands. In the specific case of the Andaman provinces, where local consumers and tourists alike are heavily exposed to online media, authenticity becomes a powerful communication strategy, especially for online products that lack physical tangibility.

Another notable finding of this research is the confirmation that consumer attitude has a direct and significant influence on online purchase intention ($\beta = 0.308$), underlining the role of attitude as a pivotal mediator between consumer perceptions and behavior. This finding aligns with Zhao et al. (2024) and Ilieva et al. (2024), who demonstrate that positive attitudes toward brands shaped by influencer attributes such as credibility and authenticity translate into higher purchase intentions. This phenomenon can be further explained by behavioral models such as the Theory of Reasoned Action (TRA) and the Theory of Planned Behavior (TPB), both of which underscore the predictive power of attitudes in consumer decision-making.

The structural model developed in this study also showed that the combination of source credibility, authenticity, and consumer attitude could jointly explain 38% of the variance in online purchase intention (Adjusted $R^2 = 0.38$). This level of explanatory power is considered practical for real-world application, particularly in digital marketing strategy formulation in distinctive areas such as the Andaman provinces, where consumer behavior is influenced by external factors like tourism, consumption culture, and intensive social media use. These analytical results provide valuable insights for policy development aimed at enhancing the digital economy, supporting e-commerce, and guiding the appropriate use of influencer marketing.

From a practical standpoint, the study highlights that entrepreneurs and marketers should prioritize the selection of genuinely authentic influencers, rather than focusing solely on follower count or fame. Authenticity can be translated into consumer trust and emotional attachment, which are key drivers of purchase behavior at a psychological level. Meanwhile, credibility remains a fundamental attribute that must be consistently maintained through demonstrable knowledge, expertise, and alignment with the brand image. Moreover, brand communication should aim to appear non-commercially driven, enabling consumers to perceive sincerity in messaging, which in turn contributes to the formation of stable, long-term attitudes.

At the policy level, the government should support training programs for local entrepreneurs in the Andaman provinces, equipping them with knowledge on effective influencer marketing practices. Furthermore, collaboration with digital platforms and content creators should be encouraged to develop content that aligns with the preferences and behavioral patterns of local consumers. In addition, the use

of technologies that enable behavioral analytics and campaign performance tracking should be promoted to assess the effectiveness of strategies focused on credibility and authenticity in a systematic and measurable way.

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KEY FACTORS BEHIND GAMERS' URGE TO TOP UP ONLINE GAMES IN BANGKOK AND VICINITY

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ABSTRACT

The objectives of this research were to study the factors that affect the motivation to top up online games of game consumers in Bangkok and vicinity. The sample used in the research was online game consumers in the Bangkok and vicinity using a random group method with a total of 370 people. The research tool was a closed-ended questionnaire. Qualitative descriptive statistics, including percentages and frequencies, are used to analyze population characteristics. Averages and standard deviations, are used to analyze the level of opinion and statistics. Inference includes analysis of multiple linear regression equations to test the path, relationship between variables, and priority of variables. The research findings revealed that the motivation to top up online games in Bangkok and vicinity is the fun factor. Factors such as social interaction in the game, perspective factors on in-game items, and emotional value factors. Online game service business owners should focus on producing games that are quality, fun, and have an in-game system that supports the interaction between players and in-game items.

Keywords: Online Games, Purchase, Top up, Purchase Motivation

INTRODUCTION

In the 1990s, the advent of the internet by households brought a big transformation in the online gaming industry. From the original design of the game only for players to try to get the highest score, it has become a platform that allows players to compete or cooperate with others around the world. This change has made the game a tool to communicate and build social media. In the early days, game sales focused on selling products in disc format, known as "Game as a Product".

When high-speed internet comes in, it plays an important role. Game developers have started to make money by selling add-on content after the game has been released. This change gave rise to the concept of "Game as a Service", which is similar to software as a service models such as Adobe Creative Cloud and Microsoft Office 365. It satisfies players and increases the life expectancy of the game. It helps to reduce the cost of developing new games [1].

At present, Online games are very popular. Players not only get fun by playing the game, but also socialize and meet new friends in the virtual world with beautiful graphics and the ability to create new identities. Players can hide their true identities and customize their character's characteristics as they wish. This creates a vibrant and fast-growing online community.

The online gaming market in Thailand continues to grow. The value is up to 10 thousand million baht. per year. MMORPG (Massive Multiplayer Online Role-Playing Game) is the most popular. It has a market share of up to 54% [2].

Most of the online game business in Thailand is a game as a service, where game importing companies buy game copyrights from abroad and make them available for free download. The main income comes from players buying in-game items such as various items or VIP status, which provides more comfort and advantage in playing.

With rapid growth and high potential. The online gaming market in Thailand still has a lot of opportunities to grow due to the increasing number of internet users and the high popularity of online games among players of all ages.

From the above data, it can be seen that online games are very popular, including the impact of the entry of high-speed internet that promotes communication and the creation of an online game society today, and also affects the behavior of online game consumers. Therefore, the researcher is interested in studying and researching to know the factors and motivations for topping up online games of consumers in Bangkok and vicinity. It also gives rise to strategic planning for online gaming businesses. entrepreneur The data can be used to plan marketing and develop online games to meet the needs of players in the modern era, and scholars and researchers can also use the data as a basis to study and develop future research on the online game industry and communication in the virtual world.

METHODOLOGY

Research on Factors Affecting the Motivation to Top Up Online Games of Game Consumers in the District. Bangkok Metropolitan Area is a quantitative research by means of survey and using online questionnaires as a tool to collect data with the following methodology:

Population and sample determination

The demographic group used in this study is people who play games and are interested in online games. They have experience in top-up in online games or on social media games, which the population group will be those who live in the Bangkok metropolitan area and its vicinity.

Research samples and sampling

In this research, the population is the consumer of online games. In the Bangkok metropolitan area and its vicinity, because the actual population cannot be known. The sample in this study was calculated using the sample size formula in case of a large population.

For the number of 370 people calculated, convenience sampling was carried out to collect data by selecting players who live in Bangkok and vicinity, and like to play games and recharge in the online game.

Research tool

The research tool was a questionnaire.

Research operation

The researcher created the research to study the factors that affect the top-up with the following steps:

1. Study the principles of creating a questionnaire.
2. Study the documents, concepts, theories, articles, and research related to the choice of top-up
3. Define the structure of the content of the questionnaire according to the conceptual framework and objectives of the research.

Data Collection

The researcher will prepare a questionnaire through Google Form by sending the questionnaire to various social media such as game-related pages on Facebook, as well as Facebook groups that are sources of community of players interested in games, such as ExtremeIT, Gaming Dose Community, etc., in order to reach the target audience directly. and convenient for data collection.

Research tool reliability test

Reliability tests were conducted using a questionnaire based on a sample of 130 respondents to ensure that respondents had an understanding of the questions and that the questions used could be answered realistically, and to determine the confidence of the questionnaire using Cronbach's Alpha Coefficient. The questionnaire was conducted using a total of 30 experimental samples. The threshold of the appropriate confidence level that should be in the test is 0.7 [3].

Statistics and data analysis

The data of the research was analyzed to test the hypothesis using descriptive statistics. It is a statistic used to describe the characteristics of the data collected from the sample used in the study in terms of percentages, mean, standard deviation, and multiple regression.

The hypothesis test of research is to test or verify the researcher's belief whether it is true or not by collecting real data to test the beliefs as follows. It was found that in this study, multiple regression test statistics were used to test the relationship of all factors used in the study. Influence the intention to recharge in online games.

RESULTS

General information of respondents

The majority of the respondents were male, 329 people, or 88.9 percent, and 20 women, or 5.4 percent. 11 people did not specify for gender, accounting for 3 percent, and LGBTQIA+, 10 people, accounting for 2.7 percent.

Considering the age of the respondents, it was found that the largest number of samples aged 19-24 years was 202 people, accounting for 54.6 percent, followed by the 25-30 years old group with 79 people, accounting for 21.4 percent, 52 people of the sample aged 31 years and over, accounting for 14.1 percent, and 18 years old, 37 people, accounting for 10 percent, respectively.

Considering the occupation of the respondents, it was found that the sample group of students had the largest number of students, 194 people, accounting for 52.4 percent, followed by company employees/contractors, 86 people, accounting for 23.2 percent, the sample group is a part-time/freelancer,

65 people, accounting for 17.6 percent, and a sample of 25 civil servants/ civil servants, accounting for 6.8 percent, respectively.

Considering the amount of money spent on in- game top- ups per month of respondents, it was found that the sample group topped up less than 1,000 Baht per month. The largest number was 213 people, accounting for 57.6 percent. This was followed by 1,000 – 3,000 Baht per month with 86 people, accounting for 23.2 percent. More than 10,000 Baht per month 37 people, accounting for 10 percent, 3,000 – 6,000 Baht per month, 25 people, accounting for 6.8 percent, and a sample of 6,000 – 9,000 Baht per month, 9 people, accounting for 2.4 each percent, respectively.

Level on the fun factor

There are the following levels of opinions: No. 1: You are satisfied with the game you are playing. The average is very high, which is equal to 4.04. There is a high level of average, which is equal to 3.80, and 3rd place, you think the game you are playing is a good game. There is a high level of average, which is equal to 3.75.

Level on social interaction factors within the game

The level of opinions on social interaction factors in the game is as follows: No. 1: You want to play games when you see people around you playing this online game. The average is very high, which is equal to 3.43. The average level is 3.33, and the 3rd place is that you play online games to find opportunities to interact with others. The average level is moderate, which is 3.02.

Level of opinion on the item perspective factor in the game

The level of opinion on the in-game item perspective factor is as follows: No. 1: You feel good about owning the in-game item. The average value is very high, which is equal to 4.13. The average level is very high, which is equal to 4.02, and 3rd place: The in- game item is valuable to you. The average level is very high, which is equal to 3.63.

Level of opinion on sentimental value factors

There are the following levels of opinions: No. 1: You play games because the games make you feel excited. The average value is very high, which is equal to 4.15. The average level is very high, which is 4.06, and the third place is that you feel emotionally connected with the game, which is very high, which is 4.01.

Level of opinion on challenges and overcoming factors

There are the following levels of opinions: 1st place: You play the game to win yourself and other players. The average is very high, which is equal to 3.36. It has an average level of 3.03 and 3rd place, so it is very important that you play this game as soon as possible. Yes, the average level is moderate, which is equal to 2.89.

Level of opinion about the comfort factor of use

The level of opinions on the comfort factor is as follows: No. 1 Good game design makes you want to continue playing this game. The average is the highest level, which is equal to 4.50. The average level is the highest which is 4.43 and the 3rd place is that you want to continue playing this game because the game has a good service and the highest average level which is 4.26.

Level of opinion on in-game recharge motivation factors

The level of opinion on the motivation factor for recharging in the game is as follows: No. 1: You decide to buy the product immediately when you have the intention to buy. The average value is very high, which is equal to 3.54 Rank 2: It doesn't take long for you to make a decision to buy various products, the average level is 2.99, and the third place is that you can make quick purchase decisions.

Fun factor hypothesis test factors of interaction with society in the game, factors of perspective on items in the game, sentimental value factor challenges and overcoming factors, and comfort factors for recharge motivation in the game in the Bangkok and vicinity.

Fun factor, it was found that the fun factor is a variable that is imported into the equation, so it is a variable that influences the motivation to top up in the game in Bangkok and vicinity. The coefficient of the fun factor in the prediction equation, it is equal to 0.318, which can explain that the fun factor has a positive influence on the motivation to top up in the game in Bangkok and vicinity.

Factors of interaction with society in the game, it was found that the factor of interaction with society in the game was a variable that was imported into the equation. Therefore, it is a variable that influences the motivation for recharging in the game in Bangkok and vicinity. The coefficient of social interaction factors in the game in the prediction equation, it is equal to 0.142, which can explain that the social interaction factor in the game has a positive influence on the motivation to recharge in the game in Bangkok and vicinity.

Perspective on in-game items, it is found that the perspective factor on in-game items is a variable that is imported into the equation. Therefore, it is a variable that influences the motivation for recharging in the game in the Bangkok and vicinity. The coefficient of the perspective factor on in-game items in the prediction equation This can be explained by the factor of perspective on in-game items has a positive influence on the motivation to top up in-game in Bangkok and vicinity.

Sentimental value factor, it was found that the emotional value factor is an imported variable, so it is a variable that influences the motivation to recharge in the game in Bangkok and vicinity. The coefficient of the sentimental value factor in the forecast equation, it is equal to 0.168, which can be explained by the sentimental value factor. There is a positive influence on the motivation to top up the game in Bangkok and vicinity. Top up in online games is even more abundant.

It was found that the challenge and overcoming factors were variables that were excluded from the equation, so they did not affect the motivation to recharge in the game in Bangkok and vicinity at a statistically significant level of 0.05.

The convenience factor was found to be a variable that was excluded from the equation, so it was a variable that did not affect the motivation to recharge in-game in Bangkok and vicinity at a statistically significant level of 0.05.

Results of Hypothesis Test

Results of Hypothesis Test 1: Motivation to top up in online games in Bangkok and its vicinity
= 1.483 + 0.318 Fun factor + 0.142 Social interaction factor in the game + 0.173 Perspective factor on in-game items + 0.168 statistically significant sentimental value factor of 0.05

The results of hypothesis 2 were that the quality of online games did not affect the choice of services and top-up decisions of game consumers in the Bangkok and vicinity because there was no statistically significant correlation of 0.05.

CONCLUSION

According to the results of this study, the motivation to top up online games in Bangkok and vicinity is the fun factor. Factors such as social interaction in the game, perspective factors on in-game items, and emotional value factors. Online game service business owners should focus on producing games that are quality, fun, and have an in-game system that supports the interaction between players and in-game items that are interesting to gamers to make players feel the same emotions and immerse themselves in the game. Modern games can entertain the players, hence it is an incentive to top up in-game money.

Gamers themselves can play games to have fun for themselves, but they must know their discipline and duties. There is a division of working time, playing games, and planning expenses so as not to affect the work and life.

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A LITERATURE REVIEW FOR DEVELOPING A CONCEPTUAL FRAMEWORK TO STUDY FACTORS INFLUENCING THE INTENTION TO PURCHASE GREEN PRODUCTS ONLINE IN THAILAND

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ABSTRACT

In recent years, consumer awareness regarding environmental sustainability has grown significantly, influencing purchasing behavior toward green products, particularly in the digital marketplace. This study aims to develop a conceptual framework that identifies key factors affecting consumers' intention to purchase green products online in Thailand. Through a systematic literature review of academic sources published between 2020 and 2024, five primary constructs were identified: parasocial interaction, perceived green innovation, subjective norm, consumer attitude, and purchase intention. The findings suggest that these variables play a crucial role in shaping consumer behavior in the digital era, where social media and influencer marketing are prominent. The proposed conceptual framework provides a foundation for future empirical research using Structural Equation Modeling (SEM) to examine the interrelationships among these factors. It also offers practical implications for marketers and entrepreneurs seeking to promote environmentally friendly products through effective digital strategies. Limitations of the current study include its reliance on secondary data and a limited scope of source diversity. Future research is recommended to conduct quantitative studies to validate the proposed framework and expand demographic diversity to enhance generalizability and real-world applicability.

Keywords: Green product, online purchase intention, parasocial interaction, green innovation, consumer behavior, Thailand

INTRODUCTION

Currently, consumer behavior regarding the purchase and use of green products has become increasingly important, as people are more aware of the environmental impacts caused by their consumption habits than in the past (Martin & Simintiras, 1995). The consumption of environmentally friendly products is no longer just a trend but a significant issue that affects various aspects of society, especially in an era where digital technology plays a vital role in driving the economy and supporting sustainable development. Green products contribute not only to reducing environmental impacts but also to supporting countries and organizations in achieving sustainability goals (Wang et al., 2024).

In Thailand, government agencies and various organizations have begun to recognize the importance of promoting environmental policies through concrete strategies and campaigns. A clear example is the collaboration between the Thailand Environment Institute and the Ministry of Industry, which aims to promote environmentally friendly production and consumption. This includes designing products with longer life cycles and reduced environmental impact (Thailand Environment Institute, 2023). In addition, the Pollution Control Department under the Ministry of Natural Resources and Environment has implemented policies encouraging government sectors to procure eco-friendly products and services (Pollution Control Department, 2024). Similar initiatives have also been carried out by other organizations such as the Department of Environmental Quality Promotion and the Ministry of Natural Resources and Environment (Department of Environmental Quality Promotion, 2023; Ministry of Natural Resources and Environment, 2023).

At the same time, general consumers have also begun to show environmentally conscious behavior through their purchasing decisions, increasingly opting for green products. This is because environmental awareness has become a key factor influencing modern consumer purchasing behavior (Costa et al., 2021; Kamalanon et al., 2022; Ahmed et al., 2023). Such trends are supported by studies indicating that consumers are becoming progressively more conscious of environmental issues (Saari et al., 2021; Usman & Balsalobre-Lorente, 2022; Munawar et al., 2022).

The role of social media is another factor that cannot be overlooked, as it has a significant impact on shaping consumers' attitudes and purchase intentions (Faisal & Ekawanto, 2021; Iqbal et al., 2022). Therefore, organizations and businesses related to green products must inevitably adjust their marketing strategies to align with consumer behavior on social media platforms. Moreover, presenters or influencers who deliver product information on these platforms also play an influential role in shaping product perception, as their presentation styles and personal traits are critical in building consumer awareness and interest in green products (Kurdi et al., 2022; Dinh & Lee, 2022; Majeed et al., 2021).

From the aforementioned context and significance, the researcher is interested in studying the topic: "A literature review for developing a conceptual framework to study Factors Influencing the Intention to Purchase Green Products Online in Thailand." The goal is to develop a conceptual framework that can be used to examine or build a reference model to support decision-making among entrepreneurs or business owners within the green product industry ecosystem, which is expected to generate a positive impact on the country's economy in the long run.

OBJECTIVE

1. To study and review the literature related to potential variables, which include the para-social interaction of product presenters, perceived green innovation, subjective norm, consumer attitude, and the purchase intention of green products online in Thailand.
2. To develop a conceptual framework that can serve as a foundation for examining and constructing a structural equation model (SEM) of the factors influencing the purchase intention of green products online in Thailand.

METHODOLOGY

The population determined for this study consists of research articles, theses, documents, and literature related to para-social interaction of product presenters, perceived green innovation, subjective

norm, consumer attitude, and the purchase intention of green products. These are complete and full-text academic sources conducted between 2020 and 2024 (B.E. 2563 to 2567), and all are considered secondary sources. The researcher applied four criteria in the selection of documents: authenticity, credibility, representativeness, and meaning, as proposed by Scott (1990). All selected sources must be verifiable and accessible through recognized academic journal databases. The author conducted the literature review and developed the research article independently, with the assistance of generative AI used solely for translating the content from Thai to English.

Literature Review

Zheng, Luo, and Shang (2022) studied the effects of parasocial relationships and found that semi-involved interactions between consumers and influencers positively influence both trust and brand attitude. Consumers who feel that they "know" or are "close to" an influencer are more likely to trust their recommendations and perceive the promoted brand as more credible. This sense of connection often leads to clear behavioral responses, such as purchasing the product or recommending it to others. Similarly, Lin, Crowe, Pierre, and Lee (2021) investigated the effects of parasocial interaction, focusing on well-known Instagram influencers, referred to as "Instafamous Influencers." Their study revealed that parasocial interactions contribute to the formation of positive brand attitudes among followers. These followers often feel an emotional bond with the influencer and perceive them as sincere, which is a critical factor in enhancing the perceived value of the brand and fostering purchase intention. Furthermore, research by Ermeç (2022) emphasized the importance of the message source and the role of parasocial interaction in consumers' purchasing decisions. The study showed that consumers with high levels of parasocial interaction tend to respond more positively to influencer recommendations than to traditional advertising. These consumers are also more likely to share positive experiences through electronic word-of-mouth (e-WOM), which serves as a powerful mechanism for reinforcing positive brand attitudes.

Based on the above, the researcher proposes the following hypothesis: Parasocial interaction has a direct positive influence on consumers' attitude.

Venciute et al. (2023) explored the role of employees as brand advocates through social media and found that parasocial relationships with these employees acted as a mediating factor influencing consumers' attitudes toward the brand. This was particularly evident when employees presented themselves as authentic and fostered a sense of closeness with their followers online. These positive feelings were shown to enhance consumers' intentions to support the brand or even purchase its products. Similarly, Taher et al. (2022) investigated the role of parasocial relationships between followers and influencers in the beauty product sector on social media. Their study confirmed that parasocial relationships function as a key mediator between an influencer's perceived reputation signals and consumers' purchase intentions. The more consumers felt emotionally connected or bonded with the influencer, the more likely they were to trust the influencer's recommendations, which subsequently led to stronger purchase intentions. In the context of celebrity endorsements, Gong (2021) examined factors influencing the effectiveness of celebrity product endorsements on microblogs. The study found that parasocial interaction, alongside brand credibility and product relevance, directly affected purchase intention. Emotional engagement with the influencer or celebrity played a particularly strong role, as consumers with higher emotional involvement were more receptive to marketing messages and responded to them more deeply.

Based on the above, the researcher proposes the following hypothesis: Parasocial interaction has a direct positive influence on consumers' purchase intention of green products online in Thailand.

In the modern era, consumers are becoming increasingly environmentally conscious, prompting brands to develop eco-friendly innovations commonly referred to as green innovations in order to create product value and respond to market trends. Numerous studies have confirmed that perceived green innovation significantly influences consumers' positive attitudes toward both products and brands. One notable study by Moslehpour et al. (2023) examined consumer behavior in Taiwan regarding the intention to purchase green products, especially those involving environmentally focused innovation. The findings indicate that consumers' perceptions of eco-innovation affect not only their purchase intentions but also directly influence their attitudes. In particular, when consumers recognize that a brand or product has adopted environmentally responsible innovations, they tend to develop greater appreciation and trust toward the brand. This translates into more favorable attitudes in terms of brand image, perceived value, and acceptance of the product. On another front, although the study by Arachchi and Samarasinghe (2023) focused on impulse buying behavior in AI-mediated retail environments, it also provided insights into consumer attitudes toward innovation. By applying the Technology Acceptance Model (TAM), the study explored how consumer attitudes toward technology and their level of innovativeness influenced their purchasing behavior. The results showed that the more positively consumers perceived innovation, the more responsive they were to technology-driven marketing, and the quicker they made purchasing decisions. By linking these two studies, it becomes clear that whether consumers engage in planned purchases (such as green products) or impulsive buying in AI-driven systems, their attitudes toward innovation play a pivotal role. Specifically, when consumers perceive innovation as valuable and environmentally beneficial, such perception fosters positive attitudes and becomes a major driving force behind the behaviors of modern consumers.

Based on the above, the researcher proposes the following hypothesis: Perceived green innovation has a direct positive influence on consumers' attitude.

In an era where consumers place increasing importance on sustainability and innovation, green innovation not only reflects a brand's environmental responsibility but also serves as a key motivator in consumer purchase decisions. Numerous studies have demonstrated that the perceived value of innovation directly influences purchase intention in a positive manner. Moslehpour et al. (2023) examined factors influencing consumers' intention to purchase green products in Taiwan, focusing on eco-innovation and green product perception. Their findings revealed that consumers who perceive products and services as environmentally friendly and modern tend to develop more favorable attitudes toward the brand and exhibit higher purchase intention. In other words, perceived green innovation significantly affects consumer behavior in a positive direction. In addition, Li et al. (2021) explored the effects of perceived value, including elements of innovation, cultural significance, and aesthetic appeal, in the context of products from the Palace Museum in China. Their study found that consumers who perceived products as novel, fascinating, and distinct from conventional items were more likely to intend to purchase them. Innovation in these products enhanced emotional satisfaction and contributed to a more positive brand image. Similarly, Li et al. (2022) investigated the factors affecting purchase intention for innovative products in China and found that perceived innovation plays a crucial role. Consumers who viewed products as new, technologically advanced, or creatively designed were more likely to try and purchase them compared to general consumers. This highlights innovation's effectiveness in generating intrinsic motivation among buyers. Taken together, these three studies suggest that whether innovation is environmental or cultural in nature, consumers' perception of a product as "new" and "valuable" is a powerful driver of purchase intention. This influence becomes even more significant when aligned with modern consumption trends that prioritize sustainability such as the growing demand for green products in Thailand.

Based on the above, the researcher proposes the following hypothesis: Perceived green innovation has a direct positive influence on consumers' purchase intention of green products online in Thailand.

In the consumer decision-making process, subjective norm also known as the influence of reference groups serves as a significant social driver, especially in shaping attitudes toward products, consumption behavior, or financial decision-making. Numerous studies have shown that the perception of expectations from others, such as family, friends, or broader society, can directly influence consumers' views and feelings toward particular actions or choices. Van Tonder et al. (2023) investigated consumer behavior in relation to green customer citizenship behaviours, which refer to ethically driven, environmentally conscious consumption patterns. The study emphasized the role of both personal and social factors, including subjective norm, defined as an individual's perception of how significant others expect them to behave. The findings indicated that subjective norm has a significant influence on consumer attitudes and can positively encourage environmentally responsible consumption. In essence, if consumers perceive that those close to them value eco-friendly behavior, they are more likely to adopt favorable attitudes and subsequently exhibit those behaviors themselves. Similarly, Yoopetch and Chaithanapat (2021) explored the factors influencing individuals' intention to invest in stocks, identifying subjective norm as one of the key variables. Their study revealed that social expectations have a direct impact on the financial attitudes of investors, particularly among retail investors or those with limited experience. When individuals recognize that their family or social circle supports stock investment, they are more likely to develop positive attitudes toward investing. Such attitudes can ultimately lead to tangible financial decision-making behaviors.

Based on the above, the researcher proposes the following hypothesis: Subjective norm has a direct positive influence on consumers' attitude.

In modern consumer behavior, social influences such as subjective norm have become a crucial factor directly affecting purchase intention, particularly in relation to products and services with personal or cultural significance such as beauty items or belief-based goods. Numerous studies have confirmed that the expectations of close individuals, including family, friends, and members of one's community, significantly shape consumer decision-making behavior. Intayos, Netpradit, and Samutachak (2021) examined the factors influencing consumers' intention to purchase anti-aging services in Thailand. Their study adopted the Theory of Planned Behavior (TPB), which incorporates attitude, subjective norm, and perceived behavioral control. The results revealed that subjective norm had a statistically significant direct influence on purchase intention. Specifically, when consumers perceived that those close to them such as family or friends held positive attitudes toward using anti-aging services, they were more likely to consider and adopt those services themselves. The expectations of reference groups thus acted as a powerful motivational force driving purchasing behavior. Similarly, Aslan (2023) studied Muslim consumers in Turkey regarding their intention to purchase halal-certified food products. The study incorporated various influencing factors including halal awareness, halal certification, trust, attitude, and importantly, subjective norm. The findings indicated that reference groups such as family or religious communities had a strong impact on purchase intention. Consumers who perceived that members of their group viewed halal consumption as important were significantly more likely to choose halal products.

Based on the above, the researcher proposes the following hypothesis: Subjective norm has a direct positive influence on consumers' purchase intention of green products online in Thailand.

In the digital era, where consumer behavior is rapidly evolving amidst the rise of social media, technology, and global health crises, attitude has become a key determinant directly influencing purchase

intention. Numerous studies have explored the relationship between attitude and purchasing behavior, consistently confirming that a positive attitude toward a product, service, or experience significantly increases the likelihood of consumer purchase decisions. Nguyen, Nguyen, and Le (2022) investigated online shopping behavior during the COVID-19 pandemic in Vietnam by analyzing the relationships between consumer perception, attitude, and subjective norm in relation to online purchase intention. The findings, as summarized in the abstract, indicated that attitude had a direct impact on purchase intention. Specifically, consumers who held a positive attitude toward online shopping viewing it as safe, convenient, and modern were more likely to choose online channels, particularly in a context where travel and health were restricted. In a different context, Song, Kim, and Hwang (2023) studied viewers of "Mukbang" a popular genre of eating broadcasts by analyzing the effects of parasocial interaction and attitude toward content creators on viewers' purchase intention. Utilizing a mixed-methods approach, the study revealed that positive attitudes toward the content creators such as perceiving them as friendly, trustworthy, or relatable—significantly influenced the viewers' feelings toward the featured brands in the videos. This, in turn, led to an increased intention to purchase the products endorsed by the creators.

Based on the above, the researcher proposes the following hypothesis: Consumers' attitude has a direct positive influence on their purchase intention of green products online in Thailand.

RESULTS

Based on the review of relevant literature, the researcher was able to develop hypotheses that form the basis of a structural conceptual framework, as illustrated in Figure 1.

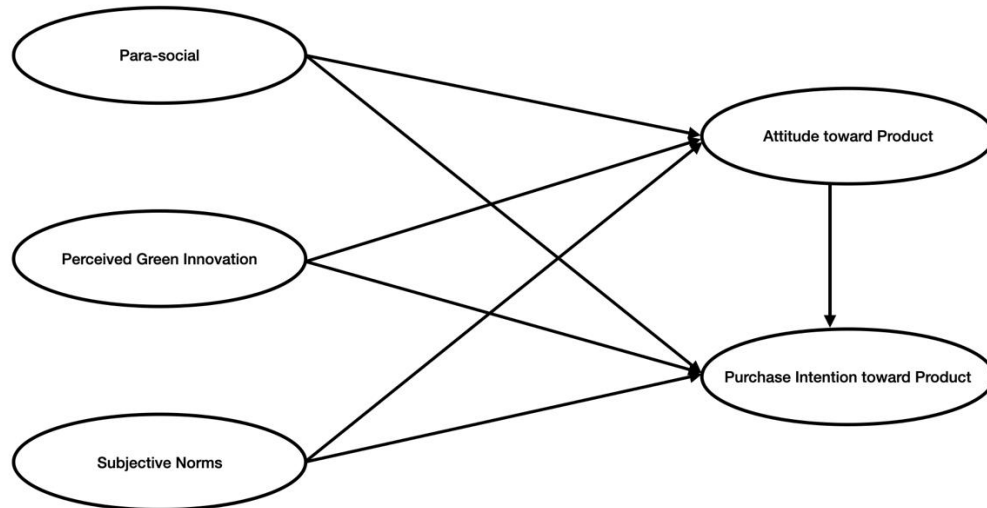


Figure 1. Conceptual Framework

CONCLUSION AND FUTURE WORK

Based on a systematic literature review on the factors influencing the intention to purchase green products online in Thailand, several key variables were identified that can be used to develop a conceptual research framework. These include parasocial interaction of product presenters, perceived green innovation, subjective norm, consumer attitude, and purchase intention. These variables play a significant role in shaping consumer behavior in the modern era, where environmental consciousness is

increasingly valued. Consumers tend to receive most of their information through social media platforms, particularly younger generations who often place their trust in product presenters they admire or feel emotionally connected to—even without any real-life interaction. The findings of this study contribute to the development of a structural conceptual framework that clearly reflects the relationships among these variables. This framework can serve as a foundation for developing a Structural Equation Modeling (SEM) approach to explore consumer behavior more deeply and precisely. However, this study has some limitations that should be addressed in future research. These include the scope of the data considered, which focuses solely on research conducted between 2020 and 2024 and only on sources accessible through academic databases. Consequently, there may be valuable insights from the private sector or civil society that were not analyzed in this review.

For future research, it is recommended to conduct a quantitative study to empirically test the conceptual framework developed in this study by applying the technique of Structural Equation Modeling (SEM). This approach will allow for a systematic and statistically significant evaluation of the relationships among key variables and help validate the hypotheses derived from the literature review. In doing so, it will strengthen the credibility of the model and offer practical implications for designing strategic marketing plans for green products in online platforms. Furthermore, future research should aim to broaden the demographic scope of the study population by incorporating diverse groups in terms of age, geographic region, and socio-economic background. This will ensure that the findings more accurately reflect the real-world behavior of Thai consumers. Comparative analysis between different segments such as youth versus working adults, or urban versus rural consumers could provide deeper insights into the contextual factors and motivations that influence the intention to purchase green products online.

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THE MARKETING MIX FACTORS INFLUENCING THE DECISION TO WATCH

BOXING MATCHES VIA ONLINE PLATFORMS

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ABSTRACT

This study examines the marketing-mix factors that influence the decision to watch boxing competitions via online channels. The objectives were (1) to assess the levels of marketing-mix elements affecting the decision to watch online boxing competitions and (2) to identify which marketing-mix factors significantly influence such viewing decisions. A quantitative research design was employed. The sample comprised 400 individuals who watch boxing competitions online and reside in Bangkok and the Bangkok Metropolitan Region (BMR). Data were collected using a questionnaire administered to a simple random sample. The instrument demonstrated high reliability (Cronbach's alpha = 0.979). Descriptive statistics included frequency distribution, percentage, mean, and standard deviation; inferential statistics involved one-way analysis of variance and multiple regression analysis.

Results indicated that most respondents were female, aged 31–40 years, single, held a bachelor's degree, were employed in the private sector, and earned 20,001–30,000 THB per month. Overall, respondents reported a high level of agreement regarding the marketing-mix factors influencing their decision to watch boxing online, and their viewing decision level was also high. Hypothesis testing revealed that the marketing-mix components of product, place, and physical evidence significantly affected the decision to watch boxing via online channels ($p < .05$). In descending order of influence, the effects were: physical evidence (Beta = 0.301), place (Beta = 0.226), and product (Beta = 0.160).

Keywords: Marketing Mix (7Ps), Decision to Watch, Online Live-Streaming, Boxing Matches, Digital Consumer Behavior

INTRODUCTION

Today, in the digital era, watching live sports online, especially through social media, has rapidly gained popularity. As consumer behavior shifts, many prefer to seek entertainment on digital platforms rather than traditional media like TV or radio. This online popularity stems from its convenience and ability to reach a wider audience (Kaplan & Haenlein, 2010). In the context of boxing, a sport with a unique and niche audience, live streaming on social media not only reaches viewers effectively but also creates a more intimate experience, encouraging greater participation in the event.

Boxing has been deeply ingrained in Thai culture for centuries, standing as one of the nation's most unique sports. However, it currently faces significant challenges. A primary issue is the sport's struggle to maintain a consistent audience, particularly among the younger generation who often perceive boxing as outdated or uninteresting. Furthermore, current production and live-streaming processes often

overlook the factors essential to a high-quality viewer experience. These include subpar visual and audio quality, a lack of interactivity between broadcasters and viewers, and a failure to provide innovative or exciting presentation styles (Kim & Ko, 2012). Without an in-depth analysis of the specific needs and desires of different audience segments, developing effective strategies to overcome these obstacles remains a significant hurdle.

Entrepreneurs in the boxing industry face numerous challenges, most notably a declining volume of on-site spectators. This trend is driven by time constraints and transportation costs, and was further exacerbated by the pandemic, which severely restricted public gatherings. Furthermore, the abundance of online entertainment options has led audiences to shift toward content that better aligns with their evolving preferences. Consequently, the development and adaptation of online live-streaming for boxing matches is now essential—not only to increase viewership but to better serve the needs of the younger generation.

Adapting to the digital era involves more than simply moving boxing matches to online streams; it requires a comprehensive shift in strategy. This includes leveraging AI technology and big data to analyze audience behavior, as well as developing platforms with interactive features that allow fans to comment and support their favorite fighters in real time. These elements do more than just heighten the excitement—they foster a deeper relationship between the brand and its consumers (Ghosh, 2022). Additionally, creating targeted content, such as short documentaries on renowned boxers or "behind-the-scenes" rehearsal footage, adds significant value and provides viewers with a more inspirational experience.

From another perspective, implementing a marketing strategy to attract more viewers is another crucial factor that needs to be studied more, specifically the Marketing Mix—also known as the 7Ps—which comprises Product, Price, Place, Promotion, People, Process, and Physical Evidence (Booms & Bitner, 1981). Studying these factors will help entrepreneurs understand profoundly the audiences' desires and expectations. Furthermore, this framework helps identify the specific factors that influence whether an audience chooses to watch boxing matches online. For instance, regarding Product, enhancing broadcast quality through high-definition technology and providing in-depth information on boxers can significantly increase viewer engagement. In terms of Price, setting an appropriate price such as offering free ad-supported content alongside a reasonably priced premium membership can grow the audience base and secure long-term revenue. Furthermore, selecting the right Place by utilizing popular streaming platforms is essential for maximizing reach. For Promotion, organizing interactive activities or giveaways during the broadcast can heighten excitement and boost overall participation.

In addition, developing audience interaction through People, such as employing knowledgeable sports commentators with unique personalities, plays a vital role in engagement. Improving the Process—specifically by reducing the complexity required to access content—further enhances the viewer experience. Similarly, the development of Physical Evidence, such as intuitive UX/UI design and an aesthetically pleasing, easy-to-use application, is essential. Collectively, these factors contribute to increased user satisfaction and help build long-term brand loyalty.

In conclusion, studying the marketing mix factors that influence the decision to watch boxing competitions via online channels is essential. The knowledge gained from this research will support live broadcasts in creating sustainable value for both audiences and content creators. Furthermore, it provides a guideline for developing marketing strategies that truly meet the needs of digital-age consumers—particularly by enhancing the customer experience, building engagement with target audiences, and driving sustainable growth within the boxing industry for the future.

OBJECTIVE

1. To study the demographic factors influence the decision to watch boxing competitions via online channels.
2. To study the impact of marketing mix factors on the decision to watch boxing competitions via online channels.

Research Hypothesis (If Any):

1. There is a significant relationship between demographic factors and the decision to watch boxing competitions via online channels.
2. The 7Ps marketing mix elements significantly influence the consumer's decision to watch boxing competitions via online channels.

METHODOLOGY

Population and Sample

This study utilized a survey research methodology. The target population consisted of 15,624,700 individuals who watch boxing competitions online and reside in Bangkok and the Bangkok Metropolitan Region (BMR) (Department of Provincial Administration, Ministry of Interior, 2024). The sample size was determined using Yamane's formula, which yielded a result of 399.99. Consequently, a total sample size of 400 participants was used for this research.

instruments used in this research

The development of research instruments involves several steps, including the following:

1) To design the research instruments, the author reviewed relevant research papers and theoretical concepts of marketing mix elements which serve as the core factors of this study. Subsequently, a four-part questionnaire was developed for data collection. The first part gathers demographic data, including gender, age, marital status, education, occupation and monthly income, through a series of closed-ended checklist questions. The second part evaluates the influence of the 7Ps marketing mix on the decision to view boxing matches online. It consists of 35 items measured on a five-level rating scale. The questions are distributed across the seven pillars of the marketing mix: (1) Product, (2) Price, (3) Place, (4) Promotion, (5) People, (6) Process, and (7) Physical Evidence. The third part is a series of 30 close-ended questions also measured on a five-level rating scale, ranging from 1 (Strongly Disagree/Least) to 5 (Strongly Agree/Most). Finally, the fourth part features open-ended questions designed to gather additional opinions and recommendations from the respondents.

2) The quality control process for the research instrument involved assessing content validity. The questionnaire was reviewed by three experts using the Index of Item-Objective Congruence (IOC). The analysis yielded an IOC score of 0.67, satisfying the standard acceptance criteria (Rovinelli & Hambleton, 1977). Subsequently, the reliability of the instrument was evaluated through a pilot test with 30 participants. The internal consistency was measured using Cronbach's Alpha Coefficient, resulting in a value of 0.979. This exceeds the recommended threshold of 0.70, confirming that the questionnaire possesses high reliability across all items (Cronbach, 1990). Consequently, the instrument is deemed of high quality and appropriate for data collection.

Data Collection

This research was conducted using questionnaires. The researcher provided a clear explanation of the study's objectives within the questionnaire, and formally requested the participation of the sample group. Participation was entirely voluntary. The data collection phase was conducted throughout March 2025."

Data Analysis

The data were analyzed using descriptive statistics. 1)Frequency Distribution and Percentage. 2) Mean and Standard Deviation. The methods were employed to describe and analyze the marketing mix factors influencing the decision to watch boxing competitions online:

RESULTS

The study surveyed a total of 400 respondents. The majority were female (48.25%), followed by males (43.50%), and LGBTQ+ individuals (8.25%). The largest age group consisted of individuals aged 21–30 years (41.00%), closely followed by those aged 31–40 years (39.50%). Other respondents included those aged 41–50 years (10.50%), under 20 years (3.75%), 51–60 years (3.00%), and 60 years or older (2.25%). Regarding marital status, most participants were single (73.25%), followed by married (20.50%) and those who preferred not to specify (6.25%).

A significant majority of the sample held a bachelor's degree (70.25%). This was followed by master's degree holders (23.75%), those with less than a bachelor's degree (4.25%), and doctoral degree holders (1.75%). In terms of employment, the highest percentage of respondents were private sector employees (46.75%), followed by civil servants (26.75%), students (13.25%), and the self-employed (9.25%). The remaining 4.00% were unemployed (including homemakers and retirees). The most common average monthly income range was 20,001–30,000 Baht (35.00%). Other reported income levels included 10,000–20,000 Baht (30.75%), 30,001 Baht and above (25.00%), and less than 10,000 Baht (9.25%).

Table 1 Mean and Standard Deviation about the marketing mix factors influencing the decision to watch boxing competitions via online channels:

The marketing mix factors influencing the decision to watch boxing competitions online:	$\bar{X}$	S.D.	Level of Opinion
1. Product	4.28	0.585	highest
2. Price	4.12	0.665	high
3. Place	4.32	0.619	highest
4. Promotion	4.18	0.710	high
5. People	4.28	0.634	highest
6. Process	4.22	0.646	highest
7. Physical Evidence	4.32	0.628	highest
Total	4.25	0.564	highest

Table 1 illustrates that the marketing mix factors influencing the decision to watch boxing competition online were rated at the highest level overall ($\bar{x} = 4.25$). When analyzing individual components in descending order of influence, Place and Physical Evidence ranked highest ($\bar{x} = 4.32$), followed by Product and People ($\bar{x} = 4.28$), Process ($\bar{x} = 4.22$), Promotion ($\bar{x} = 4.18$) and Price ($\bar{x} = 4.12$), respectively.

Table 2 Mean and Standard Deviation about the decision to watch boxing competitions online:

The decision to watch boxing competitions online:	$\bar{x}$	S.D.	Level of Opinion
1. Choosing to watch boxing matches online provides easy and convenient access, allowing you to watch anytime and anywhere.	4.45	0.713	highest
2. Choosing to watch boxing matches online offers higher broadcast quality, such as clearer picture and sound.	4.35	0.672	highest
3. Choosing to watch live boxing online allows you to see your favorite boxers.	4.44	0.705	highest
4. Choosing to watch live boxing online saves you travel time.	4.39	0.734	highest
5. Choosing to watch live boxing online allows you to rewatch or view past matches on-demand.	4.38	0.709	highest
6. Choosing to watch live boxing online provides an exciting viewing experience.	4.33	0.732	highest
7. Choosing to watch live boxing online allows for pre- and post-match analysis, enhancing the viewing experience.	4.37	0.663	highest
8. Choosing to watch live boxing online allows you to receive information from advertisements on various subscribed channels, such as social media.	4.29	0.745	highest
9. Choosing to watch live boxing online provides access to more detailed content about the boxers after subscribing.	4.25	0.773	highest
10. Choosing to watch live boxing online allows you to select your preferred language and subtitles.	4.28	0.764	highest
Total	4.35	0.570	highest

Table 2 illustrates that the factors influencing the decision to watch boxing matches online were rated at the highest level overall ($\bar{x} = 4.35$). When analyzing individual items, every factor was categorized within the highest tier of influence. The top-ranked factor was convenience, specifically the ability to watch anytime and anywhere ($\bar{x} = 4.45$). This was followed closely by the opportunity to watch favorite boxers ($\bar{x} = 4.44$), the benefit of saving travel time ($\bar{x} = 4.39$), and the flexibility to view replays or past matches ($\bar{x} = 4.38$). Respondents also placed high value on pre- and post-match analysis, as these features significantly

enriched the overall viewing experience ($\bar{x} = 4.37$). Other significant factors included broadcast quality, such as picture and sound clarity ($\bar{x} = 4.35$). Additionally Watching live boxing online provides an exciting user experience ($\bar{x} = 4.33$) and grants opportunities to engage with targeted advertisements via various subscribed channels, such as social media ($\bar{x} = 4.29$). Furthermore, the experience is enhanced by the ability to select specific languages or subtitles ($\bar{x} = 4.28$) and gain access to exclusive subscriber content ($\bar{x} = 4.25$), respectively.

Table 3 Mean and Standard Deviation of the decision to watch boxing competitions online

The Marketing Mix Factors (7Ps)	Unstanderized		Standardized	T	Sig.
	Coefficients		Coefficients		
	B	Std. Error	Beta		
Constant	1.094	0.152		7.190	0.000*
1. Product	0.156	0.057	0.160	2.729	0.007*
2. Price	-0.037	0.046	-0.044	-0.810	0.419
3. Place	0.208	0.053	0.226	3.900	0.000*
4. Promotion	0.072	0.054	0.089	1.321	0.187
5. People	0.095	0.063	0.105	1.491	0.137
6. Process	-0.010	0.069	-0.012	-0.152	0.879
7. Physical Evidence	0.274	0.061	0.301	4.479	0.000*
R²= 0.556 Adjusted R²= 0.548					
F= 70.245 Sig. = 0.000*					

* Statistically significant at the level of 0.05

Table 3 presents the results of the Multiple Regression Analysis, evaluating how the marketing mix factors (7Ps) influence the decision to watch boxing competitions online. The analysis reveals that three factors have a statistically significant impact: Product (Sig= 0.007), Place (Sig= 0.000), and Physical Evidence (Sig = 0.000). When analyzing the regression coefficients (B) in order of impact, Physical Evidence exerts the highest influence on the decision to watch boxing competitions online (B= 0.274), This is followed by Place (B= 0.208) and Product (B = 0.156). All three significant factors show a positive correlation with the decision to watch boxing matches online.

The primary independent variables identified in this study are Product, Place, and Physical Evidence. Collectively, these marketing mix factors can predict 55.60% ($R^2 = 0.556$) of the variance in the decision to watch boxing matches online.

Based on the unstandardized coefficients (B), the regression equation is calculated as follows:

$$\hat{U}_I = a + bx$$

Decision to Watch Boxing... = 1.094 + product factor (0.156) + place factor (0.208) + physical evidence factor (0.274)

Based on this study regarding the marketing-mix factors that influence the decision to watch boxing competitions via online channels, the findings are discussed below:

The study of the marketing-mix factors (**7Ps**) influencing viewers' decisions to watch boxing competitions through online platforms can be explained as follows:

Under the marketing-mix factors, Product, Place, and Physical Evidence have the greatest influence on the decision to watch boxing competitions via online channels, with a statistical significance of 0.05. These three factors are directly associated with the broadcast platform, which provides high-quality visuals and audio, expert analysis, and insightful commentary. Furthermore, the platform offers ease of access, a highly consistent live-streaming system, and a playback function. Viewers can also choose their preferred language, adjust viewing angles, and access real-time statistics and match highlights. Collectively, these factors leave a positive impression on online viewers, encouraging them to return to online channels for future live matches. This study aligns with the research conducted by Ekmarong Punpong (2011), who performed a qualitative study on the behavior of Thai Premier League viewers. That case study compared audiences attending matches at the stadium with those watching on television. The findings indicated that viewers utilize social media platforms and the internet to follow league news and rely on these as primary channels for watching match replays. Furthermore, Thai Premier League matches garner equal levels of interest from both television audiences and stadium spectators. For high-profile matches, such as Muangthong United vs. Chonburi FC, fans frequently book tickets in advance online or through Thai Ticket Major. This study also corresponds with the research of Kriang Kitbumrungrat (2022), which examined the factors influencing the decision to watch entertainment programs through social media platforms. The study aimed to analyze the relationship between social factors and the decision to watch programs via social media. Additionally, it sought to analyze the relationship between individual factors—such as lifestyle, attitude, and values—and the marketing mix factors that affect the decision to watch programs through online channels. The study found that the Product factor significantly affects the decision to watch programs via online platforms. Key elements include high-quality visuals and audio, system consistency, creative content, and an overall enjoyable experience. Furthermore, an engaging presentation style and minimal advertising interruptions encourage consumers to choose online channels for their entertainment.

Suggestions from the Research

Based on the study of the marketing-mix factors influencing the decision to watch boxing competition via online channels, the author offers the following suggestions:

1. Regarding marketing-mix elements, the factors of Product, Place, and Physical Evidence are intrinsically linked to the broadcast platform, providing high-quality visuals, system consistency, and special features like language selection and replay functions, these elements significantly affect the decision to watch boxing matches via online channels. Therefore, a broadcasting system must maintain high consistency, superior visual quality, and specialized features that meet viewer needs more effectively than attending a live match at the ring or watching through other traditional channels. Ensuring a high-quality experience will impress viewers, encouraging them to choose online platforms for future matches and recommend them to others. To achieve this, all involved parties, including television stations and sports broadcasting platform providers (e.g., Channel 7HD, True Visions, AIS Play, and YouTube sports channels) should focus on developing systems that support on-demand viewing, multi-language options, and user-friendly interfaces. Furthermore, the Digital Economy

Promotion Agency (Depa) should provide technological support and encourage the development of live-stream sports platforms, particularly for startups developing new technologies for the sports industry. Additionally, the Professional Boxing Association of Thailand should take responsibility for coordinating match management and collaborating with platform producers to enhance the overall online viewing experience for boxing fans.

CONCLUSION AND FUTURE WORK

To enhance the comprehensiveness of future studies regarding marketing-mix factors and online boxing viewership, the author proposes the following directions:

1. While the current study utilized a quantitative approach through structured questionnaires to identify broad trends, future research should incorporate qualitative method by interviewing to obtain more in-depth information
2. To maximize the utility of these findings, it is recommended that research be conducted periodically and continuously to maintain an up-to-date database.
3. Future studies should expand the research scope to include diverse sample groups across different provinces. Broadening the geographic reach will help identify regional similarities or disparities.

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FACTORS AFFECTING TECHNOLOGY USAGE BEHAVIOR OF ROYAL THAI POLICE OFFICERS

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ABSTRACT

This research focuses on the main reason why police officer in the Royal Thai Police (RTP) decided to use technology in order to help while they are on duty. Today cybercrime and digital threats are the major risks to national security, so the Royal Thai Police has invested billions of baht in technological infrastructure. However, there is still a usage gap between the availability of advanced systems which RTP has provided and the actual daily engagement by officers while on duty.

Using the Technology Acceptance Model (TAM) as the foundational framework, this research also includes Subjective Norms according to the strict chain of command and also culture of the police organization. We used a survey as a quantitative approach to collect data from 384 officers, a sample size derived from a total population of 209,003 police officers using the Krejcie and Morgan formula. The analysis focuses on four main areas which are Perceived Usefulness (PU), Perceived Ease of Use (PEOU), User Attitude (AT), and Subjective Norms (SN). Early results show that even though Royal Thai Police has invested a lot of money in technology, whether police officers actually want to use these tools to gain more efficiency in their duty depends mostly on how easy the systems are in order to navigate and the influence of their supervisor in chain of command.

The study provided strategic recommendations on building a technology-friendly culture and improving staff training to optimize human-resources. This ensures that technological investments lead to better public safety and more efficient police work.

Keywords: Technology Acceptance Model (TAM), Royal Thai Police, Digital Transformation, Subjective Norms, Behavioral Intention.

INTRODUCTION

The Royal Thai Police (RTP) plays a main part in the Thai justice system. It is the primary group that enforces the law and keeps the public safe. For over a century, the organization has handled many changes in society from traditional physical threats to more complex modern challenges. However, in the last two decades have a transformation in society unlike anything we have seen before which is the digital revolution. The evolution of high-speed internet, mobile phone/technology, and advance data networks has completely changed the way of criminal activity. Crime is no longer occurs in one area like the old fashion way but turned into "Cyber Crime" which is a borderless and highly technical threat that includes almost everything from massive financial fraud to stealing people's digital identities.

In order to deal with this evolution, the RTP has tried to modernize working process by increasing the innovation and technology budget. According to internal financial reports for 2024, the RTP spent more than 2,900 million baht on digital assets and software infrastructure. This category mostly covers software licenses, investigative databases, and advanced digital forensic tools. This investment has shown that the organizational strategy is to move away from old paper-based workflows toward a data-driven and better technology, to move toward a better way of using technology to gain more efficiency in police work. However, the human side of Royal Thai Police still a major bottleneck. There is an obvious difference between the high-tech tools provided and also the digital gap of the officers who to use that tools. This digital gap often leads to system that officers not often used, not user friendly, poor data entry and lastly a habit of using the old way that no longer effective to arrest today's criminal.

The main problem is not only just a lack of tools but both of how personnel's perspective and how the organization work. For the police officer who work/ patrol on the street, the choice to use a new crime-map or even a digital evidence system are depended on how they feel about it. If they think that the tool actually makes their job easier (**Perceived Ease of Use**) or not and if it helps them reach their work goals (**Perceived Usefulness**) or not. Furthermore, The Royal Thai Police is not the common organization or typical corporate environment, it's more like a paramilitary organization defined by a very strict rank system. So in this context, Subjective Norms which is the pressure from their supervisor and what their co-workers expected are played the main role in how their react and behavior would be.

This research, therefore, aims to analyze these patterns using the Technology Acceptance Model (TAM). By identifying what actually makes people want to use technology in their daily work, The RTP can develop a better strategy for future budget plan in training programs that focus on the personnel engagement getting involved. The final goal which is the most important one is to ensure that the multi-billion baht investment in technology is not wasted on systems that remain unused and then become useless. Instead these tools should become a major tools of Thai police officer to better protect lives and property of the citizens.

OBJECTIVE

1. To evaluate the levels of Perceived Usefulness, Perceived Ease of Use, User Attitude, Subjective Norms, and Behavioral Intention in Royal Thai Police officers.
2. To look into the influence of Perceived Usefulness, Perceived Ease of Use, User Attitude, and Subjective Norms on the Behavioral affect a police officer's decision to use the technology.
3. To create a predictive model to predicts factors which truly change how Royal Thai Police officers use technology.

METHODOLOGY

This research uses a quantitative approach to analyze how the Royal Thai Police (RTP) technology is adopts technology. The research is built on the **Technology Acceptance Model (TAM)** which is a globally and reliable framework for understanding user behavior. In order to better fit for the organization that has "command-and-control" culture like a police organization, the model has been expanded to include **Subjective Norms** as a variable which measures the impact of organizational pressure and the chain of command in Royal Thai Police.

Population and Sampling The study focuses on the entire Royal Thai Police which consists of **209,003 officers** (as of late 2025). To ensure that this data is statistically valid, the sample size was

calculated using the **Krejcie & Morgan (1970)** formula. We required at least **384 respondents** to ensure and to achieve a 95% confidence level. By sampling different ranks and roles, from Patrol Officers to high-level commanders, ensuring representation of the entire Royal Thai Police.

Research Framework and Variables suggests that an officer's decision whether to use technology or not is driven by four main factors:

Perceived Usefulness (PU)

The belief that using digital tools such as crime databases or investigative software will actually improve the efficiency and accuracy of police work.

Perceived Ease of Use (PEOU)

How user-friendly the system feels because if a tool is too complex, hard to understand and operate officers may resist using it, regardless of its benefits.

User Attitude (AT)

How officers feel and also personal attitudes whether they like or against digital transformation.

Subjective Norms (SN)

Pressure from colleagues and superiors. In a top-down hierarchical organization like the Royal Thai Police, following and obeying orders is often the factor what dictates their behavior.

Data Collection and Instrumentation

We will gather data using a three parts structured questionnaire.

1. General demographic information
2. Research variable assessments using a **5-point Likert Scale** from Strongly Disagree to Strongly Agree.
3. A section for open-ended feedback.

Research Hypotheses The study tests four main assumptions:

H1 - Higher perceived usefulness positively influences an officer intention to use technology.

H2 - The greater the ease of use, the more likely officers to use it.

H3 - A positive attitude shows as a main predictor of increased technology usage.

H4 - The formal and informal pressures of the police top-down hierarchy (Subjective Norms) shape how the technology is used by officers.

RESEARCH CONTEXT & STRATEGIC INSIGHTS

The study focuses on the gap between high tech budget and officers performance. The Royal Thai Police has already spent a significant budget more than **2.9 billion baht** into digital software and assets as of 2024 but to be more precise the success is only depends on user acceptance and willing to use this asset not just the size of the budget.

Utility Over Complexity

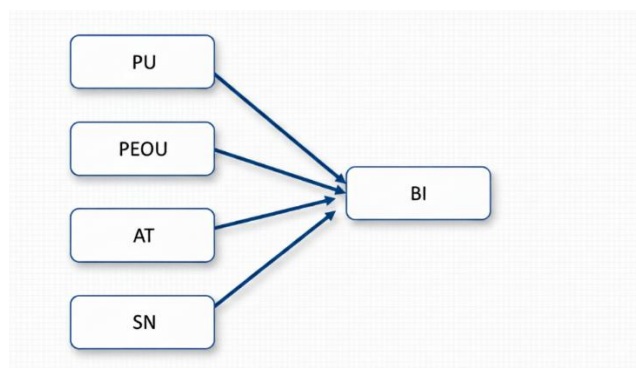
The main focus of this study is to explore whether perceived benefits and usefulness can outweigh difficulty and technical hurdles. In high pressure policing. On Duty an officers might overlook some of a complicated interface if they do believe that the technology will help them solving crimes faster or even protect them from a human errors that could occur. For the RTP, this implies that future technology budget should balance between user friendly design interface with high performance functionality

The Power of the Hierarchy

Unlike a common civilian tech users environment , police officers operate within a strict chain of command. This study focus on that **Subjective Norms** will be a catalyst for digital transformation. When high-ranking commanders demand digital reports, the usage rates among subordinates are expected to climb. This top-down pressure is likely the most effective way in overcoming resistance especially those who have spent more than a decade working with the old traditional paper-based systems.

Conclusion of the Framework

By identifying all of these psychological and organizational drivers, this research will provide a clear strategic roadmap for the RTP. It's no longer about investing in high-end technology software and equipment. It's about changing the internal mindset within organization. The goal is to achieve the purpose where digital tools not only just extra tasks but become a natural and effective extension to increasing the potential of an officer's work.



RESULTS

The analysis of the data will provide a deeper look into how digital change is unfolding within the Royal Thai Police. It's pretty clear that while the physical infrastructure, the high-end hardware and software is already in place, the human element remains in a state of transition.

The Priority of Utility

A key finding of this study is that **Perceived Usefulness (PU)** stands as the main predictor of technology adoption. Officers don't worry about using the new technology that the organization provided if this technology can give the better result and clear advantage in case management or damage prevention. This research suggests that the Royal Thai Police's strategy should focus more on a new tool which based on their practical value and can be benefits for an officer rather than just their modern features

The Barrier of Complexity

We found that the difficulty of a system is one of the main reason which shapes how officers feel about it. Difficulty in navigating the systems can cause technostress among officers. Our research shows that even with a 2.9 billion baht budget, the Return on Investment depends on the user experience (UX) is just as essential as the hardware. If a system feels frustrating to handle, the force will automatically go to paper-based work. To prevent this, we need to move beyond just high technical specs. Our Procurement focus should treat user experience as a main requirement, not just an afterthought.

The Hierarchy Effect

One of the most interesting finding in this research is how much the chain of command impacts the results. While regular people from other organization or company usually choose technology based on what they prefer to use but for police officers that follow the commander in chain of command. when top bosses starts using digital tools and asking subordinates for digital reports, all officers will follows the new protocols. Meaning that this leadership pressure is what really pushes the older generation officers to adapt and change the way they work

Summary of Relationships

Our study confirmed all four hypothesis were supported by the data. Basically, when the system interface is easy to use, officers will see its value more clearly. This combination with pressure from their supervisors determines whether they will use the new technology to gain more efficiency in their work. We also found that an age gap, young officers are interested more in the new technology and software being user friendly, while older officers are mainly driven by the order from their commanders

CONCLUSION AND FUTURE WORK

Digital transformation in the Royal Thai Police is an ongoing process to focus much more than just buying a new hardware. this research shows that if the Royal Thai Police wants to reach the POLICE 4.0 vision, the RTP organization must give priority to the human side and to understanding the social and also personal factor that has a important role to drive officers in order to accept or resist the new technology.

Strategic Conclusions

The RTP's multi-billion baht investment will only pay off and prove worthwhile if the focus shifts toward **Human-Centric Digital Integration**. To reach the goal, we recommend three key steps

1. Simplifying the experience

By stopping to build complicated and not user-friendly tool and focus more on creating all in one platforms that easy to understand and use for officers in daily work.

2. Show the real value

By moving away from technical manual which is boring and less interesting than training. Training should focus on operational tech to show officers exactly how this tool can help them achieve and reach their goal faster or get home to their family on time.

3. Command from the top

By use the RTP's hierarchy to gain more advantage. We need to turn commanders into "Digital Champions" by not just order the other to use tech but to lead and show them by example.

Future Work

This study is just the beginning to keep pushing and moving forward in to the future research which should focus on two main areas

1. Trust and Privacy

As the Royal Thai Police starts using AI, facial recognition , deep learning and smart surveillance, we need to understand on how officers feel about data privacy and whether they really trust the automated systems to keep the privacy data secure

2. Long-term Progress

Since the Royal Thai Police is planning to continue its massive digital budget, we should make a longitudinal study by tracking the same group and analyze them over time. This will show us that if the officers habits actually change as they depend more on technology on their daily life routine.

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FROM MARINE BIO-TRAUMA TO WEARABLE MEANING

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ABSTRACT

Marine plastic pollution causes extensive biological trauma to marine organisms, yet such suffering often remains visually distant and emotionally abstract to the public. Jewelry design, as a body-centered and symbolic medium, offers a unique pathway to translate ecological trauma into tangible and emotionally resonant forms. This study investigates how marine bio-trauma can be systematically transformed into wearable visual language through trauma-oriented eco-jewelry design. A mixed-methods approach was employed, integrating an audience perception survey (n = 220) with practice-based design research. Quantitative analysis examined public emotional responses, acceptance of trauma-themed jewelry, and preferences for design elements. Based on these findings, bio-trauma elements were extracted across three dimensions—color, structure, and symbolism—and translated into six jewelry prototypes using silver, resin, and cold enamel techniques. The results demonstrate that symbolic abstraction, moderated trauma intensity, and material credibility are critical for effective ecological communication through jewelry. This study proposes a trauma-oriented visual translation framework that contributes to sustainable design research by integrating empirical perception, symbolic coherence, and embodied craft practice.

Keywords: marine plastic pollution; bio-trauma; eco-jewelry; emotional design; practice-based research

INTRODUCTION

Marine plastic pollution has become one of the most pressing ecological crises worldwide. Beyond environmental contamination, plastic waste inflicts severe biological trauma on marine organisms, including entanglement, ingestion, deformation, and tissue necrosis. While scientific documentation of these impacts is extensive, their emotional and ethical significance often remains inaccessible to the public.

Design has increasingly been recognized as a mediator between environmental knowledge and public awareness. Jewelry design, in particular, operates at the intersection of body, symbolism, and emotion, allowing ecological narratives to be experienced physically rather than abstractly. However, many existing eco-jewelry practices prioritize material sustainability or decorative symbolism while avoiding direct engagement with biological suffering.

This study addresses this gap by exploring how marine bio-trauma can be translated into wearable visual language through trauma-oriented jewelry design. The research aims to empirically examine audience perception and to develop a systematic design framework that balances trauma expression, symbolism, and wearability.

METHODOLOGY

A mixed-methods research framework was adopted to ensure empirical grounding and design validity. The methodological logic follows a closed-loop model of **Perception** → **Translation** → **Design** → **Evaluation**.

2.1 Audience Perception Survey

An online questionnaire was distributed to individuals with interests in jewelry, design, or environmental issues. A total of 220 valid responses were collected. The questionnaire examined:

- Awareness of marine ecological crises
- Emotional responses to bio-trauma imagery
- Acceptance of trauma-themed jewelry
- Preferences for color, material, and representational style
- Perceived communicative potential of jewelry

Responses were measured using a 5-point Likert scale and analyzed through descriptive statistics and correlation analysis.

2.2 Practice-Based Design Research

Based on survey results, six marine organisms—fish, sea turtle, dolphin, jellyfish, starfish, and coral—were selected as representative cases for bio-trauma translation. Visual and structural trauma elements were extracted and transformed into jewelry prototypes through iterative design experimentation.

Silver was used as the primary structural material, combined with resin and cold enamel for color and texture. Handcraft techniques, including soldering, shaping, hollowing, and surface treatment, were employed to physically embody trauma characteristics.

RESULTS

3.1 Emotional Response to Marine Bio-Trauma

Survey data indicate a high level of emotional sensitivity to biological trauma. When presented with images of injured or polluted marine organisms, 90% of respondents reported strong negative emotions, including sadness, distress, and anger. This confirms that bio-trauma imagery is an effective emotional trigger for ecological concern.

3.2 Acceptance of Trauma-Themed Jewelry

While respondents generally accepted the integration of ecological themes into jewelry, explicit or graphic depictions of trauma led to discomfort and rejection. Abstract and symbolic representations were significantly more acceptable, empirically confirming a tension between trauma expression and wearability.

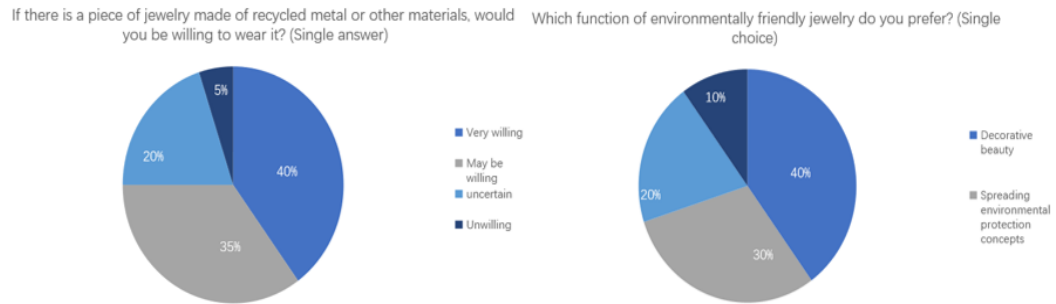


Figure 2 Environmentally friendly jewelry acceptance survey

Figure 1Research on Biological Trauma and Emotional Perception

3.3 Design Element Preferences

11. Which color of environmentally friendly jewelry do you find most acceptable? (Single choice)		
Options	Number of people	percentage
A.Blue (Ocean)	121	55.0%
B.Gray/black (pollution)	44	20.0%
C.Red (Warning)	33	15.0%
D.other	10	10.0%
Total number of people	208	—

12. What materials do you prefer your eco-friendly jewelry to be made of? (Multiple choices)		
Options	Number of people	percentage
A.Recycled plastics	99	45.0%
B.Recycled Metals	143	60.0%
C.natural materials	121	55.0%
D.other	11	5.0%
Total number of people	220	—

13. What is your preferred design expression? (Single choice)		
Options	Number of people	percentage
Realism	55	25.0%
abstract	88	40.0%
symbol	66	30.0%
uncertain	11	5.0%
Total number of people	220	—

Figure 3 Design element preference survey

Color preferences favored blue as a primary symbolic reference to marine environments, while gray and black were accepted as secondary indicators of pollution and destruction. Recycled metal and natural materials were preferred over recycled plastic, reflecting a demand for both sustainability and perceived material quality. Symbolic and abstract forms were favored over realism for communicating ecological trauma.

4. Bio-Trauma Visual Translation Framework

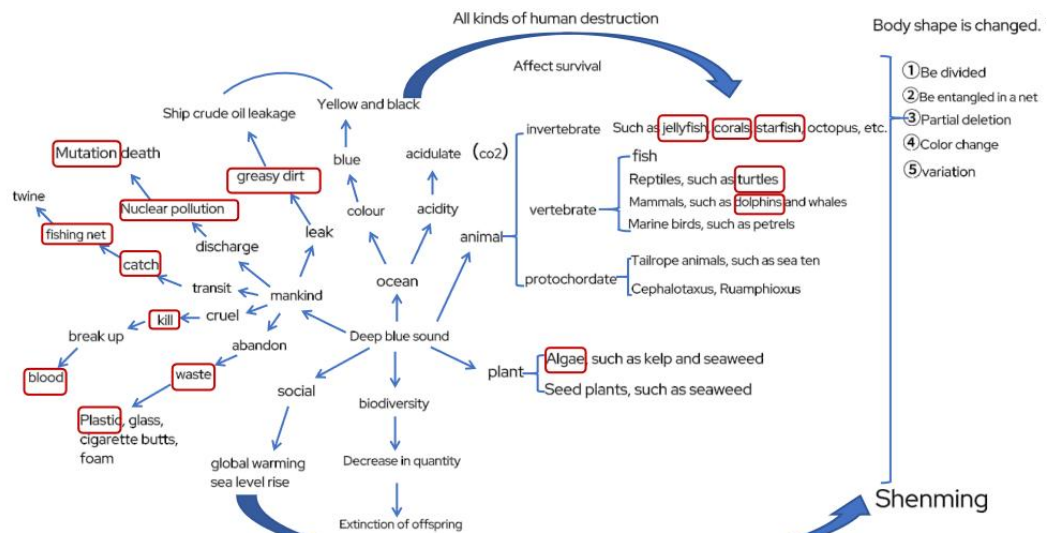


Figure 4 Design Concept

4.1 Color as Emotional and Ecological Metaphor

Trauma-related color characteristics—such as red for injury, pale white for bleaching, gray-black for necrosis, and light gold for recovery—were translated into jewelry through enamel, oxidation, and resin techniques. Color functions as an emotional cue rather than a literal biological reproduction.

4.2 Structure as Spatial Expression of Trauma

Structural characteristics of bio-trauma, including deformation, fracture, entanglement, and swelling, were translated into asymmetrical forms, hollowed voids, twisted wire structures, and protruding relief. These spatial manipulations convey bodily tension while maintaining ergonomic feasibility.

4.3 Symbolism as Narrative Trigger

Symbolic elements such as fishing nets, restraint loops, cracks, and bleaching were abstracted and reconstructed through jewelry craftsmanship. Symbolism allows trauma to be communicated through metaphor, avoiding explicit realism while enhancing emotional and ethical engagement.

5. Design Outcomes

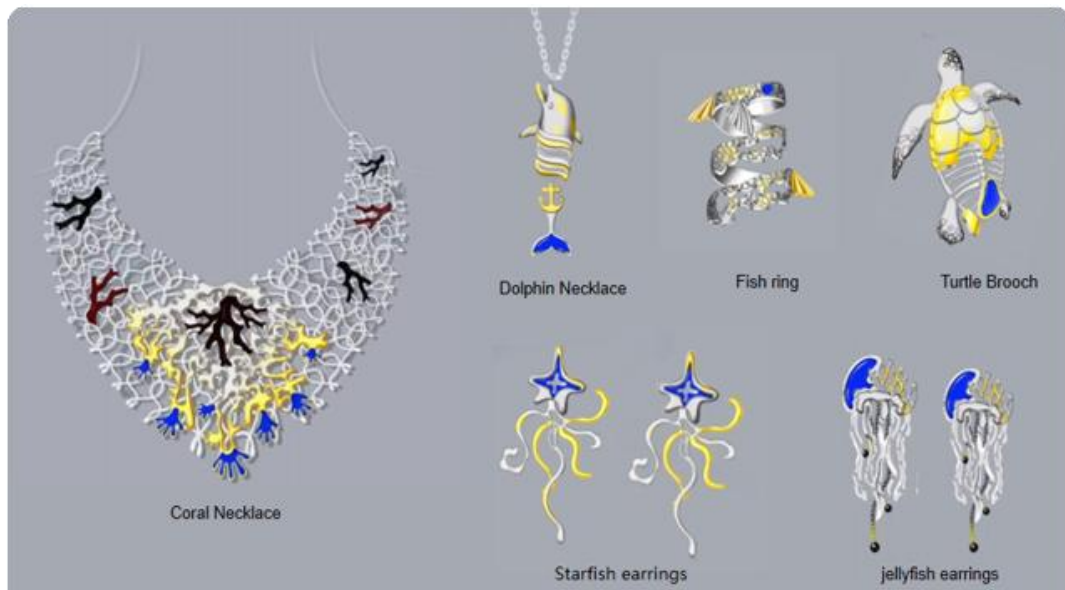


Figure 5 Design renderings



Figure 6 Product photos

Six jewelry prototypes were produced as a coherent series titled Blue Deep Ringing. The works form a narrative sequence from entanglement and struggle to damage and fragile hope. Material choice, craft process, and form collectively function as a closed symbolic system:

- Material operates as ecological metaphor

- Craft embodies trauma through physical intervention
- Form acts as a perceptual trigger for emotional reflection

Packaging and exhibition design were treated as evaluative environments rather than commercial presentation, allowing observation of communicative effectiveness and emotional resonance.

Discussion

The findings demonstrate that trauma-oriented eco-jewelry can function as an effective medium for ecological communication when guided by empirical audience perception. Symbolic abstraction enables trauma to remain emotionally impactful without overwhelming wearability, while craft processes reinforce ethical reflection through embodied making.

This research positions jewelry design not merely as decorative practice but as a form of materialized ecological narrative grounded in audience perception and ethical design principles.

CONCLUSION

This study proposes a trauma-oriented visual translation framework for eco-jewelry design that integrates empirical perception research with practice-based design methodology. By translating marine bio-trauma into wearable form, jewelry becomes a medium for embodied ecological communication.

The research contributes to sustainable design discourse by offering a replicable model for transforming ecological trauma into emotionally resonant and ethically grounded design language. Future studies may explore cross-cultural perception and long-term behavioral impact.

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VISUAL POSTER DESIGN ABOUT MARINE MICROPLASTIC POLLUTION

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ABSTRACT

This paper analyzes the current state of marine microplastic pollution and clarifies the crucial role of information visualization in environmental communication. Based on a review of research progress and public awareness regarding marine microplastic pollution, it finds that current science communication relies primarily on academic papers and reports, which suffer from abstract information expression, difficulty in comprehension, and a lack of emotional resonance. This limits the public's effective understanding of the concept, sources, and hazards of microplastics. Therefore, this paper uses information visualization posters as the research object, combining relevant theories of environmental communication and visual design to explore how to transform complex scientific data into visually understandable and perceptible information through visual structure, information hierarchy, and emotional expression. The research aims to explore the potential role of information visualization posters in enhancing public environmental awareness and participation, providing theoretical reference and practical direction for interdisciplinary research in environmental communication and visual design.

Keywords: Microplastic pollution, Information visualization, Environmental communication, Visual design

INTRODUCTION

The invention and widespread use of plastics were once hailed as an achievement of modern industry. However, its environmental residues, especially marine microplastics with a diameter of less than 5 millimeters, are gradually evolving into a global ecological crisis. These fragments, originating from cosmetic microparticles, textile fibers, or the degradation of large plastic items, are now found in oceans worldwide, from nearshore to open ocean, from the surface to deep-sea sediments, and even invading polar glaciers. They not only directly threaten the survival of marine life but also enter organisms through the food chain, potentially carrying pollutants and ultimately impacting human health (Brahney et al., 2020; Galloway et al., 2017). Unlike relatively "visible" environmental problems such as climate change and air pollution, marine microplastics, due to their extremely small size, long-term cumulative effects, and uncertainties, are not easily perceived by the public, thus failing to evoke a sense of urgency and a willingness to act, posing a unique challenge in public communication.

Currently, research on marine microplastics is mainly concentrated in environmental science and ecology, with findings presented primarily in highly specialized academic papers and technical reports (Andrady, 2011; Thompson et al., 2004). While this research is crucial, the abundance of technical terminology, complex data, and abstract models increases the difficulty for the public to understand. Studies show that the public has basic knowledge of "plastic waste," but their understanding of the specific

concept of "microplastics," its multiple sources, migration pathways, and long-term harms remains quite limited and vague (Hossain, 2024). This cognitive gap reflects the inadequacy of traditional science communication models in translating professional knowledge into information acceptable to the public, particularly in visual presentation, emotional connection, and storytelling.

In the field of environmental policy and planning, visualization is also seen as an important bridge connecting science, policy, and the public (Metze, 2020). Furthermore, posters, as a readily disseminated and widely accessible print medium, have a significant impact on information reception and emotional engagement through their visual structure and design strategies. Research indicates that visual hierarchy, color schemes, and typography not only affect readability and dissemination efficiency but also influence audience understanding and emotional engagement with the subject matter (Puenpong, 2024). This suggests that when addressing complex environmental issues, poster visual design not only serves to "convey information" but can also become a crucial medium for constructing narratives, shaping risk perception, and evoking public resonance. However, existing research largely focuses on macro-level environmental issues or general visualization methods, lacking systematic, evidence-based visual communication design studies specifically addressing "invisible pollution" such as marine microplastics. Specifically, how to design information visualization works that, while ensuring scientific rigor, effectively evoke public emotional resonance, guide cognitive understanding, and even promote behavioral change, requires further in-depth exploration regarding specific strategies, pathways, and effectiveness evaluation.

Therefore, this study directly addresses the "public communication dilemma of marine microplastic pollution," focusing on information visualization posters as its core research object. It aims to respond to the following key questions: Given the highly abstract and specialized nature of microplastic information dissemination, how can visual design transform scientific data into an informational form that is easily understood, perceived, and evokes emotional resonance in the public, thereby effectively enhancing public awareness and willingness to participate? This research will explore visual structure, information hierarchy, and emotional expression mechanisms, combined with specific design practices and effect evaluations, aiming to provide a solution with both theoretical insights and practical value for the interdisciplinary field of environmental communication and visual design. Therefore, utilizing information visualization design to transform scientific data into a visual form that is easily understood and evokes emotional resonance is of great significance for enhancing public environmental awareness and willingness to participate. It can fill the knowledge gap in the interdisciplinary field of science communication and visual design, providing an operable design path for environmental communication practice, and possesses certain academic value and social significance.

OBJECTIVE

This study aims to develop effective visual solutions for the scientific communication of marine microplastic pollution through design research and analysis. Specific objectives are as follows:

1. Analyze representative information visualization poster cases in domestic and international environmental communication, summarizing their main characteristics and shortcomings in design structure, visual narrative, and scientific expression.
2. To assess the differences in the impact of different information visualization design elements (such as color schemes, graphic symbol types, and data chart formats) on the efficiency of information comprehension and emotional response of non-professional audiences.

3. Develop a set of principles and design guidelines for the visual transformation of information visualization on the theme of "marine microplastic pollution," improving communication effectiveness while ensuring scientific accuracy.

4. Construct a framework applicable in design practice, providing methodological support for cultivating scientific communication design and sustainable design capabilities in the environmental field.

METHODOLOGY

This study focuses on the design of information visualization posters on the theme of marine microplastic pollution, aiming to explore the communication effects of information visualization in enhancing public awareness and emotional resonance.

1.Literature Analysis: This study systematically reviews and summarizes relevant domestic and international literature on marine microplastic pollution, information visualization, and environmental communication. The aim is to construct a theoretical framework for the research, clarify the mechanism of information visualization in environmental communication, and summarize the visual strategies and shortcomings in existing design practices, providing a theoretical basis for subsequent design interventions.

2. Case Study: This study selects representative information visualization posters and visual projects in the field of environmental communication as cases. Based on design theory, it conducts in-depth analysis of their visual structure, information hierarchy, and emotional expression mechanisms. Through comparison, it extracts effective design principles and visual frameworks applicable to the theme of marine microplastics.

RESULTS

Based on a literature review and comparative analysis of multiple cases, this study summarizes a series of key patterns and phased findings regarding the visual communication of marine microplastic pollution. The research results are mainly presented in three levels: (1) the main problems in current environmental visual communication practices, (2) the common characteristics of effective visualization design, and (3) the significance of constructing and applying an integrated conceptual framework for design schemes.

1. Major Shortcomings in Current Visual Communication Practices

Existing visual communication works on the topic of marine microplastic pollution generally struggle to strike a balance between scientific accuracy and public comprehensibility. Their core shortcomings are mainly reflected in the following three aspects:

First, some environmental posters rely excessively on emotional symbolic expressions (such as dead marine life, polluted beaches, and abstract crisis symbols). While these designs have a strong visual impact, they often lack explanations of the scientific mechanisms involved, failing to clearly explain how microplastics form, spread, and accumulate in the food chain. Therefore, while audiences may experience a brief emotional shock, they are unlikely to develop a stable understanding of "what microplastics are" and "how they affect ecology and humanity."

Second, another type of work tends to directly present statistical data and charts from scientific reports. While maintaining scientific accuracy, the dense text, complex indicators, and numerous labels

can easily lead to information overload. These posters often assume the audience has a high level of scientific literacy, which is mismatched with the actual cognitive level of the general public, resulting in decreased communication efficiency and affecting their persuasiveness and effectiveness.

Third, case studies show that many existing works lack a coherent narrative structure. Information is often presented in a fragmented manner, lacking an organized causal relationship. This makes it difficult for viewers to connect the sources, transmission routes, ecological consequences, and human health risks of microplastics into a complete logical system, resulting in a "fragmentation of understanding" in communication.

Overall, current visual communication regarding marine microplastics exhibits a clear polarization: one type is "emotionally strong but lacking mechanistic explanations," while the other is "scientifically rigorous but lacking narrative appeal." This makes it difficult for communication works to simultaneously achieve cognitive understanding and emotional resonance.

2.Common Characteristics of Successful Cases

Through case comparison, this study found that successful environmental visualization posters share highly consistent structural characteristics. Their success in dissemination does not solely rely on aesthetic expression, but rather on their ability to transform complex scientific knowledge into visually understandable logic.

(1) Narrative-Driven Approach: Integrating data points into a "storyline" with temporal, spatial, or causal logic transforms data paths into easily understood cognitive paths, lowering the public's comprehension threshold and helping them understand dynamic processes and their relevance to themselves.

(2) Clear Scientific Logic: All visual expressions are based on reliable data, using complete data labels and clear source attributions to ensure the credibility and traceability of information.

(3) Clear Visual Concepts: Employing strong visual metaphors, clear information hierarchy and grouping mechanisms (such as differentiating primary and secondary information through color, size, and position), and guiding compositions (such as arrows and numbered sequences), actively guides the viewer's gaze and cognitive sequence, helping them gradually acquire information along a set path, thereby reducing cognitive burden and making complex content more readily accepted.

(4) Emotion and reason work together: Emotional elements (such as impactful images and emotionally charged colors) are closely integrated with the scientific mechanisms being explained, making emotion a catalyst for deeper understanding rather than a tool to replace facts.

3.Core Design Principles for Addressing Marine Microplastics

Based on the above analysis and considering the characteristics of marine microplastic pollution, such as its "small size" and "hidden nature," this study further refines four key information visualization design principles to guide future design practices:

(1) Narrative-driven visualization: Emphasizing the construction of contextualized and mechanistic visual narratives, rather than simply listing charts (e.g., expressing the migration path of pollutants from the pollution source to their final ecological impact and potential risks to human health).

- (2) Adhering to rigorous scientific visual expression: Visual transformation must be faithful to the data, avoiding oversimplification that could lead to misunderstandings, and clearly indicating the data sources.
- (3) Maintaining a clear visual hierarchy and cognitive guidance: Proactively managing the audience's attention through design methods to reduce their cognitive burden and ensure that key information is prioritized.
- (4) Combining emotional resonance with rational education: On the basis of accurately conveying scientific facts, strategically using visual techniques to evoke emotional resonance and promote changes in attitudes and behavioral intentions.

4. Construction of an Integrated Conceptual Framework for Design

To further translate the above principles into actionable design methods, this study proposes an integrated conceptual framework for the topic of marine microplastics, to guide the design practice of information visualization posters.

This framework consists of two core driving forces:

- (1) Scientifically Precise Visual Transformation: Ensuring that environmental data is accurately transformed into visual elements, including symbol systems, chart structures, typography systems, and data expression methods.
- (2) Resonance-Oriented Environmental Narrative Construction: Ensuring that information organization is story-driven and perceptible, thereby stimulating public awareness of responsibility, sense of crisis, and behavioral intentions.

Within this framework, the visual transformation process can be divided into three consecutive stages:

- (1) Scientific Data Interpretation Stage: Extract key microplastic indicators, including pollution sources, spatial distribution, particle size, ecological migration pathways, and risk evidence.
- (2) Narrative Mapping Stage: Organize data into causal chains and construct clear reading paths (e.g., timelines, flowcharts, food chain structures, or system grid diagrams).
- (3) Visual Expression Stage: Achieve a balance between scientific clarity and emotional appeal through color schemes, graphic symbols, and hierarchical layout design.

This framework not only provides systematic guidance for the design practice of this study but also aims to offer an adaptable visual transformation method for science communication on similar complex and abstract environmental issues.

CONCLUSION AND FUTURE WORK

This study systematically explores the application potential and design pathways of information visualization in the science communication of marine microplastic pollution. Through literature and case analysis, it clarifies the core problem of the disconnect between scientific content and visual narrative in current communication practices and successfully extracts a set of key design principles for this type of "invisible" pollutant: narrative-driven, scientifically rigorous, clearly hierarchical, and combining reason and emotion. Furthermore, this study constructs an integrated conceptual framework, providing

systematic guidance for transforming complex scientific data into effective public visual communication products.

The theoretical contribution of this study lies in bridging the disciplinary gaps between environmental science, communication studies, and visual design, providing a visual transformation methodology for specific scientific issues in the field of "environmental communication design." Its practical significance lies in the fact that the proposed principles and framework can directly provide designers, environmental educators, and communication organizations with actionable design strategies and tools, enhancing the professionalism and effectiveness of environmental visual communication, thereby contributing to the improvement of public environmental awareness.

Future work will primarily focus on the following areas:

1. Empirical Verification: Based on the methods developed in this study, a comprehensive questionnaire survey and interviews will be conducted to collect quantitative and qualitative data. The effectiveness of the proposed design principles and framework in actual communication will be rigorously tested to validate the research hypothesis.

2. Design Refinement and Testing: Based on the integrated framework, a series of visual information posters on marine microplastics will be designed and produced. Controlled audience experiments will be conducted to evaluate the specific differences in the impact of different design strategies on cognitive enhancement, emotional arousal, and behavioral intention.

3. Framework Expansion and Application: The application of the visual transformation framework constructed in this study to the science communication of other complex and abstract environmental issues (such as global warming and biodiversity) will be explored to test its applicability.

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EDUCATIONAL MANAGEMENT PERSPECTIVE ON PROFESSIONAL DEVELOPMENT TRAINING FOR YOUNG TEACHERS IN RURAL JUNIOR HIGH SCHOOLS

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ABSTRACT

This study investigates the current status, existing problems, and underlying causes of professional development training for young teachers in rural junior high schools from an educational management perspective. A mixed-methods approach was adopted. Quantitative data were collected through 123 valid questionnaires, while qualitative data were obtained through in-depth interviews with five school-level administrators.

The findings reveal that although training coverage is relatively broad, deficiencies remain in training quality, duration, and systematic continuity. There is also a mismatch between training content and format, which reduces the effectiveness of transferring training outcomes into teaching practice. In addition, the management and evaluation mechanisms are incomplete, lacking systematic follow-up and feedback. Furthermore, coordination among educational authorities, schools, and teachers is insufficient, which weakens overall support.

Based on these findings, this study proposes optimizing training content, innovating delivery formats, strengthening evaluation and feedback systems, and establishing collaborative governance mechanisms. These measures aim to improve training effectiveness and promote the sustainable professional development of rural young teachers.

Keywords: Educational Management, Professional Development Training, Rural Junior High Schools, Young Teachers

INTRODUCTION

Rural education plays a crucial role in promoting educational equity and supporting national rural revitalization. Young teachers in rural junior high schools are not only the backbone of daily teaching but also key contributors to future educational development. Their professional growth significantly affects teaching quality, student achievement, and teacher retention in rural areas.

In recent years, governments have increasingly emphasized teacher professional development in rural regions. However, the effectiveness of current training remains limited. Common challenges include weak alignment between training content and classroom realities, insufficient continuity, and inadequate follow-up support. These problems reduce the practical value of training and hinder sustainable professional growth.

From an educational management perspective, professional development training should be viewed as a systematic and continuous process involving policy planning, resource allocation, implementation, and evaluation. However, coordination among educational authorities, training institutions, and schools is often insufficient. In addition, heavy workloads and limited access to professional support further constrain rural teachers' participation.

Although existing studies have explored teacher professional development, many focus mainly on individual factors and rely heavily on quantitative methods. Research examining organizational and management mechanisms, especially in rural contexts, remains limited. Therefore, this study aims to explore the training system from an educational management perspective and provide targeted recommendations for improvement.

Theoretical Framework

This study integrates educational management theories and teacher professional development theories to construct a comprehensive analytical framework. Systems theory emphasizes the interdependence of policy, resources, and school management in supporting training. Transformational leadership highlights the role of school leaders in motivating teacher growth. Adult learning and situated learning theories stress the importance of practical, context-based training. The interconnected model of teacher professional growth explains how professional learning interacts with practice and outcomes.

Based on these theories, four analytical dimensions were developed:

- 1.Training support system
- 2.Content-format alignment
- 3.Training transfer effectiveness
- 4.Professional development needs

OBJECTIVE

1. To examine the current situation of professional development training for young teachers in rural junior high schools from an educational management perspective, with particular attention to training content, organization, and support mechanisms.
2. To identify key problems in the management and implementation of professional development training and to propose feasible optimization strategies aimed at improving training effectiveness and supporting the sustainable professional development of young rural junior high school teachers.

METHODOLOGY

This study adopted a mixed-methods design. The population consisted of young teachers in rural junior high schools in Dawu County, Hubei Province. A total of 123 valid questionnaires were collected based on Krejcie and Morgan's sampling table. In addition, five school-level administrators were selected for semi-structured interviews using purposive sampling.

The questionnaire included two parts: demographic information and perceptions of professional development training. Data were analyzed using descriptive statistics, including frequency, percentage, mean, and standard deviation. A five-point Likert scale was applied. Qualitative data were analyzed using content analysis and used to support quantitative findings.

RESULTS

The overall evaluation of professional development training was at a moderate level ($M = 3.25$). Among the four dimensions, content-format alignment and professional development needs showed relatively positive results, while the training support system and training transfer effectiveness were weaker.

First, the training support system remained insufficient. Although basic policies exist, financial investment, time allocation, and opportunity equity were limited. Teachers in village schools had fewer access to high-quality training. The lack of institutional enforcement weakened motivation.

Second, content-format alignment showed mixed results. Teachers reported strong demand for practical and context-based training, particularly in classroom management, subject pedagogy, and educational technology. However, practical and interactive learning opportunities were still insufficient. Training formats relied heavily on lectures, and school-based professional learning communities were underdeveloped.

Third, training transfer effectiveness was relatively low. While teachers gained knowledge and updated teaching concepts, long-term impact and classroom application were limited. Continuous follow-up support and problem-solving mechanisms were lacking, leading to short-term rather than sustainable improvement.

Fourth, teachers demonstrated strong intrinsic motivation for professional development. However, external support, including school culture and multi-stakeholder collaboration, was insufficient. This created a gap between teachers' needs and institutional support.

Interview findings further confirmed that insufficient coordination among government agencies, schools, and training institutions limited training effectiveness. Participants emphasized the need for systematic support, localized training, and sustained mentoring.

Table 1
Results of general data analysis of respondent

General information	General information of respondents	
	n=123	
	Frequency	Percentage
1. Gender of respondents		
Male	34	27.64
Female	89	72.36
Total	123	100.00
2. Age Distribution		
25 years old and below	33	26.83
26-30 years old	48	39.02
31-35 years old	42	34.15
Total	123	100.00
3. Teaching Experience Distribution		
1 year or less	16	13.01
2-5 years	53	43.09
6-10 years	32	26.02
6-10 years	22	17.89
Total	123	100.00

4.Respondent's highest educational		
Bachelor's degree	85	69.11
Master's degree	28	22.76
Junior college diploma	10	8.13
Total	123	100.00
5.Professional Title Distribution		
Junior professional title	52	42.28
Intermediate professional title	43	34.96
Senior professional title	28	22.76
Total	123	100.00
6.Subject Distribution		
Mathematics	22	17.89
Chinese	21	17.07
English	17	13.82
Biology	10	8.13
Physics	9	7.32
Geography	9	7.32
Chemistry	8	6.50
History	5	4.07
Moral Education and Law	5	4.07
Music	4	3.25
Fine Arts	4	3.25
Physical Education	3	2.44
Others	6	4.88
Total	123	100.00
7.Grade Level Taught		
Grade 7	39	31.71
Grade 8	47	38.21
Grade 9	37	30.08
Total	123	100.00

Table 2
Results analysis of mean and standard deviation of Professional Development Training

Educational Management in Professional Development Training for Rural Junior High School Teachers	n=123		Interpretation
	$\bar{X}$	S.D.	
1. Factors of Training Support System	2.88	0.91	Neutral
2. Factors of Content-Format Alignment	3.51	0.84	Agree
3. Factors of Training Transfer Effectiveness	3.09	0.82	Neutral
4. Factors of Professional Development Needs	3.51	0.81	Agree

Total	3.25	0.85	Neutral
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Table 3
Results Analysis of Mean and Standard Deviation of the Factors of Training Support System

Factors of Training Support System	n=123		Interpretation
	$\bar{X}$	S.D.	
1. The school has established a formal professional development training system for young teachers.	3.02	0.92	Neutral
2. Training participation is integrated into performance evaluation and professional title promotion.	2.95	0.8	Neutral
3. The school provides sufficient financial support for external training.	2.81	0.94	Neutral
4. Training funds are allocated specifically for professional development.	2.8	1.01	Neutral
5. Dedicated time is guaranteed for teachers to participate in training.	2.86	0.93	Neutral
6. A "training leave" policy is implemented without workload penalties.	2.72	0.9	Neutral
7. Training opportunities are distributed equitably among teachers.	2.9	0.94	Neutral
8. Village school teachers have equal access to high-level training.	2.59	0.83	Neutral
9. Novice teachers receive prioritized training opportunities.	3.23	0.99	Neutral
10. Annual training duration meets the 72-hour standard.	2.88	0.96	Neutral
Total	2.88	0.92	Neutral

Table 4
Results analysis of mean and standard deviation the Factors of School Students

Factors of Training Support System	n=123		Interpretation
	$\bar{X}$	S.D.	

1. Training content is closely aligned with the realities of rural junior high school teaching contexts	3.67	0.82	Agree
2. Training content addresses practical challenges faced in rural classrooms	3.4	0.78	Neutral
3. Subject-specific pedagogical content knowledge (PCK) is adequately covered	3.4	0.84	Neutral
4. The proportion of practical, hands-on training content is sufficient	3.11	0.8	Neutral
5. Training content is updated promptly to reflect new curriculum standards	3.37	0.89	Neutral
6. Local culture and rural revitalization themes are integrated into training content	3.13	0.83	Neutral
7. Subject knowledge and discipline-specific teaching skills training	4.12	0.67	Agree
8. Classroom management strategies tailored to rural student populations training	4.26	0.68	Agree
9. Educational technology application and low-cost smart teaching tools training	4.04	0.68	Agree
10. Experimental teaching and practical activity guidance training	3.92	0.73	Agree
11. Training formats are diverse (exceeding single lecture form)	3.31	0.97	Neutral
12. Interactive and participatory methods account for sufficient training time	2.98	0.88	Neutral
13. Blended learning is effectively implemented in training	2.98	0.93	Neutral
14. Online training platforms are technically stable and user-friendly	3.08	0.86	Neutral
15. School-based professional learning communities operate systematically with expert guidance	2.78	0.85	Neutral
16. Mentorship pairing and cross-school observation opportunities are regularly provided	3.2	0.9	Neutral
Total	3.5	0.8	Neutral

Table 5
Results analysis of mean and standard deviation for the Factors of Training Transfer Effectiveness

Factors of Training Transfer Effectiveness	n=123		Interpretation
	$\bar{X}$	S.D.	
1. Overall satisfaction with the professional development training received	3.43	0.75	Neutral
2. Training effectively improves professional knowledge and instructional skills	3.41	0.89	Neutral
2. Training contributes to updating educational concepts and teaching philosophies	3.21	0.93	Neutral
4. Knowledge and skills acquired in training can be effectively applied to actual teaching practice	3.15	0.72	Neutral
5. Training has produced positive changes in my classroom teaching behaviors	3.19	0.75	Neutral
6. Training methods learned are adaptable to rural students' learning levels and school conditions	3.08	0.86	Neutral
7. Continuous follow-up guidance is provided after training to support practical application	2.77	0.85	Neutral
8. A support mechanism exists for addressing difficulties encountered when applying training outcomes	2.65	0.77	Neutral
9. Training effects are sustained over time (3 months, 6 months, or longer after training)	2.80	0.93	Neutral
10. Training contributes positively to student learning outcomes and development.	3.28	0.84	Neutral
Total	3.09	0.83	Neutral

Table 6
Results analysis of mean and standard deviation for the Factors of Professional Development Needs

Factors of Professional Development Needs	n=123		Interpretation
	$\bar{X}$	S.D.	
1. I have strong awareness and intrinsic motivation for continuous professional development.	4.03	0.75	Agree
2. I actively seek opportunities for self-directed learning and reflective practice.	3.66	0.82	Agree
3. The school cultivates a professional learning culture that values teacher growth.	3.22	0.87	Neutral

4. Multi-stakeholder collaboration (government, training institutions, schools, teachers) effectively supports my professional development.	3.15	0.79	Neutral
Total	3.51	0.81	Agree

CONCLUSION AND FUTURE WORK

Based on the perspective of educational management, this study takes young teachers in rural junior high schools in Dawu County, Xiaogan City, Hubei Province as the research object. By adopting a mixed research method combining questionnaire survey (123 valid samples) and in-depth interviews (5 school-level administrators), it systematically explores the current situation, problems and causes of professional development training for young rural junior high school teachers from four core dimensions: training support system, content-form matching, training transfer effect, and professional development needs. The core research conclusions are as follows:

Initial Expansion of Training Coverage, but Insufficient Supply of Quality and Sustainability

Research data shows that the professional development training for young teachers in rural junior high schools has achieved basic coverage, with 89.39% of teachers having participated in various types of training. However, there are significant shortcomings in training quality and sustainability. It can be seen from the overall mean value of the training support system dimension ($\bar{X}=2.88$, S.D.=0.91) being at a "neutral" level that the existing support system fails to provide stable and sufficient development guarantees for teachers. The specific manifestations are:

Insufficient time guarantee: Only 22.76% of teachers can meet the statutory training duration standard of 72 hours per year. 43.09% of teachers (with 2-5 years of teaching experience) report prominent work-study conflicts. Most training is arranged on weekends or winter and summer vacations, occupying teachers' rest time, and the "training leave" policy is difficult to implement due to the difficulty in adjusting teaching tasks.

Limited funding investment: The annual training budget of schools can only cover 1-2 school-level centralized trainings. 81.3% of teachers indicate that they need to bear the costs of high-quality off-campus training themselves. The training funding for non-core subjects (music, physical education, art) accounts for less than 1/3 of that for core subjects (Chinese, mathematics, English).

Uneven distribution of opportunities: The proportion of core subject teachers participating in municipal-level and above training (37.4%) is 2.6 times that of marginal subjects; the high-end training opportunities for teachers in township central schools (28.5%) are significantly higher than those in village primary schools (7.3%); backbone teachers have priority in accessing training resources over novice teachers, presenting a Matthew effect of "the strong getting stronger and the weak getting weaker".

Weakened system implementation: Although 90% of schools have established a system linking training with performance, the incentive intensity is insufficient (mean value $\bar{X}=2.95$), failing to effectively mobilize teachers' participation enthusiasm. The training system in some schools has become a "paper regulation".

This conclusion is consistent with the research results of Song Qingwen (2024) in B County, Q City, that is, rural teacher training has the common problem of "emphasizing coverage over quality". At

the same time, this study further reveals the structural shortcomings in the distribution of training resources and the implementation of systems in rural areas of central China.

Mismatch between Training Design and Implementation, Restricted Practical Transformation Effectiveness

The overall mean value of the content-form matching dimension is $\bar{X}=3.51$ (S.D.=0.84), which is at the "agree" level, but there is an obvious imbalance in the internal structure, presenting prominent problems of "three excesses and three deficiencies":

"Excess of theory and deficiency of practice" in content: 68.3% of teachers report that the training content focuses on urban teaching scenarios (such as the in-depth application of intelligent equipment), which is disconnected from rural actual needs; only 31.1% of the training includes practical guidance on common problems in rural classrooms (such as the management of left-behind children and the teaching of weak subjects). 51.01% of teachers believe that the training content is difficult to directly apply to teaching.

"Excess of lectures and deficiency of interaction" in form: Traditional lecture-based training accounts for 79.8%, while interactive forms such as case discussions, practical exercises, and cross-school observations account for less than 30%; due to unstable rural networks (reported by 47.2% of teachers) and aging equipment, the actual effect of online training is poor, with a mean value of only $\bar{X}=3.08$.

"Excess of skills and deficiency of psychology" in coverage: Training content focuses on subject teaching skills (mean value $\bar{X}=4.09$), while the psychological needs commonly faced by rural teachers, such as occupational burnout (mentioned by 59.6% of teachers) and identity confusion (mentioned by 48.9% of teachers), are covered in only 8.1% of the training.

In-depth interviews further confirm that the "standardized" courses provided by external training institutions have a gap with the actual rural teaching situation. For example, a principal mentioned: "The differentiated teaching methods used in cities cannot be implemented at all in rural areas where students have weak foundations and small class sizes"; although school-based training is more recognized because it is close to reality (mean value $\bar{X}=3.20$), it lacks expert guidance and systematic design, resulting in uneven quality. This "mismatch between supply and demand" directly leads to low training conversion efficiency, which echoes the view proposed by Liu Liyan et al. (2021) that "teacher training in rural areas in the intelligent era needs to strengthen situational adaptability".

Imperfect Management and Evaluation Mechanism, Broken Closed-Loop Improvement Chain

The overall mean value of the training transfer effect dimension is $\bar{X}=3.09$ (S.D.=0.83), which is at the "neutral" level, indicating that the training has not effectively achieved the transformation from "learning" to "applying". The core problems are concentrated in:

Lack of follow-up guidance: Only 17.07% of teachers receive continuous guidance after training, and 2.65% of teachers report that there is no support channel when encountering difficulties in application; most schools have not established a linkage mechanism of "training-practice-feedback". For example, a teacher said: "The methods learned in training, when encountering problems in the classroom with no one to answer, are gradually not used".

Formalistic evaluation: Training assessment mainly relies on "submitting experience summaries" (63.4%) and "attendance records" (22.93%), with only 9.63% adopting practice-oriented evaluation methods

such as "on-site lesson presentation"; the evaluation focuses on short-term participation rate (89.39%) rather than long-term changes in teaching behavior (only 32.8% of schools track this).

Weak sustainability of effects: The training effect attenuates significantly after 3 months. Only 28.0% of teachers indicate that what they have learned in training can be applied for a long time, and 39.90% of teachers report that the effect of deepening subject knowledge is not significant. This is highly consistent with the conclusion of "short-term effect of rural teacher training" in the research of Hou Lihua (2020) in B City, Hebei Province.

In addition, there is a problem of "multiple responsibilities and lack of coordination" in training management. Information is not smooth between educational administrative departments, training institutions and schools. 54.04% of teachers report that there is a disconnection between national training, provincial training, county training and school-based training, resulting in duplicate or missing content, failing to form a systematic training system.

Unestablished Multi-Subject Collaboration Mechanism, Insufficient Support Synergy

The overall mean value of the professional development needs dimension is $\bar{X}=3.51$ ($S.D.=0.81$), which is at the "agree" level, but there is a significant imbalance between individual needs and external support:

Differentiated characteristics of needs: Novice teachers (with 1-3 years of teaching experience) are most in need of training in classroom management ($\bar{X}=4.26$) and basic teaching skills; growth-oriented teachers (with 4-6 years of teaching experience) aspire to improve their educational research ($\bar{X}=3.92$) and curriculum development capabilities; senior young teachers (with 7-10 years of teaching experience) focus on characteristic curriculum construction ($\bar{X}=3.78$) and career planning guidance. However, the existing training adopts a "one-size-fits-all" model, and 50.00% of teachers believe that the training content is not targeted.

Fragmented external support: The professional learning culture in schools has not yet formed (mean value $\bar{X}=3.22$), and there is a lack of independent learning platforms for teachers; the multi-subject collaboration mechanism among the government, training institutions, schools and teachers is missing (mean value $\bar{X}=3.15$), training resources are scattered, and there is a "last mile" problem in policy implementation. For example, an education bureau leader mentioned: "The superior policies are good, but it is difficult to take into account the actual difficulties of rural schools (such as shortage of teachers and insufficient resources)".

Pending stimulation of independent development motivation: Although teachers have a strong sense of individual development ($\bar{X}=4.03$), 37.4% of teachers have insufficient sustainability in independent learning due to lack of external support and incentives, presenting a dilemma of "having the will but no path".

In summary, the professional development training for young rural junior high school teachers has core contradictions of "mismatch between supply and demand, disconnection between process and effect, and imbalance between individuals and systems". The root cause of this contradiction lies in the imperfect support system, unsound collaboration mechanism and unscientific evaluation orientation at the educational management level, which is highly consistent with the theoretical framework proposed by Zhu Xudong (2014) that "teacher professional development needs to build a systematic support network".

Future Research Directions

This study has conducted a preliminary exploration on the professional development training of young rural junior high school teachers, but there are still many issues that need further in-depth research. Future research can be carried out from the following directions:

1. Conduct Longitudinal Tracking Research

The existing research is a cross-sectional study, which is difficult to reveal the long-term change law of training effects. In the future, a longitudinal research design can be adopted to conduct a 1-3 year follow-up survey on the same group of young rural teachers, focusing on the long-term impact of training on teachers' professional knowledge, teaching skills, professional attitudes and teaching effects; analyze the long-term dynamic relationship between factors such as the training support system and the matching degree of content and form and teachers' professional development; explore the long-term effect differences of different training models (such as online training, offline training and mixed training), providing a more scientific basis for the optimization of training models.

2. In-Depth Exploration of the Impact Mechanism of Training Effects

This study has identified the key factors affecting training effects, but has not deeply explored the causal relationship and mechanism of action between various factors. In the future, quantitative methods such as structural equation models can be used to construct a theoretical model of "training support system - content-form matching - training transfer effect - teacher professional development", empirically testing the direct effect, indirect effect and moderating effect between variables; analyze the role of moderating variables such as teachers' individual differences (such as learning style and independent learning ability) and school organizational culture; explore the mediating role of "training transfer effect", clarify the specific path of each factor affecting teacher professional development, and provide theoretical support for precise intervention.

3. Focus on the Specific Path of Training Practice Transformation

The transformation of training content into teaching practice is the key to improving training effects, but the existing research on the transformation path is relatively general. In the future, action research methods can be adopted to track teachers' training practice process in rural schools in depth, analyze the specific obstacles affecting transformation (such as resource constraints, student characteristics and teaching pressure); explore effective strategies to promote transformation (such as coaching guidance, peer assistance and practice communities); develop personalized transformation path models for teachers of different subjects and teaching experience, providing more specific practical guidance for teachers.

4. Conduct Regional Comparative Research

There are differences in rural education environments, resource supply and teacher needs in different regions. The existing research only focuses on rural areas in central China, and the generalization of conclusions is limited. In the future, comparative studies of different regions in the east, central and west can be carried out to analyze the common problems and individual characteristics of rural teacher training in each region; explore the impact of factors such as regional economic development level, educational policies and cultural background on training effects; put forward differentiated training optimization suggestions for the characteristics of different regions, providing reference for the overall promotion of rural teacher training work nationwide.

5. Explore Innovative Training Models Empowered by Technology

The intelligent era provides new opportunities for rural teacher training. Liu Liyan et al. (2021) proposed that 'intelligent technology can optimize the allocation of rural teacher training resources and realize precise training', but the existing research on the specific models of technological empowerment is insufficient. In the future, in-depth research can be conducted on the application of technologies such as artificial intelligence, big data and virtual reality in rural teacher training: develop an intelligent personalized training platform to accurately push training content according to teachers' needs; use virtual reality technology to construct simulated rural classroom scenes to provide immersive practical training for teachers; realize real-time monitoring and dynamic adjustment of training effects through big data analysis of teachers' teaching behaviors and training data, promoting rural teacher training towards intelligence and precision.

6. Strengthen International Comparative Research

Foreign rural teacher training has many mature experiences, such as the "professional learning community" in the United States, the "long-term on-the-job training" in Finland and the "teacher mentoring system" in the United Kingdom. In the future, international comparative research can be carried out to systematically sort out the policies, models and support systems of foreign rural teacher training; analyze the reference ability and localized adaptability of foreign experiences; combine the reality of rural education in China, put forward innovative training schemes integrating international experiences, providing new ideas for the internationalization and modernization of rural teacher training in China.

Young teachers in rural junior high schools are the future and hope of rural education. Their professional development level is directly related to the improvement of rural education quality and the realization of educational equity. Through empirical investigation, this study reveals the current situation, problems and causes of professional development training for young rural junior high school teachers, and puts forward targeted optimization suggestions, hoping to provide reference for educational administrative departments, training institutions and rural schools, and promote the improvement and perfection of rural teacher training work. In the future, it is necessary to continue to pay attention to the professional development needs of rural teachers, constantly innovate training models, improve the support system, escort the growth of rural teachers, and help the revitalization of rural education and the construction of educational modernization.

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A STUDY ON THE SHORT VIDEO COMMUNICATION PATHS AND STRATEGIES OF MIANYANG PAPER-CUTTING

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ABSTRACT

Under the impact of globalization and modernization, regional intangible cultural heritage generally faces challenges such as transmission gaps and audience stagnation. Short videos have become an innovative medium for the living transmission of intangible cultural heritage. This study takes Mianyang paper-cutting, a provincial-level intangible cultural heritage in Sichuan Province, as its research object. It employs literature review, questionnaire surveys, in-depth interviews, and case studies, combining five core theories including uses and gratifications and agenda-setting, to analyze the pain points in the transmission of Mianyang paper-cutting and the current state of its short video dissemination, and to construct a short video dissemination strategy adapted to its cultural characteristics. The study finds that the single offline dissemination model is the core constraint on the transmission of Mianyang paper-cutting, while content homogenization, imbalance of subject capabilities, and platform mismatch are the main problems in its short video dissemination. Based on empirical analysis, this study proposes three content prototypes: visualization of techniques, story-based scenarios, and interactive participation, clarifying differentiated dissemination paths on platforms and providing practical solutions for the living transmission of Mianyang paper-cutting.

Keywords: Intangible cultural heritage; Mianyang paper-cutting; short video dissemination; living heritage; dissemination strategies

INTRODUCTION

Intangible cultural heritage is a core carrier of national cultural confidence, and its transformation towards living transmission in the digital age has become a core direction for its protection and development (Chen et al., 2024). Short videos, with their inherent fragmented, visual, and social attributes, have become a key medium for establishing effective connections between intangible cultural heritage and the public due to their low dissemination costs and wide audience reach, providing an innovative path for regional intangible cultural heritage to overcome geographical and cognitive barriers (Li, 2023).

Mianyang paper-cutting, as a representative provincial-level intangible cultural heritage of northwestern Sichuan, integrates Bashu folk customs with the cultural characteristics of the Qiang and Tibetan ethnic groups. Its style combines boldness and delicacy, carrying regional historical memories and folk customs. Although it has carried out offline dissemination practices such as "entering schools and communities," it still faces common challenges such as a small number of inheritors, insufficient

youth participation, and a core audience limited to local middle-aged and elderly groups. Furthermore, its dissemination relies heavily on offline scenarios, lacking timeliness and interactivity (Wang & Zhang, 2022). The integration of intangible cultural heritage (ICH) with short videos has become a trend, with Generation Z showing a high acceptance of digital ICH content. However, the dissemination of regional ICH short videos generally suffers from problems such as content homogenization, insufficient matching between channels and user profiles, and a lack of innovative presentation styles, preventing the full realization of the advantages of short video dissemination.

Existing research largely focuses on the macro-level dissemination of ICH through short videos, with relatively few studies on personalized dissemination strategies for regional ICH. Research on the short video dissemination of Mianyang paper-cutting, in particular, suffers from a gap in its approach, with more qualitative descriptions than empirical analysis, and more technical research than practical dissemination studies. Against this backdrop, this study focuses on Mianyang paper-cutting, delving into its inheritance challenges and the current state of its short video dissemination, and constructing a suitable short video dissemination strategy, possessing both theoretical and practical value.

OBJECTIVE

1. To sort out the existing problems of short video dissemination, optimize strategies, expand audience coverage, focus on attracting Generation Z, and solve the problems of small inheritors and solidified audience;
2. To clarify the core content, suitable channels and presentation forms of paper-cutting short videos, strengthen dissemination appeal and expand cultural influence;
3. To construct a short video dissemination strategy that fits Mianyang paper-cutting and provide guidance for its dissemination practice.

1.Theoretical Foundation and Current Research Status

1.1 Core Theoretical Support

Combining the challenges of preserving Mianyang paper-cutting with the characteristics of short video dissemination, this study selects five core theories to provide support for the construction of dissemination strategies from multiple dimensions, achieving a high degree of alignment between theory and research objectives.

1.1.1 Uses and Gratifications Theory:

This theory breaks away from the passive acceptance of information by the audience, emphasizing that audiences actively select media content based on their personalized needs, and the effectiveness of communication depends on the degree to which the content meets the audience's needs (Katz et al., 1974). This theory guides this study in accurately analyzing the differences in needs among four core audience groups: inheritors, Generation Z youth, local middle-aged and elderly people, and short video practitioners, providing a basis for targeted content creation.

1.1.2 Agenda-Setting Theory:

This theory points out that mass communication can influence the public's cognitive ranking through the degree of emphasis on issues (McCombs & Shaw, 1972). Based on this theory, this study

defines core communication issues for Mianyang paper-cutting, including technical details, stories of inheritors, and contemporary innovations. It guides public attention through topic operation on short video platforms, overcoming the predicament of low awareness.

1.1.3 Visual Semiotics Theory:

This theory focuses on the meaning generation logic of visual symbols, emphasizing that cultural information is transmitted through symbol encoding and decoding (Barthes, 2012). Mianyang paper-cutting, as a typical visual cultural symbol, can have its cultural connotations—including patterns, lines, and colors—systematically analyzed using this theory to guide short videos in optimizing visual presentation and improving the accuracy of cultural dissemination. Figure 1

Figure 1

Traditional paper-cut graphic symbols



1.1.4 Living Heritage Theory:

A core theory of intangible cultural heritage protection, emphasizing that the vitality of intangible cultural heritage lies in its dynamic transmission, requiring a balance between historical authenticity and modern adaptability (UNESCO, 2003). This theory guides short videos to move beyond simply showcasing finished products and instead present the complete creation and transmission process of Mianyang paper-cutting, demonstrating its integration with modern life.

1.1.5 Media Context Theory:

Proposes that media context determines the form and effect of communication content, and that communication must adapt to media characteristics (Meyrowitz, 2002). Addressing the fragmented nature of short videos, this theory guides this study to break down Mianyang paper-cutting techniques into short-duration knowledge points, adapting to the user habits and algorithmic logic of different platforms.

1.2 Research Frontiers at Home and Abroad

International academic research on the dissemination of intangible cultural heritage (ICH) through short videos focuses on three main areas: cross-cultural communication, technological ethics, and youth participation. Studies have found that a multimodal approach, with visual dominance supplemented by language, is an effective path for the cross-cultural dissemination of ICH. Furthermore, the application of AI technology requires careful consideration of the boundaries of cultural authenticity, and short videos on ICH created by young creators have a significantly higher reach among younger audiences (Baran & Dennis, 2020). Figure 2

Figure 2

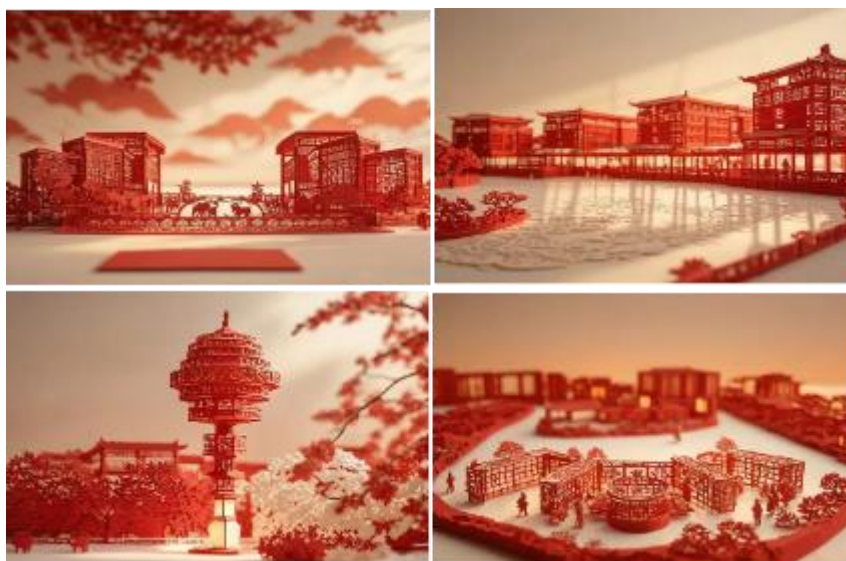
Juxtaposition of Mianyang paper-cutting and European silhouette art



Domestic research focuses on the precise dissemination of regional intangible cultural heritage, youth empowerment, and differentiated platform utilization. Research on intangible cultural heritage in northwestern Sichuan suggests that the triple superposition of regional symbols can enhance the regional recognition of short videos (Cai Fengming, 2023); a communication matrix involving inheritors, young influencers, and university teams can effectively compensate for the shortcomings of inheritors' insufficient media literacy; and different short video platforms need to adapt to differentiated content formats, such as TikTok being suitable for short and fast-paced skill content, while Bilibili is suitable for in-depth skill tutorials (Duncan et al., 2022).Figure 3

Figure 3

“Paper-cut Campus Landmarks” series of short videos



1.3 Research Gaps in the Dissemination of Mianyang Paper-cutting

Existing research on Mianyang paper-cutting largely focuses on the analysis of its techniques and cultural connotations, and the summarization of traditional inheritance models. However, research on its short video dissemination still has significant gaps:

1. Macro-level research on intangible cultural heritage short videos has not fully integrated the regional characteristics of Mianyang paper-cutting's integration with the cultures of the Bashu, Qiang, and Tibetan ethnic groups;
2. Key issues such as audience profiling, content suitability, and platform selection for its short video dissemination are lacking discussion;
3. Most studies are qualitative descriptions, lacking empirical data to support effect evaluation and strategy optimization.

Currently, the dissemination of short videos on Mianyang paper-cutting faces three core challenges: homogenization and superficiality of content, imbalance in the capabilities of disseminators, and mismatch between platform mechanisms. A systematic dissemination strategy is urgently needed.

METHODOLOGY

This study employs a hybrid research approach, integrating quantitative and qualitative research. It is based on literature review and uses questionnaires, in-depth interviews, case studies, and field surveys to collect data, ensuring the scientific validity and relevance of the research conclusions.

2.1 Research Subjects and Sampling

This study identified four core research subjects and selected samples using a combination of stratified and typical sampling methods, adhering to the principles of randomness, representativeness, relevance, and feasibility:

1. Core Inheritance-Related Audience: 2 provincial and municipal-level inheritors + 2 senior folk artists;
2. Core Attracted Audience of Generation Z Youth: 200 viewers aged 18-26 who watch intangible cultural heritage videos for more than 2 hours per day on average;
3. Existing Core Audience: 50 urban and rural residents of Mianyang aged 40 and above;
4. Short Video Dissemination Practitioners: 5 intangible cultural heritage short video practitioners + 3 platform cultural operation specialists.

2.2 Core Research Tools

2.2.1 Questionnaire Survey Method:

An online questionnaire was distributed through Wenjuanxing (a survey platform), and 350 valid samples were collected. The questionnaire covered four dimensions: basic information, cultural awareness, communication preferences, and evaluation of communication effects. It included 30 closed-ended questions and 1 open-ended question. The reliability and validity were verified through pre-survey and Cronbach's α coefficient test ($\alpha=0.81$). The system collected data on audience behavior and needs.

2.2.2 In-depth interview method:

Semi-structured interviews were conducted with 5 typical interviewees, including 2 inheritors of Mianyang paper-cutting, 2 staff members of cultural centers, and 1 short video practitioner. The interviews focused on topics such as the difficulties in content creation, platform algorithm adaptation, and pain points in practical dissemination, totaling more than 5 hours and obtaining high-quality qualitative data. From Table 1.

Table 1

Specific interviewee information

No.	Name	Position	Field of Expertise
1	Chengfei Xie	Provincial-level inheritor of Mianyang paper-cutting intangible cultural heritage	Mianyang Paper-cutting
2	Chuanhao Xie	Provincial-level inheritor of Mianyang paper-cutting intangible cultural heritage	Mianyang Paper-cutting
3	Erjun Zhang	Director of Mianyang City Library; Master's Supervisor at Southwest University of Science and Technology	Intangible Cultural Heritage Protection and Inheritance, Public Library and Cultural Information Resource Construction, Local Traditional Culture Research.
4	Wenlong Cao	Staff member of Mianyang City Cultural Center; Deputy Director of the Expert Committee of Mianyang Folk Artists Association	Mass Culture and Intangible Cultural Heritage Protection and Inheritance
5	Hai Tu	Founder of Sichuan Boying Culture Communication Co., Ltd.; Short video practitioner	Digital Media Art, Short Video Production, Short Video Promotion

2.2.3 Literature Review Method:

A systematic review of literature on three main categories—living heritage transmission of intangible cultural heritage, short video dissemination, and case studies of intangible cultural heritage short videos—provides theoretical support and practical reference for the research.

2.2.4 Case Study Method:

Thirty short video accounts focusing on paper-cutting and regional intangible cultural heritage from northwestern Sichuan, published on platforms such as TikTok, Rednote, and Bilibili, were selected as samples. Analysis was conducted from three dimensions: content, platform, and impact, extracting the core dissemination logic of visualizing techniques, creating story scenarios, and establishing a dissemination matrix.

Core content and platform adaptation for the dissemination of Mianyang paper-cutting short videos

3.1 Prototypes of the Three Core Contents

Combining the cultural characteristics of Mianyang paper-cutting with the needs of its audience, this study constructs content prototypes that adhere to the principles of authenticity as the bottom line and innovation as the core, achieving an organic integration of skill demonstration, cultural dissemination, and audience preferences.

3.1.1 Visual Prototype of Skills:

Focusing on the core techniques of Mianyang paper-cutting—intaglio, relief carving, and layered openwork—a 4K macro lens is used to track the creative process. Key steps such as the initial cut positioning and the transition between intaglio and relief carving are slowed down at 0.5x speed with dynamic annotations. The background incorporates montage shots of Mianyang regional scenes such as Yue Wang Tower and Qijiang Ancient Town, addressing the pain point of unintuitive skill demonstration and adapting to a 1.5 minute in-depth tutorial format.

3.1.2 Story-Based Prototype:

A narrative framework is built around the inheritors' creative inspiration, folk application scenarios, and historical evolution. It employs a dual-scene narrative of "ancient and modern contrast," with traditional scenes recreating folk activities such as Spring Festival window decorations and wedding decorations, while modern scenes showcase the integration of paper-cutting with cultural and creative products and decorations. This is accompanied by Sichuan dialect narration and traditional folk music, incorporating ambient sounds such as burning firewood and the friction of paper cutting, replacing dry, scientific explanations with storytelling to enhance emotional resonance.

3.1.3 Interactive Prototype:

A low-barrier "1-Minute Paper-Cutting Challenge" is designed, providing a simplified Mianyang paper-cutting template. Users are guided through three steps: cutting the outline, refining details, and displaying the finished product. Users are encouraged to post their work with the hashtag #MianyangPaperCuttingChallenge. Simultaneously, high-quality UGC works are periodically selected, reviewed by inheritors, and compiled into video compilations, creating a closed loop of "professional creation - user participation - content re-dissemination" to enhance user engagement.

3.2 Content Prototype Design and Validation

Based on survey data and theoretical framework, this study transforms the technical characteristics and cultural connotations of Mianyang paper-cutting into three categories of short video content prototypes. These prototypes are then optimized and validated through small-scale testing: 50 core audience members (30 from Generation Z and 20 from middle-aged and elderly individuals) are selected to watch the prototype videos. Evaluation is based on three dimensions: dissemination effect indicators such as completion rate and like rate; inheritance and transformation indicators such as participation willingness and cognitive improvement; and qualitative feedback. Prototype details are adjusted according to the results, resulting in a mature content prototype library.

3.3 Platform Differentiation Adaptation Strategy

Based on media context theory and platform characteristic analysis, this study matches differentiated platform dissemination paths for three content prototypes to achieve precise content-platform adaptation and improve dissemination efficiency:

3.3.1 TikTok:

Adapting to short clips and interactive prototypes based on the visual art prototype, focusing on 15-60 second high-energy content and topic challenges, leveraging the platform's algorithm to amplify traffic and attract Generation Z, thus expanding dissemination reach.

3.3.2 Rednote:

Adapting to story-based and interactive prototypes, focusing on the integration of paper-cutting with everyday life, publishing practical content such as paper-cutting home decoration and journaling, and leveraging the platform's social sharing attributes to strengthen communication and dissemination among users.

3.3.3 Bilibili:

Adapting to in-depth tutorials based on the visual art prototype, publishing 5-10 minute systematic art explanation videos, including pattern design logic, tool selection, and other knowledge points, meeting users' in-depth learning needs and creating a professional content platform for Mianyang paper-cutting.

3.3.4 WeChat Video Channel:

Adapt to story-based scenarios, focus on local cultural dissemination, and publish content combining Mianyang paper-cutting with local folk customs and cultural tourism scenes to reach the middle-aged and elderly population in Mianyang, while also catering to the needs of the existing core audience.

CONCLUSIONS

4.1 Core Research Conclusions

This study, through empirical analysis, draws three core conclusions:

1. The challenges in the inheritance of Mianyang paper-cutting are significantly correlated. The singular offline dissemination model is the core constraint, directly leading to problems such as a small scale of inheritors, insufficient youth participation, and a fixed audience;
2. Combining the fragmented, visual, and social characteristics of short videos, focusing on the core content of Northwest Sichuan folk customs, practical skills, and the stories of inheritors, and pairing them with differentiated presentation formats and dissemination paths on the platform, can significantly improve the dissemination effectiveness of Mianyang paper-cutting short videos and enhance their appeal and conversion power among young people;
3. A dissemination strategy based on three content prototypes—visualized skills, scenario-based storytelling, and interactive participation—can effectively solve the challenges in the inheritance and dissemination of Mianyang paper-cutting.

4.2 Theoretical and Practical Significance

4.2.1 Theoretical Significance:

This study focuses on regional intangible cultural heritage (ICH) short video dissemination strategies, addressing the shortcomings of existing research on ICH short video dissemination that focuses on macro-level approaches. By integrating five core theories, it enriches the theoretical system

of ICH living heritage transmission and new media integration, providing a targeted and practical theoretical reference for the dissemination research of Mianyang paper-cutting short videos.

4.2.2 Practical Significance:

This study addresses the core issues in the dissemination of Mianyang paper-cutting short videos, constructs a feasible dissemination operation plan, clarifies the core shooting content and platform adaptation path, and provides direct assistance for the practice of Mianyang paper-cutting short video dissemination.

4.2.3 Social Significance:

The results of this study help strengthen the effectiveness of cultural dissemination of Mianyang paper-cutting, explore the cultural and ethnic value of regional ICH, attract young people to participate in ICH inheritance, promote the popularization of Mianyang paper-cutting culture, enhance national cultural confidence, and contribute to the innovative development of traditional culture.

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THE IMPACT OF EMPLOYEE INCOME, PROMOTION MECHANISM, AND CORPORATE CULTURE ON EMPLOYEE LOYALTY IN SMES OF CHENGDU, CHINA

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ABSTRACT

This study aims to explore the effect of employee income (EI), employee promotion mechanism (EPM), and corporate culture (CC) on employee loyalty (EL) in small and medium-sized enterprises (SMEs) in Chengdu, China, and provide human resource management optimization insights. A quantitative research approach, utilizing a questionnaire survey, was adopted, and data were collected from 100 employees of local SMEs. Descriptive statistics, correlation analysis, and regression analysis were used to process the data. The results show that EI, EPM, and CC all have significant positive direct effects on EL, with path coefficients of 0.528, 0.386, and 0.452, respectively ($p < 0.001$). The three variables collectively explain 67% of the variance in EL ($R^2 = 0.670$), with EI exerting the strongest influence. This study verifies the theoretical framework of employee loyalty drivers in the context of Chinese SMEs and offers practical implications for enhancing employee retention.

Keywords: Employee Loyalty, Employee Income, Promotion Mechanism, Corporate Culture, Small and Medium-Sized Enterprises (SMEs)

INTRODUCTION

Small and medium-sized enterprises (SMEs) play a pivotal role in China's economic development, contributing significantly to employment and innovation (Chen, M., & Xie, F., 2020). Employee loyalty (EL) is a critical determinant of SMEs' sustainability, as it reduces turnover costs, improves productivity, and strengthens organizational competitiveness (Kwon, K. H., & Kim, J., 2019). However, SMEs often face challenges in retaining talented employees due to limited resources, leading to high turnover rates that hinder long-term growth (Ng, E. S. W., & Burke, R. J., 2005).

Existing literature has identified employee income, promotion mechanisms, and corporate culture as key antecedents of EL. For instance, Vroom (2020) emphasized that equitable and competitive compensation enhances employee satisfaction and commitment. Weng and McElroy (2012) noted that transparent promotion pathways motivate employees to invest in organizational development. Schein (2017) argued that a supportive corporate culture fosters emotional attachment between employees and the organization. Despite these insights, few studies have empirically tested the combined effects of these three factors on EL in the specific context of Chengdu's SMEs, where regional economic characteristics and organizational contexts may shape unique employee expectations.

To fill this research gap, this study focuses on Chengdu's SMEs and addresses two core objectives: (1) describing the demographic characteristics of employees and their perceptual levels of EI,

EPM, CC, and EL; (2) examining the direct positive effects of EI, EPM, and CC on EL. The findings provide evidence-based recommendations for SMEs to improve human resource management and enhance employee loyalty.

Extensive literature has discussed the relationship between the factors and employee loyalty of SMEs. Based on these insights, the researchers have formulated three research hypotheses as follows:

H1 Employee income has a positive effect on Loyalty

H2 Employee promotion mechanism has a positive effect on Loyalty

H3 Corporate culture n has a positive effect on Loyalty

These hypotheses are supported by the literature on Employee loyalty in small and medium-sized enterprises) Zhang, L. et al. 2014.

The conceptual framework of this study illustrates the relationship between the independent variables (employee income, employee promotion mechanism, corporate culture) and the dependent variable (Loyalty). The following diagram visually represents this relationship:

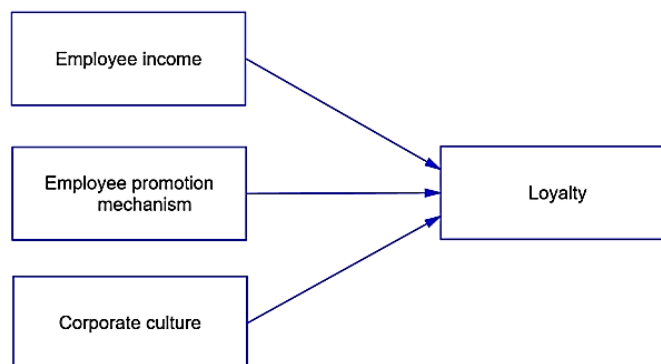


Figure 1 The Research Framework

OBJECTIVE

1. To characterize the demographic profiles of employees in Chengdu's SMEs and measure their perceptual levels of employee income, promotion mechanism, corporate culture, and employee loyalty.
2. To empirically test the hypothesized direct positive effects of employee income, promotion mechanism, and corporate culture on employee loyalty in Chengdu's SMEs.

METHODOLOGY

Research Design

A quantitative cross-sectional research design was adopted to investigate the relationships between the independent variables (EI, EPM, CC) and the dependent variable (EL). This design is suitable for testing causal relationships and generalizing results to the target population (McKnight, D. H., & Kacmar, C. J., 2017).

Sample and Data Collection

The sample consisted of 100 full-time employees from SMEs in Chengdu, China, selected through convenience sampling. The demographic characteristics of the sample are presented in Table 1. Data were collected via self-administered questionnaires distributed both online and offline. The questionnaire was designed based on existing validated scales, with items measured on a 5-point Likert scale (1=Strongly Disagree, 5= Strongly Agree). A total of 112 questionnaires were distributed, and 100 valid responses were obtained (response rate = 89.3%), ensuring sufficient statistical power for analysis.

Variable Definitions

Employee Income (EI, X1): Measured by 7 items, including “The employee is satisfied with their current salary” and “The financial rewards are proportional to work input” (Cronbach's $\alpha = 0.744$).

Employee Promotion Mechanism (EPM, X2): Assessed by 9 items, such as “The company has a well-defined career path” and “Promotions are based on merit and performance” (Cronbach's $\alpha = 0.673$).

Corporate Culture (CC, X3): Evaluated by 8 items, including “The company values employee opinions in decision-making” and “Promotes a positive work-life balance” (Cronbach's $\alpha = 0.635$).

Employee Loyalty (EL, Y): Measured by 10 items, such as “The employee is committed to staying with the company” and “Feels emotionally attached to the company” (Cronbach's $\alpha = 0.591$).

Data Analysis

Data were analyzed using SPSS 26.0 and AMOS 24.0. Descriptive statistics (mean, standard deviation) were used to characterize perceptual levels of variables. Pearson correlation analysis was conducted to examine bivariate relationships. Multiple linear regression and path analysis were employed to test the research hypotheses, with a significance level set at $\alpha = 0.01$.

RESULTS

1. Demographic Characteristics of the Sample

As shown in Table 1, the sample was predominantly male (55.00%) and middle-aged: 34.00% aged 26–35 years, 31.00% aged 36–45 years. Regarding marital status, 50.00% were married, 32.00% single, and 18.00% divorced. Education levels were evenly distributed: 34.00% below bachelor's, 35.00% bachelor's, and 31.00% postgraduate. Most employees had 1–3 years (45.00%) or 4–6 years (38.00%) of work experience. Monthly income was mainly concentrated in 1000–3000 Yuan (38.00%) and 3001–5000 Yuan (37.00%), indicating a middle-income level.

Table 1 Demographic Characteristics of Employees (N = 100)

Characteristics	Categories	Number	Percentage (%)
Gender	Male	55	55.00
	Female	45	45.00
Age	18–25 Years	25	25.00
	26–35 Years	34	34.00
	36–45 Years	31	31.00

	> 46 Years	10	10.00
Marital Status	Single	32	32.00
	Married	50	50.00
	Divorced	18	18.00
Education Level	Below Bachelor's	34	34.00
	Bachelor's Degree	35	35.00
	Postgraduate	31	31.00
Work Experience	1-3 Years	45	45.00
	4-6 Years	38	38.00
	> 7 Years	17	17.00
Monthly Income (Yuan)	1000-3000	38	38.00
	3001-5000	37	37.00
	5001-8000	25	25.00

2. Perceptual Levels of Variables

Table 2 presents the mean (M) and standard deviation (S.D.) of perceptual levels for each variable. All variables achieved “Most” level ratings (M>4.00). The overall mean of influencing factors was 4.373, with EI ranking first (M=4.492), followed by CC (M=4.351) and EPM (M=4.276). For EI, the highest-rated item was “Salary is fairly determined based on performance” (M=4.390), while the lowest was “Income meets personal financial needs” (M=3.980). For EPM, “Well-defined career path” scored highest (M=4.320), and “Clear communication of promotion potential” scored lowest (M=4.150). For CC, “Company values employee opinions” was top-rated (M=4.380), and “Leadership is open to feedback” was lowest (M=4.200). For EL, the highest item was “Proud to tell others about working for the company” (M=4.310), and the lowest was “Contributions are valued by the company” (M=4.050).

Table 2 Perceptual Levels of Variables (N=100)

Variable	Mean (M)	S.D.	Level	Rank
Employee Income (EI)	4.492	0.431	Most	1
Corporate Culture (CC)	4.351	0.389	Most	2
Employee Promotion Mechanism (EPM)	4.276	0.472	Most	3
Employee Loyalty (EL)	4.165	0.591	Most	-
Overall Influencing Factors	4.373	0.431	Most	-

3. Hypothesis Testing Results

Path analysis and regression results confirmed all three research hypotheses (Table 3) (Figure 2). EI had a significant positive direct effect on EL ($\beta = 0.528$, $t = 4.102$, $p < 0.001$), supporting H1. EPM also exerted a significant positive direct effect on EL ($\beta = 0.386$, $t = 2.945$, $p < 0.001$), supporting H2. CC had a significant positive direct effect on EL ($\beta = 0.452$, $t = 3.512$, $p < 0.001$), supporting H3. The multiple regression

model showed that EI, EPM, and CC collectively explained 67.0% of the variance in EL ($R^2=0.670$), indicating a strong predictive power.

Table 3 Hypothesis Testing Results

Hypothesis	Path	Path Coefficient (β)	t-stat	p-value	Result
H1	EI $\rightarrow$ EL	0.528	4.102	< 0.001	Supported
H2	EPM $\rightarrow$ EL	0.386	2.945	< 0.001	Supported
H3	CC $\rightarrow$ EL	0.452	3.512	< 0.001	Supported
Model Fit	$R^2 = 0.670$	–	–	–	–

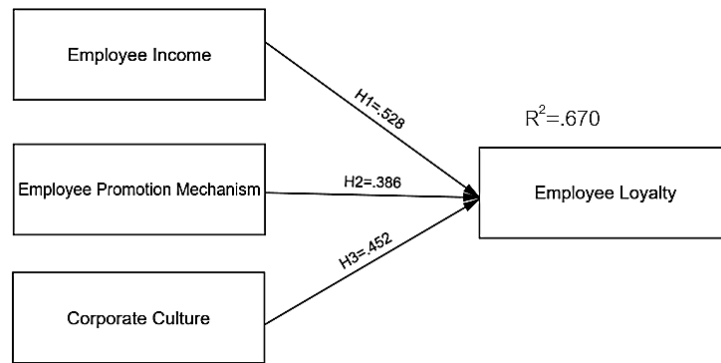


Figure 2 Results of path analysis

Table 4 further illustrates the direct, indirect, and total effects of the independent variables on EL. All variables had only direct effects (no indirect effects), with EI having the strongest total effect (0.528), followed by CC (0.452) and EPM (0.386).

Table 4 Effects of Variables on Employee Loyalty

Dependent Variable	R^2	Effect Type	EI	EPM	CC
Employee Loyalty (EL)	0.670	Direct Effect	0.528	0.386	0.452
		Indirect Effect	N/A	N/A	N/A
		Total Effect	0.528	0.386	0.452

This study confirms that employee income, promotion mechanism, and corporate culture are significant positive predictors of employee loyalty in Chengdu's SMEs, which aligns with previous research (Cameron, K. S., & Quinn, R. E., 2011; Denison, D. R., 2021; Kwon et al., 2019). The findings provide valuable insights into the dynamics of employee loyalty in the Chinese SME context.

First, EI had the strongest impact on EL ($\beta=0.528$), indicating that employees in Chengdu's SMEs prioritize financial security and equity. This is consistent with Vroom's (2020) expectancy theory, which posits that employees are motivated by the belief that their efforts will lead to desired rewards (fair salary, competitive compensation). The relatively low rating of "Income meets personal financial needs" ($M=3.980$) suggests that SMEs could enhance loyalty by improving income levels and ensuring pay-performance alignment.

Second, EPM's positive effect ($\beta=0.386$) highlights the importance of transparent and merit-based career progression. Employees value clear promotion criteria and opportunities, as they foster a sense of fairness and long-term growth potential (Chen et al., 2020; Ng & Burke, 2005). The lowest-rated EPM item, "Clear communication of promotion potential" ($M=4.150$), implies that SMEs need to strengthen communication with employees about their career paths and development opportunities.

Third, CC's significant effect ($\beta=0.452$) underscores the role of emotional and value-based connections in building loyalty. A culture that values employee opinions, promotes work-life balance, and aligns with employee values enhances emotional attachment and organizational identification (Schein, 2017). The high rating of "Company values employee opinions" ($M=4.380$) indicates that participative decision-making is a strength of Chengdu's SME culture, while "Leadership is open to feedback" ($M=4.200$) suggests room for improvement in leadership responsiveness.

The model's $R^2=0.670$ indicates that 67% of EL variance is explained by the three variables, leaving 33% to other potential factors (leadership style, work-life balance, job autonomy), which warrants further exploration.

CONCLUSION AND FUTURE WORK

Conclusion

This study empirically verifies that employee income, promotion mechanism, and corporate culture have significant positive direct effects on employee loyalty in Chengdu's SMEs. Among these factors, employee income is the most influential, followed by corporate culture and promotion mechanism. The findings provide practical recommendations for SMEs to enhance employee loyalty:

1. **Equitable and Competitive Compensation:** Regularly review salaries to ensure competitiveness in the industry, link rewards to performance, and provide adequate bonuses.
2. **Transparent Promotion Pathways:** Establish clear promotion criteria, communicate career development plans to employees, and conduct regular performance feedback.
3. **Inclusive Corporate Culture:** Strengthen employee participation in decision-making, promote work-life balance, and foster teamwork and respect.
4. **Professional Development Opportunities:** Offer training programs aligned with employee career aspirations and organizational goals.

Future Research

Future studies could extend this research in several directions: (1) Explore the moderating role of leadership styles (transformational leadership) on the relationships between the studied variables and EL; (2) Investigate the impact of work-life balance on EL, given its growing importance in modern workplaces; (3) Conduct cross-regional or international comparisons to test the generalizability of the

findings; (4) Adopt longitudinal designs to track changes in EL over time and evaluate the long-term effectiveness of intervention strategies; (5) Examine the influence of digital transformation (remote work tools, automation) on EL in the context of rapid technological advancement.

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**DEVELOPMENT AND EVALUATION OF A VIRTUAL SIMULATION EDUCATION
PROJECT FOR SELF-MANAGEMENT SUPPORT FOR NURSING STUDENTS CARING
FOR PATIENTS WITH TYPE 2 DIABETES MELLITUS**

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ABSTRACT

Objective: To construct and evaluate a virtual simulation education program for nursing students to cultivate self-management support ability in type 2 diabetes mellitus (T2DM) patients, explore its application effect in chronic disease nursing education, and provide an evidence-based basis for optimizing the training mode of chronic disease nursing talents. **Methods:** This study adopted a design combining evidence-based integration with empirical research. First, systematic reviews were conducted to retrieve relevant domestic and international literature, integrating the best evidence on self-management support and virtual simulation teaching for T2DM, and clarifying the core competency structure and instructional design elements. Based on this, a virtual simulation teaching project was constructed using Pamela R. Jeffries' Jeffries Simulation Theory as the theoretical framework, including learning objective setting, scenario script design, instructional implementation process, and evaluation system. Subsequently, a quasi-experimental study design was employed to intervene with nursing students, comparing differences in self-management support ability, self-efficacy, and learning satisfaction before and after intervention as well as between groups. **Results:** The systematic review identified the core dimensions of self-management support competence, including health education competence, behavior change support competence, communication and empathy competence, and individualized management competence. Empirical study results showed that the total score and each dimension score of self-management support competence in the intervention group were significantly higher than those in the control group ($P < 0.05$), with particularly notable improvements in communication competence and behavior change support competence. Additionally, the intervention group demonstrated significantly higher learning satisfaction and self-efficacy. **Conclusion:** The virtual simulation education program, based on evidence-based evidence and educational theory, significantly enhances the self-management support capabilities of nursing students in T2DM, demonstrating excellent educational

outcomes and promotion value. This study provides theoretical foundations and practical pathways for innovating chronic disease nursing education models, which holds significant importance for improving primary-level chronic disease management capabilities.

Keywords: Type 2 diabetes mellitus, Self-management support, Virtual simulation teaching, Nursing education

INTRODUCTION

Type 2 diabetes mellitus (T2DM) is a metabolic disorder caused by genetic and environmental factors. Due to its high disability and mortality rates, it has become a global health issue. A 2021 report by the International Diabetes Federation (IDF) indicated that approximately 537 million adults aged 20-79 worldwide suffer from T2DM, with China accounting for 140.9 million cases, making it the country with the highest number of diagnosed cases (Magliano et al., 2021). There are significant differences in the prevalence, awareness, treatment, and control rates of T2DM among rural Han and Bai ethnic residents in Yunnan. The study results showed that the overall self-management level of T2DM patients among rural Han and Bai ethnic groups in Yunnan is relatively low, and there are notable ethnic disparities in the prevalence of T2DM and self-management behaviors (Zuo Chunmei et al., 2021). Among them, the prevalence of T2DM among Bai elderly individuals aged 60 and above is as high as 17.2%, but the blood glucose control rate is only 26.6% (Chen Xiaoyun et al., 2017). The overall self-management level of patients is not optimistic, and improving their self-management capabilities is urgently needed.

Due to the scarcity of community health resources, 80% of urban healthcare resources are concentrated in large hospitals, with only 20% available in communities. Consequently, self-management of chronic diseases has yet to achieve widespread recognition and dissemination. In clinical nursing practice, nurses often serve as the primary agents of health education. However, due to their heavy clinical workload and lack of scientific educational methods, nurses further contribute to insufficient self-management support for patients with common high-incidence chronic diseases such as hypertension and diabetes. Undergraduate nursing students, constrained by various limitations during their academic training, rarely have in-depth exposure to clinical patients, resulting in poor communication skills, lack of confidence, and deficiencies in practical and hands-on abilities. Virtual simulation-based education can enhance the realism and practicality of nursing students' learning in this context, broaden and deepen their knowledge, and lay a solid foundation for their clinical internships and future careers, thereby preparing them more adequately.

OBJECTIVE

To develop a scientifically practical self-management support education program for patients with type 2 diabetes mellitus (T2DM); to enhance the capabilities of undergraduate nursing students in chronic disease health management; to improve the health guidance skills, proficiency, and confidence

of nursing students in ethnic minority regions; and to strengthen the support provided by nursing professionals for the self-management of T2DM patients. During this process, nursing students should clearly recognize the significance of supporting the self-management of chronic disease patients; be able to effectively assess the medical history, cultural background, and self-management level of chronic disease patients; develop effective self-management plans for chronic disease patients in ethnic minority regions; and implement scientific and effective "self-management" education, self-monitoring, and complication prevention guidance for patients based on feasible plans.

This research project first conducts a literature review to understand the current status of self-support virtual education for nursing students with T2DM, explores relevant influencing factors, and identifies existing issues. Based on the Jeffries nursing simulation theory, it designs a practical training teaching model framework and implementation process. Drawing on existing experience, it develops a promotion plan tailored for self-support virtual education among nursing students with T2DM, aiming to enhance the scientific rigor of teaching effectiveness evaluation. This provides robust data support for subsequent curriculum improvement and promotion.

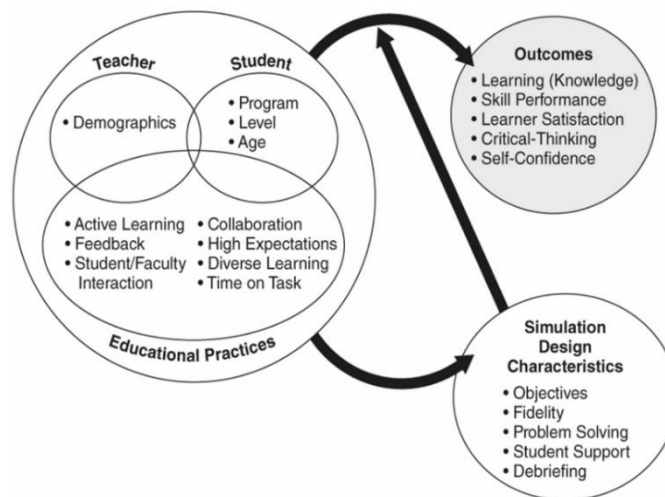


Figure 1: Research Conceptual Framework (The NLN Jeffries Simulation Theory, 2005)

LITERATURE REVIEW

Diabetes mellitus is a chronic disease that typically occurs when the pancreas fails to produce sufficient insulin or when the body cannot effectively utilize insulin. The World Health Organization (WHO) (1999) established the diagnostic criteria for diabetes as a fasting blood glucose level ≥ 7.0 mmol/L or a 2-hour post-glucose load blood glucose level ≥ 11.1 mmol/L (You Liming & Wu Ying, 2022). There are two primary forms of diabetes: insulin-dependent diabetes mellitus (type 1 diabetes, T1DM) and non-insulin-dependent diabetes mellitus (type 2 diabetes, T2DM). Type 2 diabetes is the most common form, accounting for 90%-95% of all diabetic patients (Tripathi & Srivastava, 2006).

The main driving factors of the global prevalence of T2DM are the increase in obesity, sedentary lifestyles, energy-dense diets, and population aging (Chatterjee et al., 2017). A report released by the IDF in 2021 indicated that approximately 537 million adults aged 20-79 worldwide suffer from T2DM (Magliano et al., 2021). With rapid socio-economic and lifestyle changes, the prevalence of diabetes in China has risen sharply over the past few decades, from 0.67% in 1980 (Zhao et al., 2011) to 11.2% in 2017 (Y. Li et al., 2020). In 2019, the total number of diabetes patients was 116.4 million, and it is projected to increase to 147.2 million among Chinese adults by 2045 (IDF, 2019). T2DM, often considered a disease of middle-aged and elderly individuals, is now increasingly affecting younger populations (Magliano et al., 2020). In China, the prevalence of diabetes among individuals aged 18-29 is 2.0%, and among those aged 30-39, it is 6.3% (Y. Li et al., 2020).

T2DM has become a significant global public health issue, with its prevalence and complications leading to substantial mortality and high disability rates worldwide (Zheng et al., 2017). Patients with T2DM often present with complications such as cardiovascular disease, diabetic neuropathy, nephropathy, and retinopathy. A study by Viigimaa et al. (2020) indicated that cardiovascular disease is the leading cause of death in diabetic patients. Diabetes and its associated complications reduce quality of life and impose significant economic and social burdens (Zhao et al., 2011). While various medications can effectively lower glycated hemoglobin (HbA1c) levels in T2DM patients, appropriate lifestyle interventions combined with comprehensive care can achieve glycemic targets (Gorter et al., 2012).

Self-management refers to the process by which individuals utilize their health-related beliefs and attitudes to adopt appropriate health behaviors for promoting or maintaining their well-being, while continuously monitoring, managing, and caring for disease symptoms (Hu et al., 2020). According to Koch et al. (2004), self-management encompasses three distinct categories of activities: (1) medical management, such as medication adherence; (2) behavioral management, such as adopting new behaviors; and (3) emotional management, such as coping with frustration and despair. Since T2DM is a chronic condition, patients typically visit healthcare professionals only a few times per year, requiring them to manage all these aspects independently. In diabetes management, self-management serves as an effective approach to reduce the risk of complications and improve quality of life.

Self-management behavior (SMB) refers to an individual's ability to manage their own behaviors over an extended period, including regular medication adherence, healthy diet, physical activity, foot care, smoking cessation, and self-monitoring of blood glucose (Alyami et al., 2019). Coleman et al. (2009) demonstrated that successful support for self-management in T2DM patients can positively influence their lifestyle and ultimately lead to improved health outcomes. However, a comparative international study by Elissen et al. (2013) revealed that self-management support remains relatively underdeveloped in most countries. Gonzalez et al. (2016) found that many T2DM patients do not adhere to recommended self-management activities. A study by Alrahbi (2014) revealed low levels of self-management behavior among diabetic patients, with only 1% monitoring blood glucose, 9.5% engaging in regular physical exercise, and 18% following recommended diets.

Nursing is highly practical, and nursing students must master systematic theoretical knowledge and practical skills to become qualified nurses. However, clinical internship time is limited, and legal restrictions on nursing students, along with patient safety concerns, make it difficult to meet learning demands through patient contact alone. Simulation teaching, which provides students with opportunities to experience real clinical scenarios while ensuring patient safety and without increasing psychological pressure, has become one of the primary teaching strategies to enhance nursing students' capabilities (Cui, J., & Qi, W. Q., 2024). Scholars define simulation teaching as an instructional approach that recreates near-real clinical settings to simulate the environmental and developmental processes of events or phenomena, facilitating knowledge acquisition, skill enhancement, and emotional engagement (Zhong, J., 2022).

METHODOLOGY

This study took third-year undergraduate nursing students from a university in Yunnan Province, China as research subjects, primarily exploring the improvement of self-supportive virtual education capabilities among nursing students with T2DM in minority regions through virtual simulation education. The study period was from March 2026 to December 2026, adopting a non-randomized simultaneous control design in quasi-experimental research. The scope of the study was limited to classroom teaching scenarios and did not involve online teaching or analysis of long-term learning outcomes.

Teaching Preparation Phase: This phase was conducted one week prior to the practical training session and was synchronized with the corresponding theoretical course content. The primary tasks included the development and provision of simulated cases, student grouping, task allocation for group members, preparation of practical training supplies and equipment, construction of a simulated environment, as well as the selection and training of standardized patients.

Phase of Constructing and Implementing Virtual Teaching Programs: This consisted of four main processes:

1. **Pre-simulation:** As the preparatory phase, this aimed to facilitate a smooth educational experience and reduce participant anxiety. This course design primarily adopted a group-based approach for virtual case discussions and analyses, utilizing video media to learn and observe typical symptoms, signs, or content-related specialized nursing skill demonstrations.
2. **Pre-briefing:** A targeted phase for constructing simulated program scenarios, this effectively alleviated participants' anxiety and stress by clarifying the objectives and expectations of simulation activities. The design was based on the HSSOBP™ Pre-briefing Standards of Healthcare Simulation Best Practice™ (INACSL Standards Committee, 2021), involving time allocation for instructors, case presentation, and classroom objective articulation.
3. **Simulation:** Students from each group entered standardized wards to conduct nursing assessments, document physical examinations, and collaboratively develop nursing plans. They

implemented basic and specialized nursing skills, as well as health education. Other groups observed the simulation activities through on-site video recordings.

4. **Debriefing:** A pivotal component of virtual teaching, this was a formal collaborative reflection process initiated by instructors in discussion rooms after simulated teaching activities. Based on Knoles' adult learning theory, this instructional design adopted a non-judgmental review approach to effectively cultivate students' self-reflection and evaluation skills. The review process was systematically planned based on the GAS model (Sawyer T. & Eppich W., 2016) steps (collecting-analyzing-summarizing) to ensure orderliness and efficiency.

Design of the Evaluation Scheme: According to Jeffries' simulation theory, the evaluation primarily focused on knowledge, skills, learner satisfaction, critical thinking, and self-confidence. Therefore, the design of teaching evaluation adopted professional virtual education assessment tools such as the Intrinsic Motivation Scale and the Seattle University Simulation Evaluation Tool, evaluating from both student and teacher perspectives to understand differences in students' pre- and post-virtual training aspects including interest, self-confidence, multiple skills, clinical thinking, teamwork ability, and professional behavior.

RESULTS

The systematic review identified the core dimensions of self-management support competence, including health education competence, behavior change support competence, communication and empathy competence, and individualized management competence. These findings provided a solid evidence-based foundation for project development.

Guided by Pamela R. Jeffries' Jeffries Simulation Theory (2005), this study developed a systematic virtual simulation teaching model encompassing learning objective design, scenario script development, instructional strategy configuration, teacher role definition, and evaluation metrics. The project focused on core competencies for self-management support in T2DM patients, incorporating culturally contextualized design tailored to minority regions to enhance situational relevance and practical guidance value.

Empirical study results showed that the total score and each dimension score of self-management support competence in the intervention group were significantly higher than those in the control group ($P < 0.05$), with particularly notable improvements in communication competence and behavior change support competence. Additionally, the intervention group demonstrated significantly higher learning satisfaction and self-efficacy. The results indicated that virtual simulation teaching effectively addresses the limitations of traditional classroom instruction in authentic interactive training, establishing it as an effective pedagogical model for cultivating core competencies in chronic disease nursing.

DISCUSSION AND CONCLUSION

This study, centered on the theme of developing and evaluating a virtual simulation education project for self-management support in nursing students for T2DM patients, was systematically conducted based on evidence-based evidence and educational theory guidance, involving evidence integration, project construction, and effectiveness evaluation.

The findings demonstrate that through systematic review methods, the study integrated domestic and international research evidence on self-management support and virtual simulation teaching for T2DM patients, identifying critical elements including a patient-centered framework for self-management support (diet, exercise, blood glucose monitoring, medication adherence, psychological support), emphasis on cultivating communication skills and behavioral change support capabilities, focus on situational authenticity and decision-making process training, and reinforcement of feedback and reflection mechanism design. The evidence demonstrates that virtual simulation teaching can significantly enhance nursing students' self-management support abilities, self-efficacy, and clinical decision-making skills.

Students in the intervention group demonstrated significantly higher total scores and dimension-specific scores in self-management support compared to the control group. Notable improvements were observed in communication skills, behavioral change support, and individualized education capabilities. Both learning satisfaction and self-efficacy showed significant enhancement. The results indicate that virtual simulation teaching effectively addresses the limitations of traditional classroom instruction in authentic interactive training, establishing it as an effective pedagogical model for cultivating core competencies in chronic disease nursing.

This study not only validated the educational efficacy but also developed a replicable and scalable virtual simulation teaching model for chronic disease self-management support, characterized by theory-driven, evidence-based, structurally complete, with a clear evaluation system, and sustainable for improvement. This model can be extended to other chronic disease areas, providing a practical pathway for nursing education reform.

In conclusion, this study successfully developed and validated a virtual simulation education program designed to enhance self-management support capabilities for T2DM patients. The findings demonstrate that the evidence-based and theory-driven virtual simulation teaching model effectively improves core self-management competencies among nursing students, representing a significant direction for the transformation of chronic disease nursing education. This research provides both theoretical foundations and practical evidence for the application of virtual simulation teaching in chronic disease management capacity development within nursing education, holding substantial implications for strengthening primary care capabilities in chronic disease management.

RECOMMENDATIONS FOR FUTURE RESEARCH

Future research should conduct randomized controlled trials under multicenter and large-sample conditions to enhance the external validity and generalizability of the results. Simultaneously, the follow-up period should be extended to evaluate the long-term retention and clinical transfer effects of virtual simulation teaching on nursing students' self-management support capabilities. A mixed-method approach is recommended, combined with qualitative interviews to thoroughly explore the teaching mechanisms. Technically, virtual reality and intelligent feedback systems can be integrated to improve situational authenticity and personalized guidance levels. Additionally, a standardized framework and evaluation system for virtual simulation teaching in chronic disease care should be established, with its applicability and stability validated across other chronic disease domains.

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EDUCATIONAL MANAGEMENT OF STUDENTS' MENTAL HEALTH IN GUANGDONG COUNTRY GARDEN POLYTECHNIC

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ABSTRACT

With the continuous advancement of higher education reform, strengthening students' mental health education has become an essential task for universities. As a vocational institution committed to cultivating high-quality applied talents, Guangdong Country Garden Polytechnic faces the urgent need to improve its educational management system for students' mental health, so as to better respond to the growing psychological needs of students and the evolving requirements of holistic education. This study aims: 1. To study the level of Educational Management of Students' Mental Health in Guangdong Country Garden Polytechnic. 2. To propose the guidelines for developing Educational Management of Students' Mental Health in Guangdong Country Garden Polytechnic. The research results indicate that the institution has achieved a relatively high level of mental health education management, which plays a positive role in enhancing students' psychological well-being and overall development. As a guideline, the college may further optimize counseling service systems, strengthen teachers' professional competence in psychological guidance, improve diversified student support channels, and promote systematic mental health education activities, thereby building a more comprehensive, coordinated, and sustainable mental health management framework.

Keywords: Mental health education, Vocational school management, Education management model

INTRODUCTION

With the increasing emphasis on student well-being in China, promoting mental health among students has become a core task and primary challenge for the development of higher education institutions. Guangdong Country Garden Polytechnic, located in Guangdong Province and characterized as a key vocational institution, plays a crucial role in cultivating skilled professionals and supporting regional socio-economic development (Olofin, S. O., Ogunjobi, A. O., Falemu, F. A., Akinwumi, I. O., & Olumilua, B. 2023). Meanwhile, the rapidly

evolving educational environment and heightened academic pressures have revealed the limitations of traditional student management models, which are insufficient to fully meet the diverse psychological and emotional needs of students. Guangdong Country Garden Polytechnic has therefore focused on enhancing educational management of students' mental health by introducing systematic support programs, psychological counseling services, and awareness initiatives aimed at improving students' well-being, resilience, and adaptive capacities (Panda, S. P., & Padhy, A.(2025).

In the context of increasingly complex student populations and competitive vocational education, the institution implements measures such as mental health workshops, counseling sessions, peer-support networks, and campus-wide awareness campaigns to effectively support students' psychological needs, enhance their coping strategies, and promote a healthy learning environment. The improvement of students' mental health emphasizes structured and evidence-based approaches, particularly in terms of educational management and resource allocation (Kilgus, S. P., Oddleifson, C., Kittelman, A., & Rowe, D. A. 2022). Guangdong Country Garden Polytechnic strives to establish a comprehensive mental health management system covering service provision, faculty training, student accessibility, and proactive awareness programs. By constructing such a system, the institution better addresses students' emotional and psychological needs and fosters continuous enhancement of overall student well-being Bantjes, J., Hunt, X., & Stein, D. J. 2022).

Furthermore, as the educational environment continues to evolve, higher education institutions must not only focus on supporting students' mental health but also create a culture that encourages early identification of mental health issues, timely intervention, and continuous improvement of support mechanisms. Guangdong Country Garden Polytechnic recognizes that proactive mental health management and student engagement are critical drivers of academic success and personal development. Therefore, establishing a dynamic management system that aligns institutional goals with students' psychological needs is essential. Such mechanisms facilitate early support, promote students' self-efficacy and resilience, and provide clear pathways for accessing professional guidance, ultimately enhancing the overall educational experience. Moreover, the integration of modern digital technologies into mental health management enables more precise monitoring of student well-being, allowing timely feedback and targeted interventions (Zhou, Y., Han, J., Li, J., Zhou, Y., Wang, K., & Huang, Y. 2021). By combining these elements, Guangdong Country Garden Polytechnic seeks to build a resilient and adaptive mental health management framework capable of responding effectively to both internal and external challenges. This comprehensive strategy ensures the continuous improvement of student well-being, meets societal expectations, and contributes meaningfully to the sustainable development of vocational education (Lin, X. 2024).

As national and societal demands for student mental health continue to rise, Guangdong Country Garden Polytechnic must actively adapt its management strategies. Optimizing mental health management helps strengthen the institution's policy adaptability and students' psychological resilience, ensuring that educational management aligns with the requirements of vocational education in the new era. This provides a solid foundation for the college's sustainable development. This study aims to analyze the current practices of mental health

management at Guangdong Country Garden Polytechnic, clarify areas for improvement, and propose practical optimization strategies to enhance students' psychological support and overall well-being, thereby strengthening the institution's educational effectiveness and regional influence (Yu, R. 2024, September).

Given the crucial role that effective mental health management plays in supporting student development, it is important to thoroughly examine whether current management practices adequately meet students' needs and institutional objectives (Song, L. 2024). Although Guangdong Country Garden Polytechnic has implemented several initiatives in this area, there remains a lack of comprehensive academic research. Therefore, this study is both practically significant and theoretically meaningful. It seeks to fill this research gap and offer evidence-based recommendations to improve the effectiveness of student mental health management, providing valuable insights for other vocational institutions facing similar challenges and contributing to the overall quality and sustainable development of higher education in China (Parwez, S. 2024).

OBJECTIVE

1. To study the level of Educational Management of Students' Mental Health in Guangdong Country Garden Polytechnic
2. To propose the guidelines for developing Educational Management of Students' Mental Health in Guangdong Country Garden Polytechnic

METHODOLOGY

The objectives of the study on Educational Management of Students' Mental Health in Guangdong Country Garden Polytechnic are: 1. To study the level of Educational Management of Students' Mental Health in Guangdong Country Garden Polytechnic. 2. To propose the guidelines for developing Educational Management of Students' Mental Health in Guangdong Country Garden Polytechnic and the researchers conducted the following steps:

- 1 Population and sample
- 2 Research tools
- 3 Data collection
- 4 Data analysis

Sub-Section 1 Population and sample

Population used in the study

The research subjects are Guangdong Country Garden Polytechnic, with a total of 447 faculty and staff Sample used in the study

The sample group uses 210 teachers, and the researcher uses the sample size table of Krejcie & Morgan, (1970, pp. 607-610)

Sub-Section 2 Research tools

Research Questionnaire

The tool used in this study is a questionnaire on the management of mental health education at Guangdong Country Garden Polytechnic, which is divided into the following two parts:

Part I: Questionnaire survey on the personal status of the respondents. The basic information of the respondents was asked in the form of a checklist, namely 1 the gender of the respondents, 2 the age of the respondents, 3 the highest educational background of the respondents, 4 the work experience of the respondents, and 5 the status of the work organization.

Part II: The questionnaire on mental health education management at Guangdong Country Garden Polytechnic was divided by the researcher into four aspects with a total of 40 items, namely:

- 1 Provision of School Psychological Counseling Services , A total of 10 items
- 2 Teachers' Psychological Health Education Competence, A total of 10 items
- 3 Channels for Students to Access Psychological Support, A total of 10 items
- 4 School Psychological Health Promotion Efforts, A total of 10 items

The second part of the questionnaire is a 5-point estimation scale.

5 means that management is at the highest level.

4 means that management is at a high level.

3 means that management is at a Moderate level.

2 means that management is at a low level.

1 means that management is at the lowest level

Sub-Section 3 Data collection

The researcher distributed the questionnaire to the sample group and collected data from 210 respondents according to the following procedures:

1. Maintaining Contact with Teachers and Administrators: The researcher maintained communication with the administrators and teachers of Guangdong Country Garden Polytechnic to assist in collecting school data and to determine the dates for data collection. The questionnaires were collected through both in-person distribution and online submission.

2. Data Collection from the Sample: Data were sampled and collected from the teachers and educational administrators of Guangdong Country Garden Polytechnic to ensure the representativeness and diversity of the sample.

3. Verification of Questionnaire Completeness: The researcher ensured the completeness of the questionnaires, coded the returned questionnaires, and used computer programs to evaluate the data results to guarantee the accuracy of the collected data.

Sub-Section 4 Data analysis

The researcher compiled all returned questionnaires, checked the completeness of each one, and conducted statistical analysis using computer software. The procedures were as follows:

Analysis of the First Section of the Questionnaire: The respondents' basic information was analyzed using qualitative variables, specifically frequency and percentage. Basic data related to the students' mental health education management at Guangdong Country Garden Polytechnic were collected and presented in tabular form.

Analysis of the Second Section of the Questionnaire: Data were analyzed by calculating the mean, standard deviation, and overall status to assess the actual level of students' mental health education management at Guangdong Country Garden Polytechnic. The interpretation of the mean values was as follows:

An average of 4.51 – 5.00: Indicates the management is at the highest level.

An average of 3.51 – 4.50: Indicates the management is at a high level.

An average of 2.51 – 3.50: Indicates the management is at a moderate level.

An average of 1.51 – 2.50: Indicates the management is at a low level.

An average of 1.00 – 1.50: Indicates the management is at the lowest level.

Test whether the responses to the questionnaire are reliable. In the process of analyzing the questionnaire, the researchers hired a team of teachers who were not in the sample group as testers and used Cronbach's alpha to calculate the reliability value of the questionnaire items. George and Mallery (2010) explained that the values of the Cronbach coefficient are as follows: ≥ 0.9 = excellent, ≥ 0.8 = good, ≥ 0.7 = acceptable, ≥ 0.6 = problematic, ≥ 0.5 = poor, ≤ 0.5 = unacceptable. Based on this evaluation index, the Cronbach coefficient Alpha value is set at at least ≥ 0.7 , and questionnaires with a score of ≥ 0.7 are classified as valid questionnaires for this study, while questionnaires with a score of ≤ 0.5 are excluded as invalid questionnaires to ensure the reliability of the research questionnaire.

The questionnaire was taken to the non-sample group, and 30 people participated in the study. Cronbach's alpha was calculated to be equal to 0.8390. The reliability of the questionnaire was good, and the results showed that the scale had strong internal consistency and was suitable for continued use.

RESULTS

The data analysis objectives of the study on the management of students' mental health education at Guangdong Country Garden Polytechnic are to examine the current implementation status of students' mental health education management. The data analysis results are presented in the following three parts:

Part 1: Analysis of the frequency and percentage of respondents' personal conditions.

Part 2: Analysis of the mean and standard deviation of the students' mental health education management level at Guangdong Country Garden Polytechnic.

Symbols used in data analysis

n represents the number of samples.

$\bar{x}$ represents the mean of the sample.

S.D represents the standard deviation.

Data analysis results

Part 1: Analysis of the Frequency and Percentage of Respondents' Personal Conditions

The researcher distributed a survey on mental health education management to the faculty and staff of Guangdong Country Garden Polytechnic. All survey respondents were teachers, totaling 210 individuals, accounting for 100% of the sample. The details of their work experience are presented From Table 1.

Table 1 Results of general data analysis of responden

General information	General information of respondents	
	(n=210)	
	Frequency	Percentage
1. Gender of respondents		
Male	112	53.33%
Female	98	46.67%
Total	210	100.00%
2. Age of respondents		
22 - 30 years old	48	22.86%
30 - 35 years old	55	26.19%
35 - 40 years old	45	21.43%
40 - 45 years old	32	15.24%
45 - 50 years old	18	8.57%

Over 50 years older	12	5.71%
Total	210	100.00%
3.Respondent's highest educational		
Bachelor's degree	90	42.86%
Master's degree	101	48.10%
Doctoral degree	19	9.05%
Total	210	100.00%
4. The work experience of the respondents		
Under 6 years	57	27.14%
6 - 10 years	63	30.00%
11 - 15 years	39	18.57%
16 - 20 years	29	13.81%
More than 20 years	22	10.48%
Total	210	100.00%
5. The Work establishment status		
non-tenured	76	36.19%
tenured	81	38.57%
Contract preparation	33	15.71%
Preparation of temporary	20	9.52%
Total	210	100.00%

From Table 1, it can be seen that the total sample for this general data analysis consisted of 210 individuals.

In terms of gender distribution, there were 112 male teachers, accounting for 53.33%, and 98 female teachers, accounting for 46.67%. Overall, the proportion of male teachers is slightly higher than that of female teachers. The gender structure is relatively balanced, indicating that the faculty at Guangdong Country Garden Polytechnic demonstrates a relatively even development trend in terms of gender composition.

Regarding age distribution, the respondents' ages are fairly diverse. The largest age group is 30-35 years, accounting for 26.19%, followed by 22-30 years at 22.86%, and 35-40

years at 21.43%. Teachers aged 40–45 account for 15.24%, while those aged 45–50 and over 50 account for 8.57% and 5.71%, respectively. Overall, the faculty is dominated by young and middle-aged teachers, showing a relatively youthful trend with strong development vitality and growth potential.

In terms of educational background, teachers with a master's degree make up the largest proportion at 48.10%, followed by those with a bachelor's degree at 42.86%, and those with a doctoral degree at 9.05%. This indicates that the faculty has a relatively high overall educational level, with a large proportion of graduate-educated teachers, providing a solid talent foundation for the professional and standardized implementation of mental health education management.

Regarding work experience, teachers with 6–10 years of service account for the highest proportion at 30.00%, followed by those with less than 6 years at 27.14%. Teachers with 11–15 years, 16–20 years, and over 20 years of service account for 18.57%, 13.81%, and 10.48%, respectively. This shows that the faculty is primarily composed of young and middle-aged teachers while maintaining a certain proportion of experienced staff, presenting a reasonably balanced experience structure overall.

Regarding employment status, 38.57% of teachers have formal positions, 36.19% are non-tenured, 15.71% are on contract, and 9.52% are temporarily employed. This indicates that the faculty employs a diverse range of work arrangements, including stable formal staff as well as a certain proportion of flexible personnel. Such a structural characteristic may have some impact on the stability and continuity of mental health education management.

Part 2: Analysis Results of the Mean and Standard Deviation of Students' Mental Health Education Management Level at Guangdong Country Garden Polytechnic

The current status of students' mental health education management at Guangdong Country Garden Polytechnic includes: 1) Provision of School Psychological Counseling Services, 2) Teachers' Psychological Health Education Competence, 3) Channels for Students to Access Psychological Support, and 4) School Psychological Health Promotion Efforts. The specific situation is shown in Tables 2– 6.

Table 2 Analysis of the Mean and Standard Deviation Results of Students' Mental Health Education Management Level

Student Psychological Health Education Management Level	n=210		Interpretation
	$\bar{X}$	S.D.	
Provision of School Psychological Counseling Services	3.62	0.85	High level.
Teachers' Psychological Health Education Competence	3.61	0.85	High level.

Channels for Students to Access Psychological Support	3.58	0.84	High level.
School Psychological Health Promotion Efforts	3.60	0.83	High level.
Total	3.60	0.84	High level.

Form Table 4.2, the results of the analysis of mean and standard deviation for factors of Student Psychological Health Education Management Level at Guangdong Country Garden Polytechnic come at a high level ($\bar{X}$ = 3.60, S.D. = 0.84).

If ordering the averages from the highest to the lowest, the highest value is: Provision of School Psychological Counseling Services ($\bar{X}$ = 3.62, S.D. = 0.85), followed by Teachers' Psychological Health Education Competence ($\bar{X}$ = 3.61, S.D. = 0.85), School Psychological Health Promotion Efforts ($\bar{X}$ = 3.60, S.D. = 0.83), and the lowest, Channels for Students to Access Psychological Support ($\bar{X}$ = 3.58, S.D. = 0.84).

These results indicate that all components of student psychological health education management are evaluated at a high level, suggesting that Guangdong Country Garden Polytechnic provides a generally supportive and effective environment for students' psychological health. Among the factors, school counseling services and teacher competence contribute most to effective management, while access channels for students, though still high, may represent an area for further enhancement.

Table 3 Analysis of the Mean and Standard Deviation of Provision of School Psychological Counseling Services

Provision of School Psychological Counseling Services	n=210		Interpretation
	$\bar{X}$	S.D.	
1.Availability of psychological counseling rooms	3.82	0.83	High Level
2.Number of full-time psychological counselors	3.47	0.91	Moderate level
3.Accessibility of counseling services to students	3.76	0.79	High Level
4.Frequency of individual counseling sessions	3.42	0.94	Moderate level
5.Group counseling or workshop opportunities	3.61	0.87	High Level
6.Confidentiality and privacy of counseling services	3.84	0.76	High Level
7.Online or digital counseling resources	3.38	0.90	Moderate level

8.Emergency psychological support availability	3.63	0.81	High Level
9.Awareness and promotion of counseling services among students	3.57	0.88	High Level
10.Integration of counseling services with academic and student affairs	3.69	0.79	High Level
Total	3.62	0.85	High Level

From Table 3, the results of the analysis of mean and standard deviation for factors of Provision of School Psychological Counseling Services at Guangdong Country Garden Polytechnic show that the overall level is high ($\bar{X}$ = 3.62, S.D. = 0.85). When ordering the means from highest to lowest, the highest is: Confidentiality and privacy of counseling services ($\bar{X}$ = 3.84, S.D. = 0.76), followed by Availability of psychological counseling rooms ($\bar{X}$ = 3.82, S.D. = 0.83), Integration of counseling services with academic and student affairs ($\bar{X}$ = 3.69, S.D. = 0.79), Emergency psychological support availability ($\bar{X}$ = 3.63, S.D. = 0.81), Group counseling or workshop opportunities ($\bar{X}$ = 3.61, S.D. = 0.87), Awareness and promotion of counseling services among students ($\bar{X}$ = 3.57, S.D. = 0.88), Accessibility of counseling services to students ($\bar{X}$ = 3.76, S.D. = 0.79), Number of full-time psychological counselors ($\bar{X}$ = 3.47, S.D. = 0.91), Frequency of individual counseling sessions ($\bar{X}$ = 3.42, S.D. = 0.94), and Online or digital counseling resources ($\bar{X}$ = 3.38, S.D. = 0.90), with the lowest being Online or digital counseling resources, which is at a Moderate level.

Table 4 Analysis of the Mean and Standard Deviation of Teachers' Psychological Health Education Competence.

Teachers' Psychological Health Education Competence	n=210		Interpretation
	$\bar{X}$	S.D.	
1.Teachers' proficiency in identifying students' psychological problems	3.79	0.82	High Level
2.Teachers' practical performance in conducting individual counseling	3.62	0.87	High Level
3.Teachers' skill level in organizing group counseling or workshops	3.55	0.85	High Level
4.Teachers' response to students' psychological emergencies	3.48	0.90	Moderate level
5.Teachers' mastery of psychological health education knowledge	3.72	0.81	High Level
6.Teachers' proficiency in applying counseling techniques	3.51	0.88	High Level

7.Teachers' actual performance in promoting students' psychological health	3.63	0.84	High Level
8.Teachers' effectiveness in establishing good psychological communication with students	3.59	0.86	High Level
9.Teachers' involvement in guiding students' psychological health planning	3.50	0.83	Moderate level
10.Teachers' participation and engagement in psychological health training and continuing education	3.66	0.82	High Level
Total	3.61	0.85	High Level

From Table 4, the results of the analysis of mean and standard deviation for factors of Teachers' Psychological Health Education Competence at Guangdong Country Garden Polytechnic show that the overall level is high ($\bar{X}$ = 3.61, S.D. = 0.85). When ordering the means from highest to lowest, the highest is: Teachers' mastery of psychological health education knowledge ($\bar{X}$ = 3.72, S.D. = 0.81), followed by Teachers' actual performance in promoting students' psychological health ($\bar{X}$ = 3.63, S.D. = 0.84), Teachers' proficiency in identifying students' psychological problems ($\bar{X}$ = 3.79, S.D. = 0.82), Teachers' participation and engagement in psychological health training and continuing education ($\bar{X}$ = 3.66, S.D. = 0.82), Teachers' practical performance in conducting individual counseling ($\bar{X}$ = 3.62, S.D. = 0.87), Teachers' skill level in organizing group counseling or workshops ($\bar{X}$ = 3.55, S.D. = 0.85), Teachers' effectiveness in establishing good psychological communication with students ($\bar{X}$ = 3.59, S.D. = 0.86), Teachers' proficiency in applying counseling techniques ($\bar{X}$ = 3.51, S.D. = 0.88), Teachers' involvement in guiding students' psychological health planning ($\bar{X}$ = 3.50, S.D. = 0.83), and Teachers' response to students' psychological emergencies ($\bar{X}$ = 3.48, S.D. = 0.90), with the lowest being Teachers' response to students' psychological emergencies, which is at a Moderate level.

Table 5 Analysis of the Mean and Standard Deviation of Channels for Students to Access Psychological Support

Channels for Students to Access Psychological Support	n=210		Interpretation
	$\bar{X}$	S.D.	
1.Students can obtain support through the school's psychological counseling center	3.72	0.82	High Level
2.Students can receive psychological guidance from class advisors or counselors	3.64	0.85	High Level
3.Students can get psychological support through peer assistance or student organizations	3.58	0.83	High Level
4.Students can access help via school hotlines or online counseling platforms	3.46	0.88	Moderate level
5.Students can gain psychological knowledge through mental health lectures or workshops	3.60	0.81	High Level
6.Students can obtain information from mental	3.49	0.86	Moderate level

health promotion materials			
7.Students can receive psychological guidance from academic tutors	3.55	0.84	High Level
8.Students can access resources via the school's mental health website or apps	3.44	0.87	Moderate level
9.Students can gain support through campus events or mental health themed activities	3.61	0.80	High Level
10.Students can easily access emergency psychological assistance	3.67	0.79	High Level
Total	3.58	0.84	High Level

From Table 5, the results of the analysis of mean and standard deviation for factors of Channels for Students to Obtain Psychological Support at Guangdong Country Garden Polytechnic show that the overall level is high ($\bar{X}$ = 3.58, S.D. = 0.84). When ordering the means from highest to lowest, the highest is: Students can easily access emergency psychological assistance ($\bar{X}$ = 3.67, S.D. = 0.79), followed by Students can obtain support through the school's psychological counseling center ($\bar{X}$ = 3.72, S.D. = 0.82), Students can receive psychological guidance from class advisors or counselors ($\bar{X}$ = 3.64, S.D. = 0.85), Students can gain psychological knowledge through mental health lectures or workshops ($\bar{X}$ = 3.60, S.D. = 0.81), Students can gain support through campus events or mental health themed activities ($\bar{X}$ = 3.61, S.D. = 0.80), Students can get psychological support through peer assistance or student organizations ($\bar{X}$ = 3.58, S.D. = 0.83), Students can receive psychological guidance from academic tutors ($\bar{X}$ = 3.55, S.D. = 0.84), Students can access resources via the school's mental health website or apps ($\bar{X}$ = 3.44, S.D. = 0.87), Students can obtain information from mental health promotion materials ($\bar{X}$ = 3.49, S.D. = 0.86), and Students can access help via school hotlines or online counseling platforms ($\bar{X}$ = 3.46, S.D. = 0.88), with the lowest being Students can access help via school hotlines or online counseling platforms, which is at a Moderate level.

Table 6 Analysis of the Mean and Standard Deviation of School Psychological Health Promotion Efforts

School Psychological Health Promotion Efforts	n=210		Interpretation
	$\bar{X}$	S.D.	
1.The school regularly conducts psychological health promotion activities	3.71	0.81	High Level
2.The school promotes psychological health knowledge through posters and bulletin boards	3.58	0.84	High Level
3.The school disseminates psychological health information via campus broadcasting or official platforms	3.50	0.86	Moderate level
4.The school organizes psychological health themed lectures or workshops	3.63	0.82	High Level
5.The school holds mental health education festivals or special events	3.57	0.83	High Level
6.The school provides psychological health education materials to new students	3.45	0.88	Moderate level
7.The school publishes psychological health	3.52	0.85	High Level

information on social media platforms			
8.The school regularly conducts psychological health knowledge quizzes or surveys	3.47	0.87	Moderate level
9.The school strengthens psychological health promotion during exam periods or high academic pressure times	3.66	0.80	High Level
10.The school establishes long-term mechanisms and dedicated teams for psychological health promotion	3.68	0.79	High Level
Total	3.60	0.83	High Level

From Table 6, the results of the analysis of mean and standard deviation for factors of School Psychological Health Promotion Efforts at Guangdong Country Garden Polytechnic show that the overall level is high ($\bar{X}$ = 3.60, S.D. = 0.83). When ordering the means from highest to lowest, the highest is: The school establishes long-term mechanisms and dedicated teams for psychological health promotion ($\bar{X}$ = 3.68, S.D. = 0.79), followed by The school strengthens psychological health promotion during exam periods or high academic pressure times ($\bar{X}$ = 3.66, S.D. = 0.80), The school regularly conducts psychological health promotion activities ($\bar{X}$ = 3.71, S.D. = 0.81), The school organizes psychological health themed lectures or workshops ($\bar{X}$ = 3.63, S.D. = 0.82), The school promotes psychological health knowledge through posters and bulletin boards ($\bar{X}$ = 3.58, S.D. = 0.84), The school holds mental health education festivals or special events ($\bar{X}$ = 3.57, S.D. = 0.83), The school publishes psychological health information on social media platforms ($\bar{X}$ = 3.52, S.D. = 0.85), The school regularly conducts psychological health knowledge quizzes or surveys ($\bar{X}$ = 3.47, S.D. = 0.87), The school provides psychological health education materials to new students ($\bar{X}$ = 3.45, S.D. = 0.88), and The school disseminates psychological health information via campus broadcasting or official platforms ($\bar{X}$ = 3.50, S.D. = 0.86), with the lowest being The school disseminates psychological health information via campus broadcasting or official platforms, which is at a Moderate level.

CONCLUSION AND FUTURE WORK

This study, titled “Research on Student Mental Health Education Management at Guangdong Country Garden Polytechnic”, systematically examined the current status of student mental health education management and the effectiveness of various practical measures at the institution through a questionnaire survey and in-depth interviews with five core teachers and administrators. The study analyzed four dimensions: the provision of psychological counseling services, teachers’ mental health education capabilities, channels through which students access psychological support, and the school’s mental health promotion efforts, providing an in-depth understanding of the school’s strengths and weaknesses in safeguarding student mental health and enhancing educational management.

The study found that the school performs notably well in the accessibility, confidentiality, and integration of psychological counseling services with academic affairs, indicating a certain level of success in building a safe and convenient counseling system and an environment that supports students’ mental development. Teachers demonstrated strong capabilities in identifying students’ psychological issues, conducting individual counseling, and promoting student mental health, reflecting the effectiveness of the school’s training programs and efforts to enhance teachers’ professional

competencies. Students are able to access psychological support through multiple channels, including the counseling center, advisors, peer support, online platforms, and campus activities, indicating a relatively comprehensive support system.

At the same time, the school's mental health promotion efforts are generally at a high level, with regular lectures, workshops, promotional materials, and multimedia dissemination. Particularly during periods of high academic stress, mental health promotion activities effectively increase students' awareness and attention to mental health. Teachers and administrators generally believe that the school's institutional design and resource allocation provide a solid foundation for mental health education, though there is still room for improvement in areas such as digital resource provision, the accessibility of emergency psychological assistance, and cross-departmental integration.

Overall, Guangdong Country Garden Polytechnic has established a systematic and multidimensional management mechanism for student mental health education. Its psychological counseling services, teachers' capabilities, student support channels, and promotion efforts all demonstrate a high level of quality, providing stable support and effective safeguards for student mental health. This system plays a positive role in enhancing the overall level of educational management at the school and lays a solid foundation for students' psychological development and the optimization of the learning environment.

Future work should focus on enhancing the psychological health management system at Guangdong Country Garden Polytechnic. Efforts may include improving counseling service procedures, integrating digital platforms for remote support, and establishing mechanisms for continuous monitoring and feedback. Developing teachers' competencies through targeted training and professional development programs can better equip faculty to address diverse student needs. Expanding and diversifying support channels, such as peer networks, student clubs, and online resources, can improve accessibility and responsiveness. Strengthening emergency support and crisis response mechanisms will further ensure timely intervention. Collectively, these measures aim to create a more comprehensive, adaptive, and student-centered mental health management framework that promotes both academic success and overall well-being.

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the knowledge, experience, and inspiration gained from this study forward, hoping to contribute to the improvement and innovation of educational management practices in mental health.

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THE ROLE AND FUNCTION OF TEACHERS IN IMPROVING THE QUALITY OF HIGHER EDUCATION IN GUANGDONG ENGINEERING POLYTECHNIC

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ABSTRACT

This study aims to identify and analyze the current situation of teachers' role and function in improving higher education quality at Guangdong Engineering Polytechnic, and explore its optimization path under industry-education integration and digital transformation. Taking 328 teachers of the college as research subjects and 5 core faculty members as interview samples, a "fourfold embedding" (curriculum, industry, education, institutional) role function framework for higher vocational teachers was constructed. The results show that teachers' overall role function exertion reaches the highest level (Mean= 4.35, S. D.= 0.38), with outstanding performance in knowledge imparting and practical teaching guidance. Scientific role positioning, systematic support mechanisms and in-depth industry-education integration are confirmed as the key to giving play to teachers' role functions. Targeted optimization strategies are proposed to solve problems such as uneven industrial embedding and insufficient institutional participation of teachers, providing practical reference for the high-quality development of higher vocational education.

Keywords: Higher vocational education; Teachers' role and function; Education quality improvement; Industry-education integration

INTRODUCTION

In the context of globalization and the knowledge economy, higher vocational education undertakes the mission of supplying technical and skilled talents, and the adaptability of teachers' roles and functions has become the core factor determining the alignment between vocational education and industrial needs. UNESCO's 2022 Global Report on Vocational Education and Training points out that vocational education's core value has shifted from "skill training" to "competency and literacy cultivation". Developed countries have reshaped teachers' roles and strengthened industry-education collaboration to improve vocational education quality.

China's higher vocational education is in a transition from "scale expansion" to "connotative quality improvement". The "Double High Plan" (2019) and the newly revised Vocational Education Law (2022) have clearly defined the "dual-qualified" positioning and industrial adaptability requirements of higher vocational teachers, making teachers' roles evolve into multiple identities such as curriculum developers, industrial collaborators and quality assurers.

As a Class A construction unit of the national "Double High Plan", Guangdong Engineering Polytechnic is rooted in the Guangdong-Hong Kong-Macao Greater Bay Area, with its professional groups closely aligned with regional pillar industries. However, the school faces practical challenges such as the disconnection between some teachers' industrial practice experience and teaching content transformation, insufficient initiative in quality governance participation, and inconsistent digital teaching ability with industrial technology iteration speed. These problems restrict the full realization of the school's construction goals and the accurate alignment between talent training and industrial needs.

Based on constructivist learning theory, AMO framework and organizational support theory, this study constructs a "fourfold embedding" role function framework, incorporating institutional embedding into the core dimension to make up for the deficiency of existing research. Through quantitative and qualitative research, the study analyzes the current situation of teachers' role functions in the school, explores its influence mechanism on higher education quality, and puts forward optimization strategies. The research not only provides precise guidance for the school's teaching team construction, but also offers a replicable practical model for similar higher vocational colleges, promoting the overall high-quality development of higher vocational education.

This study focuses on three core research questions: 1) What is the current situation of teachers' "fourfold embedding" role functions at Guangdong Engineering Polytechnic 2) What is the influence mechanism of these role functions on higher education quality 3) What feasible optimization strategies can be proposed to improve teachers' role function exertion.

OBJECTIVE

1. To study The Role and Function of Teachers in Improving the Quality of Higher Education in Guangdong Engineering Polytechnic.
2. To propose The Role and Function of Teachers in Improving the Quality of Higher Education in Guangdong Engineering Polytechnic.

METHODOLOGY

This study adopts a mixed research method combining quantitative and qualitative research, with Guangdong Engineering Polytechnic as the research object, to systematically analyze teachers' role and function in improving higher education quality. The research process includes population and sample selection, research tool design, data collection and data analysis.

Population and Sample

Research Population: All 804 teachers of Guangdong Engineering Polytechnic (2025 data).

Questionnaire Sample: 328 teachers were selected using the Krejcie & Morgan sample size determination method, accounting for about 40.8% of the total population, ensuring the representativeness of the sample.

Interview Sample: 5 core faculty members from the school's management team and professional groups were selected by purposive sampling, including the college party committee secretary, dean, deputy party committee secretary, associate dean and office director, all with more than 10 years of educational management and professional teaching experience.

Research Tools

Research Questionnaire: Designed by the researcher, it is divided into two parts. Part 1 collects the basic information of respondents (gender, educational background, work experience, job establishment status, etc.). Part 2 includes 40 items across 5 dimensions: Factors of School Teacher, Factors of School Student, Factors of Teachers' Role and Function, Factors of Higher Education Quality, and Factors of Educational and Teaching Practice, using a 5-point Likert scale for evaluation (1=lowest level, 5=highest level).

Expert Interview Form: Based on the 5 research dimensions of the questionnaire, semi-structured interview questions are designed to explore the practical problems, causes and optimization suggestions of teachers' role function exertion in the school.

Tool Validity and Reliability: The questionnaire was reviewed by 3 experts in higher vocational education, and the Item Objective Congruence (IOC) value was 0.67-1.00, indicating good content validity. A pilot study was conducted with 30 teachers, and the Cronbach's Alpha coefficient of the questionnaire was 0.9316, showing high internal consistency and reliability.

Data Collection

Questionnaire Survey: The questionnaire was distributed to the sample teachers in both paper and online forms, with 328 valid questionnaires recovered, a recovery rate of 99.1%.

In-Depth Interview: Face-to-face interviews were conducted with 5 selected core faculty members, each interview lasting 40-60 minutes. The interviews were recorded with permission, and the interview content was sorted out and coded for content analysis.

Data Analysis

Quantitative Analysis: Using statistical software, the basic information of respondents was analyzed by frequency and percentage; the 5 research dimensions were analyzed by mean and standard deviation, and the exertion level of teachers' role functions was judged according to the mean value (1.00-1.50=lowest, 1.51-2.50=low, 2.51-3.50=moderate, 3.51-4.50=high, 4.51-5.00=highest).

Qualitative Analysis: The interview content was coded and categorized according to the 5 research dimensions, and the practical problems and optimization suggestions of teachers' role function exertion were summarized through content analysis, so as to supplement and explain the quantitative research results.

RESULTS

Basic Information of Respondents

The 328 valid respondents show the following characteristics in basic information (Table 1):

Gender Distribution: Relatively balanced, with 172 males (52.44%) and 156 females (47.56%).

Educational Background: Mainly master's degree, accounting for 64.94% (213 people); doctoral degree accounts for 20.12% (66 people); bachelor's degree accounts for 14.94% (49 people), reflecting a high overall educational level of the school's teachers.

Work Experience: 28.05% (92 people) have 11-15 years of experience, 27.13% (89 people) have 6-10 years of experience, and the team has a reasonable age and experience structure.

Job Establishment Status: Contract preparation is the main type, accounting for 51.14% (167 people); tenured accounts for 26.14% (86 people); non-tenured and temporary account for 22.72% in total.

Table 1 General Data Analysis of Respondents (n=328).

General Information	Frequency	Percentage (%)
Male	172	52.44
Female	156	47.56
Bachelor's Degree	49	14.94
Master's Degree	213	64.94
Doctoral Degree	66	20.12
≤5 years of work experience	61	18.60
6-10 years of work experience	89	27.13
11-15 years of work experience	92	28.05
16-20 years of work experience	53	16.16
>20 years of work experience	33	10.16
Non-tenured	19	5.68
Tenured	86	26.14
Contract preparation	167	51.14
Temporary preparation	56	17.04

Analysis of Mean and Standard Deviation of Research Dimensions The overall mean value of all research dimensions is 4.18 (S.D.=0.44), at a high level. The mean values of each dimension are ranked from high to low as follows: Factors of Teachers' Role and Function (4.35, highest level) > Factors of School Teacher (4.26, high level) > Factors of School Student (4.18, high level) > Factors of Educational

and Teaching Practice (4.12, high level) > Factors of Higher Education Quality (4.09, high level) (Table 2). Table 2 Mean and Standard Deviation Analysis of All Research Dimensions (n=328)

Research Dimensions	Mean	S.D.	Evaluation Level
Factors of School Teacher	4.26	0.42	High
Factors of School Student	4.18	0.45	High
Factors of Teachers' Role and Function	4.35	0.38	Highest
Factors of Higher Education Quality	4.09	0.48	High
Factors of Educational and Teaching Practice	4.12	0.47	High
Total	4.18	0.44	High

1. Factors of School Teacher (Mean=4.26, S.D.=0.42, High Level)

Teachers perform the best in "possessing professional knowledge and industrial practical experience" (4.52, highest level), followed by "mastering modern educational technologies" (4.41, highest level). The lowest score is "the school provides comprehensive training and resource support for teachers' professional development" (4.02, high level), indicating insufficient institutional support for teachers' professional development (Table 3).

Table 3 Mean and Standard Deviation of Factors of School Teacher (n=328)

Evaluation Items	Mean	S.D.	Evaluation Level
Professional knowledge and industrial practical experience	4.52	0.31	Highest
Mastery of modern educational technologies	4.41	0.35	Highest
Advanced educational and teaching concepts	4.36	0.37	High
Initiative in professional development and teaching research	4.28	0.40	High
Good professional attainments and ethics	4.25	0.41	High
Teaching and research collaboration atmosphere	4.19	0.43	High
Updating teaching content combined with industrial needs	4.15	0.44	High
School's training and resource support for teachers	4.02	0.47	High

2. Factors of School Student (Mean=4.18, S.D.=0.45, High Level)

Students have the strongest "professional learning willingness" (4.33, high level), and the lowest score is "learning foundation and acceptance ability adapting to teaching rhythm" (3.98, high level), reflecting obvious individual differences in students' learning foundation, which restricts the overall teaching effect (Table 4).

Table 4 Mean and Standard Deviation of Factors of School Student (n=328)

Evaluation Items	Mean	S.D.	Evaluation Level
Professional learning willingness	4.33	0.39	High
Initiative in using digital resources for learning	4.29	0.40	High
Attention to practical ability cultivation	4.26	0.41	High
Team cooperation ability	4.18	0.43	High
Cooperation with teaching activities	4.15	0.44	High
Initial career planning awareness	4.09	0.46	High
Initiative in consulting teachers for problems	4.07	0.46	High
Learning foundation adapting to teaching rhythm	3.98	0.49	High

3. Factors of Teachers' Role and Function (Mean=4.35, S.D.=0.38, Highest Level) This dimension is the best performing among all research dimensions. Teachers excel in "knowledge imparting and consolidating professional theoretical foundation" (4.58, highest level) and "practical teaching guidance and improving practical operation ability" (4.51, highest level). The lowest score is "participating in teaching quality evaluation and improvement" (4.08, high level), indicating insufficient exertion of teachers' institutional embedding function and low enthusiasm for participating in quality governance (Table 5). Table 5 Mean and Standard Deviation of Factors of Teachers' Role and Function (n=328)

Evaluation Items	Mean	S.D.	Evaluation Level
Knowledge imparting and theoretical foundation consolidation	4.58	0.30	Highest
Practical teaching guidance and practical ability improvement	4.51	0.32	Highest
Guiding skill competitions and innovation and entrepreneurship activities	4.45	0.34	Highest
Career planning and employment guidance	4.32	0.38	High
Classroom interaction and stimulating learning interest	4.28	0.40	High
Personalized teaching tutoring and considering individual differences	4.23	0.41	High

Evaluation Items	Mean	S.D.	Evaluation Level
Integrating ideological and political education into courses	4.19	0.43	High
Participating in teaching quality evaluation and improvement	4.08	0.45	High

4. Factors of Higher Education Quality (Mean=4.09, S.D.=0.48, High Level)

This dimension is the lowest performing among all research dimensions. The best score is "students' solid grasp of professional theoretical knowledge" (4.21, high level), and the lowest is "students' comprehensive development ability adapting to diversified employment demands" (3.92, high level), indicating that the school's talent training is insufficient in cultivating students' comprehensive ability, and there is room for improvement in employment quality and social adaptability (Table 6).

Table 6 Mean and Standard Deviation of Factors of Higher Education Quality (n=328)

Evaluation Items	Mean	S.D.	Evaluation Level
Solid professional theoretical knowledge	4.21	0.44	High
Professional practical ability meeting industrial post requirements	4.15	0.46	High
Social recognition of talent training quality	4.08	0.47	High
High employment rate and employment quality	4.02	0.49	High
Good professional ethics and occupational literacy	4.00	0.49	High
Teaching quality and talent training mode in line with vocational education development	3.97	0.50	High
Steady improvement of professional construction level	3.94	0.51	High
Comprehensive development ability adapting to diversified employment	3.92	0.51	High

5. Factors of Educational and Teaching Practice (Mean=4.12, S.D.=0.47, High Level)

Teachers perform best in "designing scientific and reasonable teaching plans" (4.26, high level), and the lowest score is "timely summarizing and applying teaching achievements to promote teaching improvement" (3.96, high level), indicating that the school's teaching practice lacks a perfect closed-loop improvement mechanism, and the promotion and application of excellent teaching experience are insufficient (Table 7).

Table 7 Mean and Standard Deviation of Factors of Educational and Teaching Practice (n=328)

Evaluation Items	Mean	S.D.	Evaluation Level
Designing scientific and reasonable teaching plans	4.26	0.41	High
Integrating posts, courses, competitions and certificates in teaching	4.21	0.43	High
Using diversified teaching methods to improve teaching effect	4.15	0.45	High
Complete practical teaching system and perfect equipment	4.13	0.45	High
Updating teaching content according to industrial development	4.08	0.47	High
Diversified teaching evaluation methods	4.02	0.48	High
Organizing classroom interaction and improving student participation	3.99	0.49	High
Summarizing and applying teaching achievements for continuous improvement	3.96	0.50	High

Interview Results and Content Analysis

In- depth interviews with 5 core faculty members further revealed the practical problems and root causes of teachers' role function exertion in the school, and put forward targeted suggestions. The key conclusions are as follows:

Teachers' Professional Development: Insufficient regular enterprise practice mechanism and digital teaching ability training; the identification and management mechanism of " dual- qualified" teachers needs to be improved.

Student Teaching Guidance: Obvious individual differences in students' learning foundation require hierarchical and personalized teaching; students lack clear career planning, and the integration of career guidance and daily teaching is insufficient.

Teachers' Role Function Exertion: Insufficient incentive mechanism for teachers to participate in skill competition guidance and quality governance; the role of teachers as a bridge for school-enterprise cooperation needs to be further strengthened.

Higher Education Quality Improvement: The cultivation of students' comprehensive ability and innovative ability is insufficient; the connection between talent training and high- end industrial post requirements is not close enough.

Educational and Teaching Practice Reform: The update speed of practical training equipment lags behind industrial technology development; the evaluation method of practical teaching is single, and the summary and promotion of teaching achievements are not timely.

CONCLUSION AND FUTURE WORK

Research Conclusion

This study constructs a "fourfold embedding" role function framework for higher vocational teachers, and systematically analyzes the current situation of teachers' role and function in improving higher education quality at Guangdong Engineering Polytechnic through mixed research methods. The main conclusions are as follows:

Overall Exertion Level is High: The total mean value of teachers' role function exertion in the school is 4.18 (high level), and the Factors of Teachers' Role and Function reach the highest level (4.35). Teachers perform outstandingly in knowledge imparting, practical teaching guidance and skill competition guidance, laying a solid foundation for the improvement of higher education quality.

Obvious Advantages in Core Dimensions: Teachers have solid professional knowledge and rich industrial practical experience; students have a strong professional learning willingness and pay attention to practical ability cultivation; the educational and teaching practice closely combines the characteristics of higher vocational education, and the integration of posts, courses, competitions and certificates has achieved initial results.

Outstanding Problems to be Solved: There are deficiencies in teachers' professional development support system and insufficient institutional embedding function; students' learning foundation has obvious individual differences; the cultivation of students' comprehensive development ability is insufficient, which is the weakest link in higher education quality; the educational and teaching practice lacks a perfect closed-loop improvement mechanism, and the summary and promotion of teaching achievements are insufficient.

Key Influencing Factors Confirmed: Scientific role positioning, systematic organizational support mechanisms, in-depth industry-education integration and perfect incentive mechanisms are the core factors for giving play to teachers' role functions and improving the quality of higher vocational education.

Optimization Strategies

Aiming at the problems found in the research, targeted optimization strategies are proposed from five levels to improve the exertion effect of teachers' role functions in Guangdong Engineering Polytechnic:

1. School Teacher Level: Improve the Professional Development Support System

Establish a regular enterprise practice mechanism for teachers, arrange teachers to take temporary positions in cooperative enterprises, and build a platform for industrial technology training.

Strengthen the training of teachers' digital teaching ability, and integrate digital literacy into the teacher development credit bank system.

Improve the "dual-qualified" teacher identification and training mechanism, increase the introduction of enterprise part-time teachers, and optimize the assessment and incentive mechanism.

Increase investment in teachers' professional development, and closely link training credits with professional title evaluation and performance appraisal.

2. School Student Level: Implement Targeted Teaching Guidance

Build a student learning portrait system based on big data, carry out hierarchical teaching and personalized tutoring for students with different learning foundations.

Integrate career planning guidance into daily teaching, and strengthen students' post cognition through school-enterprise cooperation such as order classes and enterprise training.

Design more project-based teaching tasks to cultivate students' team cooperation ability and practical innovation ability.

Establish a student learning support system to provide targeted help for students with learning difficulties and improve the overall learning level.

3. Teachers' Role and Function Level: Optimize the Multi-role Exertion Mechanism

Strengthen teachers' role in knowledge imparting and practical guidance, and improve the incentive policy for skill competition guidance and practical training tutoring.

Give play to teachers' role in curriculum development and teaching innovation, and encourage teachers to update teaching content combined with industrial technology iteration.

Activate teachers' institutional embedding function, improve the teacher participation mechanism in quality governance, and give teachers voting rights in major teaching decisions.

Strengthen teachers' role as a bridge for school-enterprise cooperation, and promote teachers to participate in enterprise technical research and development and curriculum co-construction.

4. Higher Education Quality Level: Focus on Cultivating Compound Talents

Optimize the talent training program, increase the proportion of practical teaching, and build a hierarchical practical teaching platform to improve students' professional practical ability.

Strengthen the cultivation of students' comprehensive ability and innovative ability, and add interdisciplinary courses and innovation and entrepreneurship practice links.

Establish a talent demand feedback mechanism with enterprises, and dynamically adjust the teaching content according to the needs of regional pillar industries and high-end posts.

Improve the employment guidance system, carry out precise employment guidance, and improve students' employment quality and career development potential.

5. Educational and Teaching Practice Level: Deepen the Reform of Teaching Practice

Increase investment in practical training equipment, update training hardware in a timely manner, and build a school-enterprise co-constructed practical teaching base.

Promote the integration of digital teaching and practical teaching, and use virtual simulation and other intelligent tools to improve the teaching effect.

Explore diversified practical teaching evaluation methods, combining process-oriented evaluation and result-oriented evaluation to comprehensively assess students' ability.

Establish a teaching practice achievement summary and promotion mechanism, build a communication platform for teachers, and form a closed-loop improvement of teaching practice.

Future Work

This study takes Guangdong Engineering Polytechnic as a case to explore the role and function of higher vocational teachers in improving education quality, and the research results have certain reference significance for similar higher vocational colleges. However, there are still some limitations in

the study: the research object is a single college, and the research results need to be verified in more higher vocational colleges; the research is a cross-sectional study, and the dynamic change of teachers' role function exertion needs to be further explored through longitudinal research.

In the future, follow-up research can be carried out from the following aspects:

Expand the research sample to include higher vocational colleges in different regions and different types, and explore the regional and professional differences of teachers' role function exertion in higher vocational education.

Carry out longitudinal tracking research to analyze the dynamic change law of teachers' role function exertion under the background of continuous deepening of industry-education integration and digital transformation.

Further explore the mediating and moderating effects in the influence mechanism of teachers' role functions on higher education quality, and construct a more perfect theoretical model.

Conduct empirical research on the optimization strategies proposed in this study, and verify the effectiveness and operability of the strategies through intervention experiments.

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THE IMPACT OF DIGITAL CAPABILITY AND AI ACCEPTANCE ON EMPLOYEE CREATIVITY IN DIGITAL WORKPLACES

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ABSTRACT

With the rapid advancement of digital technologies and artificial intelligence (AI), organizations are increasingly transforming traditional work environments into digital workplaces. In this evolving context, employee creativity has become a critical factor in sustaining innovation and competitive advantage. While previous studies have examined digital transformation and innovation separately, limited research has explored how digital capability and AI acceptance jointly influence employee creativity. This study investigates the effects of digital agility, digital workplace support, AI acceptance, and human-machine collaboration on employee creativity in Thailand. A quantitative research design was employed, and data were collected from 400 employees across multiple industries. Multiple regression analysis was conducted to test the proposed hypotheses. The findings indicate that digital agility, digital workplace support, AI acceptance, and human-machine collaboration all have significant positive effects on employee creativity, with digital agility being the strongest predictor. The study contributes to digital transformation literature by integrating technological capability and psychological acceptance into a unified empirical framework. Practical implications and future research directions are discussed.

Keywords: Digital Capability, AI Acceptance, Employee Creativity, Digital Workplace, Innovation

INTRODUCTION

Digital transformation has become one of the most influential trends shaping modern organizations. The adoption of artificial intelligence (AI), big data analytics, cloud computing, and automation technologies has significantly redefined work processes and organizational structures. Companies increasingly rely on digital platforms to enhance productivity, improve decision-making, and maintain competitiveness in rapidly changing markets.

At the same time, employee creativity has emerged as a key driver of organizational innovation and sustainable development. Creativity refers to the production of novel and useful ideas within a specific organizational context. Creative employees contribute to new product development, process improvements, and strategic renewal. In dynamic environments, creativity is not merely desirable but essential.

Although digital technologies provide powerful tools, technology alone does not automatically generate innovation. Employees must possess adequate digital capability to utilize these technologies effectively. Moreover, their psychological acceptance of AI systems significantly influences how creatively they integrate such tools into their tasks.

While previous research has examined digital capability, AI adoption, and innovation separately, limited empirical studies have investigated their combined effects on employee creativity, particularly in developing countries such as Thailand. Therefore, this study aims to bridge this gap by examining how digital agility, digital workplace support, AI acceptance, and human-machine collaboration influence employee creativity.

OBJECTIVES

1. To analyze the effect of digital agility on employee creativity.
2. To examine the impact of digital workplace support on creativity.
3. To investigate the relationship between AI acceptance and creativity.
4. To explore how human-machine collaboration enhances innovative outcomes.

Literature Review

Digital Capability and Dynamic Capability Theory

Digital capability refers to the ability of employees to effectively use digital technologies in performing work tasks. Bharadwaj (2000) argued that information technology capability enhances organizational performance by improving coordination and decision-making processes. From a strategic perspective, Teece, Pisano, and Shuen (1997) introduced dynamic capability theory, which emphasizes the importance of adapting organizational resources to rapidly changing environments.

At the individual level, digital agility represents employees' ability to adapt quickly to new technological systems. Kane et al. (2015) emphasized that successful digital transformation depends more on people's capabilities than on the technologies themselves. Employees with strong digital competence are more likely to experiment with digital tools, recombine knowledge, and develop innovative solutions.

Digital capability also improves cognitive flexibility, information processing capacity, and problem-solving efficiency, all of which are crucial components of creativity. Therefore, digital agility is expected to positively influence employee creativity.

AI Acceptance and Technology Acceptance Theory

AI acceptance is derived from the Technology Acceptance Model (TAM) proposed by Davis (1989), which identifies perceived usefulness and perceived ease of use as key determinants of technology adoption. Venkatesh et al. (2003) extended this model into the Unified Theory of Acceptance and Use of Technology (UTAUT), incorporating social influence and facilitating conditions.

In AI-enabled workplaces, employees' perceptions of AI systems influence whether they utilize such systems innovatively or minimally. When employees believe that AI improves performance and simplifies work processes, they are more inclined to integrate it into creative tasks.

Dwivedi et al. (2021) highlighted that trust and positive attitudes toward AI significantly impact digital transformation success. Without acceptance, technological investments may fail to generate innovation benefits.

Human-Machine Collaboration

Human-machine collaboration refers to cooperative interactions between employees and AI systems. Rather than replacing human workers, AI augments human intelligence. Huang and Rust (2018) explained that AI performs analytical and repetitive tasks efficiently, while humans contribute emotional intelligence, contextual understanding, and creative thinking.

Effective collaboration allows employees to leverage AI-generated insights to enhance decision-making and idea development. However, excessive reliance on AI may reduce autonomy and intrinsic motivation, potentially inhibiting creativity. Therefore, balanced human-AI interaction is crucial for innovation.

Digital Workplace Support

Digital workplace support includes technological infrastructure, management encouragement, and organizational culture that promotes experimentation. Westerman, Bonnet, and McAfee (2014) argued that leadership plays a vital role in guiding digital transformation. Rai, Patnayakuni, and Seth (2006) demonstrated that digitally integrated environments enhance performance and innovation outcomes.

Supportive environments foster knowledge sharing, risk-taking, and creative exploration. Training programs further enhance employees' digital confidence and competence.

Research Hypotheses

- H1: Digital agility positively affects employee creativity.
- H2: Digital workplace support positively affects employee creativity.
- H3: AI acceptance positively affects employee creativity.
- H4: Human-machine collaboration positively affects employee creativity.

METHODOLOGY

This study adopts a quantitative research design.

Sample and Data Collection

A total of 450 questionnaires were distributed to employees working in digitalized organizations across Thailand. After eliminating incomplete and invalid responses, 400 valid questionnaires were retained, resulting in a response rate of 88.9%. Participants represented various industries including finance, manufacturing, services, and technology.

Measurement

All variables were measured using five-point Likert scales ranging from 1 (strongly disagree) to 5 (strongly agree).

- Digital agility: adapted from Kane et al. (2015).
- AI acceptance: based on Davis (1989).
- Human-machine collaboration: adapted from relevant AI collaboration studies.
- Employee creativity: measured using Amabile's (1996) scale.

Data Analysis

SPSS software was used for statistical analysis. Reliability was evaluated using Cronbach's alpha. Construct validity was examined through KMO and Bartlett's tests. Multiple regression analysis was conducted to test the hypotheses.

RESULTS

Cronbach's alpha values ranged from 0.87 to 0.91, indicating high internal consistency. The KMO value was 0.985 ($p < 0.001$), confirming sampling adequacy.

Regression results showed:

Digital agility ($\beta = 0.367$, $p < 0.001$)

Digital workplace support ($\beta = 0.244$, $p < 0.001$)

AI acceptance ($\beta = 0.198$, $p < 0.001$)

Human-machine collaboration ($\beta = 0.168$, $p < 0.001$)

The adjusted R^2 value was 0.876, indicating strong explanatory power.

Digital agility emerged as the strongest predictor of employee creativity, followed by digital workplace support, AI acceptance, and human-machine collaboration.

Discussion

The findings confirm that digital agility significantly enhances creativity, supporting dynamic capability theory. Employees who adapt quickly to technological changes demonstrate greater innovative behavior.

AI acceptance also plays a crucial role. Consistent with TAM theory, employees who perceive AI as useful and easy to use are more likely to engage with it creatively.

Human-machine collaboration enhances creative outcomes by combining machine intelligence with human judgment. The results reinforce the view that AI complements rather than replaces human creativity.

Practical Implications

Organizations should:

1. Invest in digital skill development programs.
2. Foster positive attitudes toward AI systems.
3. Encourage collaborative human-AI workflows.
4. Strengthen digital infrastructure and leadership support.

Limitations and Future Research

This study is limited to Thailand and uses a cross-sectional design. Future research may employ longitudinal methods and examine moderating variables such as organizational culture or leadership style.

CONCLUSION

This study integrates digital capability and AI acceptance into a unified framework explaining employee creativity in digital workplaces. The findings highlight that both technological competence and psychological readiness are essential for fostering innovation. Organizations seeking sustainable competitive advantage must develop employees' digital skills while promoting positive engagement with AI systems.

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STRATEGIES FOR PROMOTING URBAN-RURAL EDUCATIONAL EQUITY IN THE INTELLIGENT TRANSFORMATION OF PRIMARY EDUCATION IN QINZHOU, GUANGXI

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ABSTRACT

This study aims to explore the current situation of intelligent transformation of primary education in Qinzhou, Guangxi and the urban-rural education equity gap, and propose targeted promotion strategies under the background of education digitalization. Taking 140 urban and rural primary school teachers in Qinzhou as the research population, 103 teachers were selected as questionnaire samples by the Krejcie & Morgan method, and 5 education administrators were selected as interview samples by purposive sampling. A five-dimensional research framework including teachers, students, educational resources, educational quality, and policy management was constructed. The results show that the overall level of urban-rural educational equity promotion in the intelligent transformation of Qinzhou's primary education is moderate (Mean= 3.45, S. D. = 0.69), with teachers and policy management factors at a high level, and educational resources as the weakest link. Targeted optimization strategies are proposed to solve the problems of unbalanced resource allocation, insufficient digital literacy of rural teachers, and low localization of digital resources, providing practical reference for the high-quality and balanced development of primary education in western coastal small and medium-sized cities in China.

Keywords: Intelligent Transformation; Primary Education; Urban-Rural Educational Equity; Qinzhou Guangxi

INTRODUCTION

In the era of deep integration of intelligent technologies and education, promoting urban-rural educational equity has become the core requirement for the high-quality development of basic education in China. Primary education, as the cornerstone of the education system, its balanced urban-rural development is the key to realizing educational equity. Qinzhou, a core coastal city in the Guangxi Beibu Gulf Economic Zone, has the typical characteristics of coastal resource advantages and unbalanced urban-rural educational development. Under the drive of artificial intelligence, big data and smart education platforms, the traditional resource allocation and teaching implementation mode of Qinzhou's urban and rural primary education can no longer meet the demand of educational equity, and it is urgent to leverage intelligent technology to empower the reconstruction of rural primary education resource supply system.

Intelligent technology has opened up new paths for the equitable development of urban and rural primary education, and has created important opportunities for Qinzhou's educational

transformation. Through the national smart education platform and remote live broadcast teaching mode, rural primary schools can access high-quality urban teaching resources, and big data analysis can realize personalized learning diagnosis, making up for the shortage of differentiated teaching in rural areas. However, constrained by regional economic disparities, teacher competency levels and technological application capabilities, Qinzhou's primary education intelligent transformation still faces problems such as unbalanced urban-rural smart hardware allocation, low digital literacy of rural teachers, and insufficient localization of digital resources, and the practical effect of technological empowerment in promoting educational equity is not fully exerted.

Based on educational equity theory, digital inclusion theory and collaborative development theory, this study constructs a five-dimensional research framework to analyze the current situation of urban-rural educational equity in the intelligent transformation of Qinzhou's primary education through mixed research methods of questionnaire survey and in-depth interview, explores the core influencing factors and practical challenges, and proposes targeted promotion strategies. The research not only provides precise guidance for Qinzhou's primary education intelligent transformation and urban-rural educational equity promotion, but also offers a replicable practical model for similar western coastal small and medium-sized cities, enriching the theoretical and practical research on the digital development of basic education in China.

OBJECTIVE

1. To study the level of the strategies for Promoting Urban-Rural Educational Equity in the Intelligent Transformation of Primary Education in Qinzhou, Guangxi
2. To propose the the strategies for Promoting Urban-Rural Educational Equity in the Intelligent Transformation of Primary Education in Qinzhou, Guangxi

METHODOLOGY

This study adopts a mixed research method combining quantitative and qualitative research, with the urban and rural primary education in Qinzhou, Guangxi as the research object, to systematically analyze the strategies for promoting urban-rural educational equity in the intelligent transformation. The research process includes population and sample selection, research tool design, data collection and data analysis.

Population and Sample

Research Population: 140 teachers from urban and rural primary schools in all counties and districts of Qinzhou City, Guangxi.

Questionnaire Sample: Using the Krejcie & Morgan sample size determination method (1970), 103 teachers were selected as the questionnaire sample, ensuring the representativeness of the research sample.

Interview Sample: 5 core staff from the Basic Education Management Department of Qinzhou Municipal Education Bureau were selected by purposive sampling, all with more than 5 years of primary education management experience and in-depth participation in Qinzhou's smart education policy formulation and implementation, including education bureau administrators, school principals and key teachers of educational technology.

Research Tools

Research Questionnaire

Designed by the researcher, it is divided into two parts and uses a 5-point Likert scale for evaluation (1=lowest level, 5=highest level):

Personal Information Part: Collects the respondent's gender, highest educational background, teaching subjects and work experience, with a total of 4 items.

Core Research Content Part: Based on the five research dimensions of teacher factors, student factors, educational resource factors, educational quality factors and policy management factors, it designs 8 items for each dimension, with a total of 40 items, covering the core content of urban-rural educational equity promotion in the intelligent transformation of primary education.

Expert Interview Form

Based on the five research dimensions of the questionnaire, semi-structured interview questions are designed to explore the practical problems, root causes and optimization suggestions of urban-rural educational equity promotion in the intelligent transformation of Qinzhou's primary education, with a total of 40 interview items corresponding to the questionnaire.

Validity and Reliability Test

Content Validity: The questionnaire was reviewed by 3 experts in the field of basic education and educational technology, and the Item Objective Congruence (IOC) value was 0.67-1.00, indicating good content validity.

Reliability Test: A pilot study was conducted with 30 non-sample teachers, and the Cronbach's Alpha coefficient of the questionnaire was 0.9316, showing high internal consistency and reliability.

Data Collection

Questionnaire Survey: The questionnaire was distributed to the sample teachers through online and on-site methods, with 103 valid questionnaires recovered, a recovery rate of 100%.

In-Depth Interview: Face-to-face in-depth interviews were conducted with 5 selected education administrators, each interview lasting 30-40 minutes. The interviews were recorded with the permission of the interviewees, and the interview content was sorted out, coded and used for content analysis.

Data Analysis

Quantitative Analysis: Using statistical software, the basic information of the respondents was analyzed by frequency and percentage; the five research dimensions were analyzed by mean ($\bar{x}$) and standard deviation (S.D.), and the implementation level was judged according to the mean value: 1.00-1.50=lowest, 1.51-2.50=low, 2.51-3.50=moderate, 3.51-4.50=high, 4.51-5.00=highest.

Qualitative Analysis: The interview content was coded and categorized according to the five research dimensions, and the practical problems, core influencing factors and optimization suggestions of urban-rural educational equity promotion were summarized through content analysis, so as to supplement and explain the quantitative research results.

RESULTS

Basic Information of Respondents

The 103 valid respondents show the following characteristics in basic information (Table 1), reflecting the representativeness of the sample in the overall research population:

Gender Distribution: 43 males (41.75%) and 60 females (58.25%), with more female teachers, in line with the gender characteristics of primary school teachers in China.

Educational Background: Mainly master's degree, accounting for 67.96% (70 people); bachelor's degree accounts for 25.24% (26 people); doctoral degree accounts for 6.80% (7 people), with a high overall educational level.

Teaching Subjects: 65.05% (67 people) teach Chinese, Math and English, the core subjects of primary education; 34.95% (36 people) teach Science, Sports, Arts and other subjects, covering all primary school teaching subjects.

Work Experience: The structure is reasonable, with 28.16% (29 people) having 11-15 years of experience, 25.24% (26 people) having 6-10 years of experience, and the proportion of teachers with different work experience is relatively balanced.

Table 1 General Data Analysis of Respondents (n=103)

General Information	Frequency	Percentage (%)
Male	43	41.75
Female	60	58.25
Bachelor's Degree	26	25.24
Master's Degree	70	67.96
Doctoral Degree	7	6.80
Chinese / Math / English (Teaching Subjects)	67	65.05
Science / Sports / Arts, etc. (Teaching Subjects)	36	34.95
Under 6 years (Work Experience)	12	11.65
6-10 years (Work Experience)	26	25.24
11-15 years (Work Experience)	29	28.16
16-20 years (Work Experience)	21	20.39
More than 20 years (Work Experience)	15	14.56

Mean and Standard Deviation Analysis of Research Dimensions

The overall mean value of the strategies for promoting urban-rural educational equity in the intelligent transformation of Qinzhou's primary education is 3.45 (S.D.=0.69), at a moderate level (Table 2). The mean values of each dimension are ranked from high to low as follows: Factors of School Teachers (3.62, high) > Factors of Policy and Management (3.55, high) > Factors of School Students (3.47,

moderate) > Factors of Educational Quality (3.38, moderate) > Factors of Educational Resource (3.25, moderate). It can be seen that teachers and policy management are the advantageous dimensions, while educational resources are the weakest link restricting the promotion of urban-rural educational equity.

Table 2 Mean and Standard Deviation Analysis of All Research Dimensions (n=103)

Research Dimensions	$\bar{x}$	S.D.	Evaluation Level
Factors of School Teachers	3.62	0.65	High
Factors of School Students	3.47	0.71	Moderate
Factors of Educational Resource	3.25	0.78	Moderate
Factors of Educational Quality	3.38	0.69	Moderate
Factors of Policy and Management	3.55	0.62	High
Total	3.45	0.69	Moderate

Factors of School Teachers ($\bar{x}$ =3.62, S.D.=0.65, High Level)

Teachers perform the best in Teachers' Awareness and Acceptance of Smart Education (3.82, high), followed by Teachers' Competence in Intelligent Instructional Design and Classroom Implementation (3.65, high). The lowest score is Targeted and Effective Informatization Training for Rural Teachers (3.12, moderate), indicating that rural teachers have a high recognition of smart education, but the targeted training system is imperfect, which is the core bottleneck of teacher team construction (Table 3).

Table 3 Mean and Standard Deviation of Factors of School Teachers (n=103)

Evaluation Items	$\bar{x}$	S.D.	Evaluation Level
Teachers' Awareness and Acceptance of Smart Education	3.82	0.59	High
Teachers' Competence in Intelligent Instructional Design and Classroom Implementation	3.65	0.63	High
Teachers' Digital Literacy and Application Competence of Intelligent Technologies	3.58	0.67	High

Evaluation Items	$\bar{x}$	S.D.	Evaluation Level
Teachers' enthusiasm for participating in the development of intelligent educational resources	3.52	0.68	High
Teachers' Cross-Regional Teaching Research and Urban-Rural Exchange and Cooperation Capabilities	3.47	0.72	Moderate
Teachers' ability to utilize big data for learning diagnostics	3.36	0.75	Moderate
Targeted and Effective Informatization Training for Rural Teachers	3.12	0.85	Moderate

Factors of School Students ($\bar{x}$ =3.47, S.D.=0.71, Moderate Level)

Students have the strongest Acceptance and Adaptability to Intelligent Teaching Models (3.82, high), and the lowest score is The Degree of Disparity in Smart Technology Application Between Urban and Rural Students (3.12, moderate), reflecting that rural students can accept intelligent teaching models well, but the digital divide between urban and rural students is obvious, which restricts the balanced development of students' comprehensive quality (Table 4).

Table 4 Mean and Standard Deviation of Factors of School Students (n=103)

Evaluation Items	$\bar{x}$	S.D.	Evaluation Level
Students' Acceptance and Adaptability to Intelligent Teaching Models	3.82	0.59	High
Students' ability to utilize digital resources for self-directed learning	3.65	0.63	High
Students' Basic Application Skills in Intelligent Technology	3.58	0.67	High
Development Level of Students' Comprehensive Literacy and Innovative Thinking	3.52	0.68	High
Students' Autonomous Learning and Problem-Solving Abilities	3.47	0.72	Moderate
Students' ability to utilize smart tools for inquiry-based learning	3.36	0.75	Moderate
The Degree of Disparity in Smart Technology Application Between Urban and Rural Students	3.12	0.85	Moderate

Factors of Educational Resource ($\bar{x}$ =3.25, S.D.=0.78, Moderate Level)

This dimension is the lowest among all research dimensions. Teachers perform best in Teachers' ease of accessing smart teaching resources (3.57, high), and the lowest score is The Local Adaptability of Digital Resources for Rural Students (2.86, moderate). In addition, Urban-Rural Equity in Smart Teaching Hardware Allocation (2.98, moderate) also has a low score, indicating that the main problems of educational resources are unbalanced urban-rural hardware allocation and serious lack of localization of digital resources (Table 5).

Table 5 Mean and Standard Deviation of Factors of Educational Resource (n=103)

Evaluation Items	$\bar{x}$	S.D.	Evaluation Level
Teachers' ease of accessing smart teaching resources	3.57	0.68	High
Improvement of the Mechanism for Updating and Maintaining Educational Resources	3.48	0.72	Moderate
The Abundance and Accessibility of Digital Course Resources	3.42	0.75	Moderate
Integration and Utilization of Off-campus Intelligent Educational Resources	3.31	0.79	Moderate
The completeness and stability of campus network infrastructure	3.15	0.84	Moderate
Provision of Experimental and Practical Intelligent Educational Resources	3.02	0.87	Moderate
Urban-Rural Equity in Smart Teaching Hardware Allocation	2.98	0.89	Moderate
The Local Adaptability of Digital Resources for Rural Students	2.86	0.92	Moderate

Factors of Educational Quality ($\bar{y}$ =3.38, S.D.=0.69, Moderate Level)

Teachers perform best in The Effect of Intelligent Teaching Model on Enhancing Classroom Instruction Efficiency (3.56, high), and the lowest score is The Balanced Development Level of Urban and Rural Classroom Teaching Quality (3.18, moderate). It shows that intelligent technology can effectively improve the efficiency of rural classroom teaching, but the gap in teaching quality between urban and rural primary schools is still obvious, and the implementation effect of intelligent teaching models such as dual-teacher classrooms needs to be improved (Table 6).

Table 6 Mean and Standard Deviation of Factors of Educational Quality (n=103)

Evaluation Items	$\bar{x}$	S.D.	Evaluation Level
The Effect of Intelligent Teaching Model on Enhancing Classroom Instruction Efficiency	3.56	0.67	High
The School's Monitoring and Evaluation Capabilities for Intelligent Teaching Quality	3.52	0.68	High
The Supporting Effect of Intelligent Technology on Individualized Teaching	3.48	0.69	Moderate
The Impact of Intelligent Technology on Academic Performance Enhancement	3.45	0.71	Moderate
Effectiveness of Cultivating Students' Core Competencies (Autonomy, Innovation, and Collaboration)	3.42	0.73	Moderate
Implementation Effect of Teaching with Dual-Teacher Classroom and Other Intelligent Models	3.36	0.75	Moderate
The Degree of Disparity in Comprehensive Development Outcomes Between Urban and Rural Students	3.21	0.80	Moderate
The Balanced Development Level of Urban and Rural Classroom Teaching Quality	3.18	0.82	Moderate

Factors of Policy and Management ($\bar{x}$ =3.55, S.D.=0.62, High Level)

This dimension is the second highest after teacher factors. The best performance is Supportive Measures for Local Smart Education Development Policies (3.86, high), followed by Funding and Guarantee Mechanism for the Development of Smart Education (3.72, high). The lowest score is Enhancing the Mechanism for Collaborative Advancement of Smart Education by Home-School-Community (3.31, moderate), indicating that Qinzhou has a good policy and funding guarantee for smart education, but the home-school-community collaborative mechanism is imperfect, and the institutionalization of urban-rural coordinated development needs to be strengthened (Table 7).

Evaluation Items	$\bar{X}$	S.D.	Evaluation Level
Supportive Measures for Local Smart Education Development Policies	3.86	0.57	High

Evaluation Items	$\bar{X}$	S.D.	Evaluation Level
Funding and Guarantee Mechanism for the Development of Smart Education	3.72	0.61	High
Guidance and Service Capabilities of Educational Management Departments in Smart Education	3.65	0.63	High
Dynamic Monitoring and Evaluation Mechanism for the Implementation Effect of Intelligent Education	3.59	0.66	High
The Level of Intelligence in Coordinated Allocation of Urban and Rural Educational Resources	3.45	0.72	Moderate
Assessment and Incentive Mechanism for Rural Smart Education Development	3.42	0.73	Moderate
The Normalized Mechanism for Coordinated Development of Urban and Rural Primary Education	3.38	0.74	Moderate
Enhancing the Mechanism for Collaborative Advancement of Smart Education by Home-School-Community	3.31	0.79	Moderate

Interview Results and Content Analysis

In-depth interviews with 5 education administrators further revealed the practical problems and root causes of urban-rural educational equity promotion in the intelligent transformation of Qinzhou's primary education, and the key conclusions are summarized as follows:

Teacher Team Construction: The digital literacy of rural teachers is uneven, the existing training is a one-size-fits-all model without stratification and classification, and the urban-rural teacher collaboration and mentoring mechanism is not perfect.

Student Development: The digital divide between urban and rural students is prominent, rural students lack digital literacy education and independent learning ability training, and the personalized teaching for rural students is insufficient.

Educational Resource Allocation: The smart hardware allocation between urban and rural areas is unbalanced, the network infrastructure of remote rural schools is weak, the digital resources are mainly oriented to urban students, and the localization adaptation is seriously lacking.

Educational Quality Improvement: The intelligent technology is not deeply integrated with rural teaching practice, the dual-teacher classroom has the problem of formalization, the rural tutoring teachers' role is weakened, and the urban-rural teaching quality gap is difficult to narrow fundamentally.

Policy and Management Optimization: The urban-rural coordinated development mechanism lacks institutionalization, the intelligent education management platform is not perfect, the technical

maintenance system for rural smart education is missing, and the home-school-community collaboration is insufficient.

CONCLUSION AND FUTURE WORK

Conclusion

This study systematically explores the urban-rural educational equity in the intelligent transformation of primary education in Qinzhou, Guangxi, based on a five-dimensional framework (teachers, students, educational resources, educational quality, policy and management). The results indicate that the overall promotion level is moderate (Mean= 3.45, S.D.=0.69), with notable strengths in teacher acceptance of smart education and policy support, while educational resources emerge as the key constraint. Core challenges include unbalanced urban-rural smart hardware allocation, insufficient localization of digital resources, inadequate targeted training for rural teachers, and formalization of intelligent teaching models. The promotion of equity relies on the synergistic effect of multi-dimensional factors, where rural teachers' digital literacy, equitable resource allocation, deep technology-teaching integration, and sound institutional mechanisms play pivotal roles.

Future Work

Despite its findings, this study has limitations: the research scope is limited to Qinzhou, and the cross-sectional design cannot capture dynamic changes in equity promotion. Future research can be expanded in three directions: first, extend the sample to include primary schools in other western coastal cities to verify the generalizability of the conclusions; second, conduct longitudinal tracking to analyze the dynamic evolution of intelligent transformation and equity promotion over time; third, carry out empirical intervention studies on the proposed optimization strategies to test their practical effectiveness and refine operable implementation paths. Additionally, further explore the mediating and moderating effects between key factors to construct a more comprehensive theoretical model for urban-rural educational equity in the intelligent era.

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TRANSLATION EXPERIMENT OF TRADITIONAL INK-WASH TECHNIQUES IN FANTASY ILLUSTRATIONS: CONNECTING THAI MYTHOLOGY WITH CONTEMPORARY VISUAL NARRATIVES

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ABSTRACT

Against the background of global visual exchange, this study focuses on the cross-cultural adaptability of traditional artistic languages. Taking the Thai mythological figure Hanuman as the subject, it explores the feasibility of translating mythological imagery and the potential of Chinese ink-wash techniques in reconstructing hybrid fantasy illustrations. Using qualitative methods including literature review and visual analysis, the study finds that shared mythological archetypes support cross-cultural cognition, and ink-wash shows strong expressive adaptability beyond realism. It provides a methodological framework for integrating traditional art into global visual storytelling.

Keywords: traditional Ink Painting, Fantasy Illustration, Thai Mythology, Cross-cultural Visual Translation, Visual Narrative

INTRODUCTION

Against the backdrop of deepening global cultural exchange, visual arts are gradually breaking through the limitations of geography and traditional media, presenting a trend of cross-cultural integration [3]. Artists are no longer limited to a single cultural system, but explore new ways of expression by absorbing diverse visual resources. In this process, how to establish an understandable visual language while respecting cultural differences has become one of the important issues in art research.

Mythology provides rich narrative resources for visual art [6]. Although different civilizations have their own independent mythological systems, they exhibit astonishing similarities in hero prototypes, spiritual symbols, and expression of values. American mythologist Joseph Campbell's "THE HERO WITH A THOUSAND FACES" mentions that mythological characters often carry universal spirits such as courage, sacrifice, and protection, which gives them the potential foundation for cross-cultural dissemination.

The Thai mythological figure Hanuman is an important representative of this phenomenon. As a heroic figure who combines the roles of a warrior and a guardian, Hanuman not only has a high degree of recognition in Southeast Asian visual traditions [3], but also symbolically echoes the heroic figure Sun Wukong in Chinese mythology. This structural commonality provides a theoretical premise for cross-cultural visual translation.

At the same time, Chinese ink painting emphasizes "using form to express spirit" and values spiritual expression and formal summarization. This highly condensed visual language gives it the potential to transform when faced with new themes. Therefore, introducing ink painting techniques into the study of Thai mythological characters not only helps to expand the expressive boundaries of traditional media, but may also provide new paths for contemporary fantasy visual storytelling.

Based on the above background, this study takes Hanuman as the research object, explores the possibility of visual translation of mythological characters in cross-cultural contexts, and analyzes the expressive potential of Chinese ink language in reconstructing cross-cultural images.

OBJECTIVE

This research focuses on two aspects: cross-cultural visual creation and the transformation of traditional media. The specific goals are as follows:

1. How to highlight Hanuman's image features in ink-wash paintings? Which contents, graphics and techniques should be selected for drawing?
2. Explore the expressive potential of Chinese ink-wash language in reconstructing the images of characters from different cultures.

METHODOLOGY

His study focuses on the cross-cultural integration of Chinese ink art and Thai mythology, using qualitative research methods to systematically examine the translation paths and expressive potential of traditional media in contemporary visual contexts. The study analyzes from multiple dimensions such as formal language, color structure, and decorative patterns, and focuses on exploring how to use ink art to highlight the unique artistic features and cultural connotations of Thai mythology.

To ensure the systematicity and operability of the research process, this study constructed a research path consisting of five stages:

Phase 1: Literature research and theoretical construction.

Systematically review the origin and development of Hanuman in traditional Thai culture, with a focus on analyzing its role evolution in religious narratives, folklore, and theatrical traditions. At the same time, summarizing the stylistic features and symbolic meanings gradually formed in visual arts provides a theoretical basis for cross-cultural visual translation.

Phase 2: Visual sample collection and organization.

Based on theoretical research, extensively collect visual materials related to Hanuman, including traditional masks, dance and Kong opera performance images, murals, sculptures and other art forms. These samples can visually present the logical and aesthetic features of characters in different media, establishing an observable visual database for subsequent analysis.

Phase 3: Image Analysis and Core Symbol Extraction.

Using image analysis methods, systematic observation and comparison are conducted from aspects such as character posture, dynamic structure, facial features, clothing decoration, and symbolic elements to identify stable core visual symbols. This process aims to clarify which key elements should

be prioritized for preservation in cross-cultural translation to maintain the cultural identity of the characters.

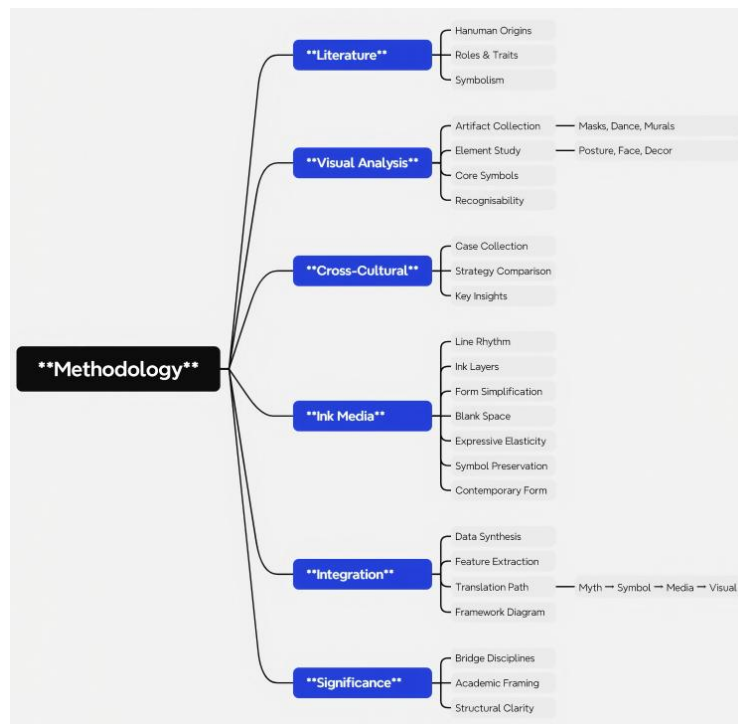
Phase 4: Comparative Study of Cross Cultural Cases.

Select representative cross-cultural art integration cases through online resources and professional databases, and focus on analyzing the transformation strategies adopted by traditional media when entering the contemporary visual system. By comparing the differences in element integration methods, visual expression effects, and cultural transmission paths among these cases, we summarize practical fusion experiences and provide methodological insights for this study.

Stage 5: Analysis of Ink Media Language

Based on the above analysis, further examine the expressive advantages of Chinese ink painting in cross-cultural character construction, with a focus on the strengthening effect of line rhythm, ink color hierarchy, spatial organization, and formal summarization on spiritual expression.

The main conceptual framework of this study adopts the following mind map:



1. The origin, evolution, and visual significance of Hanuman in traditional Thai culture

Hanuman originated from the Ramayana epic, which was formed in the ancient religious and mythological traditions of India, shaping a monkey god image that combines divinity and heroic qualities. With the spread of Indian culture to Thailand, this character was incorporated into the Thai national epic Ramajian and underwent deep localization and reconstruction. The Thai version, while retaining its core qualities of loyalty, bravery, and wisdom, weakens the ascetic spirit in Indian tradition, making the characters more secular and emotional, thus better fitting the aesthetic psychology and cultural needs of Thai society.

At the level of religious narrative, Hanuman gradually transcended the scope of literary roles and transformed into a symbolic existence with spiritual refuge significance. Its image is often associated with concepts such as guarding, defeating evil, and maintaining order, reflecting a cultural structure that integrates diverse religious traditions. In this process, Hanuman transformed from the epic Monkey General to a cultural symbol with protective functions, reflecting the typical path of mythological characters transforming into social and spiritual symbols[4].

In the context of folk culture, Hanuman has further become a carrier of social values. The story surrounding it not only emphasizes loyalty and courage, but also highlights wit and action, making it an important medium for conveying moral concepts and group identity. This process of extending from mythological narrative to social ethics enables Hanuman to possess both supernatural attributes and be understood and accepted by the public in a more realistic way[7].

The theatrical tradition reinforces the dynamic characteristics and stage performance of this character. In Thai classical costume dramas, Hanuman is usually portrayed as a character with agile movements, strong power, and dramatic tension, whose image combines heroic temperament and entertainment. (As shown in Figure 1、2) This performative shift not only enhances the visual appeal of characters, but also marks an important transformation of mythological narratives from religious contexts to public cultural spaces.

In the development of visual arts, Hanuman gradually formed a stable image paradigm. Artworks are often characterized by white monkey bodies, exaggerated facial structures, strong body movements, and ornate decorations, which enable viewers to quickly identify the identity of the characters through visual encoding. At the same time, the posture of leaping or fighting reinforces the symbolic meaning of its guardians and victors, while exquisite clothing and ritualistic styling further enhance its sacred attributes [7].

Figure 1: Hanuman Murals

source: Google entry



Figure 2: Hanuman Sak Yant

Source: Pinterest App



2. Visual sample collection and image analysis

Based on theoretical research, this study systematically collected various visual expressions of Hanuman, including artistic samples such as traditional masks, dance performance images, murals and

sculptures. These materials can visually present the modeling logic and aesthetic features of characters in different media.

Through image analysis methods, focus on observing the following visual elements:

Attitude and dynamic structure、facial features、Decorative elements and clothing symbols (As shown in Figure 3、4

Figure 3, 4: Posture and Dynamic Structure

source: Xiaohongshu app



After comparing different samples, it was concluded that the following four core visual symbols with stability should be prioritized for retention in cross-cultural translation to identify Hanuman's cultural identity.

Primary Morphological Markers

The most essential identification mark of Hanuman is the combination of "monkey" and "divinity", therefore it should be retained: monkey face structure (prominent mouth and nose), long tail, flexible and strong body proportion

Color Identity

The white body is one of the most representative visual symbols, symbolizing the qualities of Hanuman purity, divine power, and loyalty

Status Indicators

The research results will retain the following decorative elements: crowns, high decorative clothing, and warrior accessories (such as armor and arm ornaments), which convey two key messages: divine level and hero identity.

Symbolic Core

Attention should be paid to expressing Hanuman's spiritual prototype through external visual elements, such as loyalty (absolute support for justice or leadership), courage, guardian temperament, wisdom, and agility, which are deeper levels of recognition.

4. Cross-cultural case collection and comparison

To further understand the transformation methods of traditional art in cross-cultural contexts, this study collected representative cases of cross-cultural integration through online resources and professional databases, (As shown in Figure 5、6) with a focus on the artistic practice of introducing Eastern traditional media into the contemporary visual system. Through comparative analysis, this study summarizes valuable strategies and experiences in cross-cultural integration, providing methodological insights for subsequent media analysis.

Figure 5: Mo Xiaosong.2022.

search hes for the Muse.

source: Xiaohongshu app



Figure 6: Zhang Long. 2023. Cupid

source: Xiaohongshu app



4. Media analysis of ink and wash language

After clarifying the visual characteristics of characters and cross-cultural strategies, the study further focuses on the formal language of Chinese ink painting, examining its expressive ability in shaping cross-cultural character images[6].

The analysis focuses on:

The spatial relationship formed by the ink color hierarchy. (As shown in Figure 7)

The expressiveness of lines and changes in rhythm. (As shown in Figure 8)

The strengthening effect of morphological summarization on spiritual expression.

The visual tension brought by blank space.

Figure 7: Ink gradation

source: baidu app

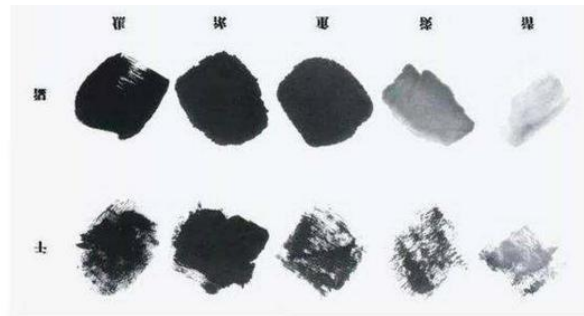


Figure 8: Jiang Zhaohe. Portrait of an old man

source: baidu app



The focus of this study is not on specific creative outcomes, but on the expressive flexibility demonstrated by ink as a traditional medium, that is, whether it can construct a visual form with contemporary consciousness while maintaining the symbolic meaning of characters.

RESULTS

This study presents the research findings in a structured manner based on a five stage methodology to clearly illustrate how the analysis process supports the research conclusions. Unlike purely descriptive explanations, the results of this study are based on observable visual evidence and comparative analysis.

1. Stable recognition of visual prototypes

Through literature research and cross validation of visual materials, this study confirms that Hanuman has a highly stable prototype structure, enabling it to be quickly recognized in cross-cultural contexts. The features that repeatedly appear in murals, sculptures, and theatrical images include:

White monkey body, exaggerated facial structure, combat oriented dynamic posture, highly decorative clothing.

These features do not exist in isolation, but together form a 'prototype recognition system' that enables viewers to establish consistent cognition across different media.

Research has found that the stability of mythological prototypes can effectively reduce cognitive barriers for viewers from different cultural backgrounds, thereby providing a structural foundation for cross-cultural visual translation.

2. Core Visual Symbol Extraction in Cross Cultural Translation

Based on systematic image analysis, this study extracts four core symbols that should be prioritized for preservation in cross-cultural reconstruction:

Basic form symbol

The key identification factor is the anatomical structure that combines the monkey and the god. The body and torso can be designed to lean towards the "divine", but the facial features should not change their basic biological contours.

Color identity coding

A white body is an efficient visual encoding often associated with purity, loyalty, and supernatural power.

Identity indication system

Crowns, armor, and highly decorative clothing can convey divine status and hero identity.

Symbolic personality structure

Loyalty, courage, guardianship, and wisdom form the psychological framework that supports visual interpretation.

Research has found that cross-cultural recognizability primarily relies on the continuation of structural symbols rather than superficial imitation of traditional styles.

3. Conversion strategies derived from cross-cultural case comparisons

Through comparative analysis of contemporary cross-cultural art works, the following transformation strategies have been summarized:

Selective Retention, Retain key elements with cultural significance while simplifying secondary decorations.

Media Recontextualization, Integrating traditional techniques into modern composition systems.

Research has found that successful cross-cultural transformation is not about replicating tradition, but about rebuilding its symbolic logic in a new visual system.

4. The expressive advantages of ink and wash media in character reconstruction

Media analysis shows that Chinese ink painting has the following key advantages in cross-cultural character construction:

The rhythm of the lines and the writing style of the strokes can generate dynamic tension, reducing the dependence on details while enhancing the hero's momentum.

Ink color hierarchy establishes spatial depth through variations in intensity.

The openness of space and conscious blank space enhance explanatory flexibility, making it easier for viewers from different cultural backgrounds to participate in meaning construction.

Formal summarization and structural refinement guide viewers to focus on spiritual similarity rather than superficial realism.

Research has found that ink painting techniques have the potential to become a “translational medium” that connects different visual systems——

5. Construction of a cross-cultural visual translation framework

Based on comprehensive theoretical research, visual analysis, and media research, this study proposes the following structured path:

Mythical prototype recognition □ Core visual symbol extraction □ Media language analysis □ Cross cultural visual construction

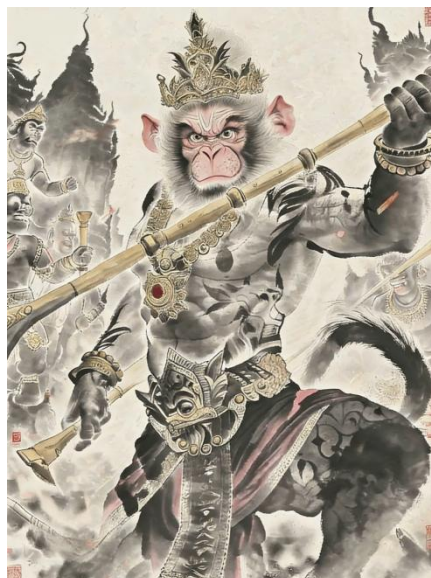
This framework transforms cross-cultural character design from an intuitive artistic practice into a research process that can be systematically discussed.

6. Practice-Based Validation

Based on the extracted visual symbols and ink painting strategies, an experimental illustration was created using an AI model at the end of this conclusion, which verified the operability of the translation framework from a visual perspective.

Figure 9: Hanuman paintings

source: Dreamina AI app



CONCLUSION AND FUTURE WORK

This study confirms that mythological characters have a structural foundation for cross-cultural communication, and their symbolic meanings can gain new explanatory space in different visual systems. At the same time, Chinese ink painting has shown positive potential in reconstructing cross-cultural images, proving that traditional media can still play an important role in contemporary contexts.

Further research indicates that cross-cultural artistic practice is not only a fusion of visual styles, but also a process of constructing cultural understanding mechanisms. By re-examining the relationship between traditional language and contemporary themes, art research can provide new possibilities for dialogue between different cultures.

Future research can be compared in a wider range of mythological systems and media forms, such as combining Nordic mythology with digital technology or dynamic imagery, to further explore the transformation paths of traditional art in contemporary visual environments.

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EDUCATIONAL MANAGEMENT STRATEGIES FOR THE CULTIVATION OF VOCATIONAL TEACHERS' COMPETENCE IN SHANDONG COLLEGE OF TRADITIONAL CHINESE MEDICINE

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ABSTRACT

Against the background of the deepening reform of vocational education and the vigorous development of traditional Chinese medicine (TCM) industry, the cultivation of vocational teachers' competence in TCM colleges has become the core link to improve the quality of talent training and promote the high-quality development of vocational education. Taking Shandong College of Traditional Chinese Medicine as the research object, this paper explores the educational management strategies for cultivating vocational teachers' competence by analyzing the current situation and demand characteristics of TCM vocational teachers' competence cultivation. The research shows that the college has formed a systematic cultivation system through the construction of moral education first, deepening the reform of "three educations", strengthening the integration of production and education, and improving the evaluation and incentive mechanism. These strategies have effectively improved the professional quality, practical teaching ability and innovative development ability of vocational teachers, and provided a practical reference for the competence cultivation of vocational teachers in TCM colleges across the country.

Keywords: Shandong College of Traditional Chinese Medicine; Vocational Teachers; Competence Cultivation; Educational Management Strategy

INTRODUCTION

Vocational education holds a crucial position within the national education system and plays a vital role in human resource development. Vocational teachers, without a doubt, serve as the backbone force responsible for nurturing high - quality technical and skilled talents. When it comes to Shandong College of Traditional Chinese Medicine (TCM), which is a key vocational college specializing in TCM within Shandong Province, the competence level of its teaching staff has a direct and profound impact on multiple aspects. These include the cultivation of TCM technical and skilled talents, the inheritance and innovation of the profound TCM culture, as well as the service capacity that can be provided for the continuous development of the TCM industry.

In recent years, with the gradual implementation of important national policies such as the "Opinions on Comprehensively Deepening the Reform of the Construction of the Teacher Team in the New Era" and the "Implementation Plan for Deepening the Reform of the Construction of the 'Double - qualified' Teacher Team in Vocational Education in the New Era", increasingly higher requirements have been set for the competence of vocational teachers in TCM colleges. This means that these teachers are not only expected to possess solid professional theoretical knowledge and excellent teaching abilities,

but they also need to master proficient clinical practical skills. Moreover, they must have the ability to integrate industry development trends and technological innovation achievements into their daily teaching practices effectively.

Nevertheless, during the actual process of teacher cultivation, TCM vocational colleges still encounter a series of challenges. For example, there is an imperfect integration of production and education in the aspect of teacher training. The connection between teaching ability and professional practice ability is insufficient, and there is an urgent need to optimize the teacher evaluation and incentive mechanism. In response to these challenges, Shandong College of Traditional Chinese Medicine, considering the unique characteristics of TCM vocational education and the development needs of teacher competence, has carried out a series of explorations and practices in the field of educational management. Through these efforts, the college has formed a set of cultivation strategies that are highly targeted and proven to be effective. This paper aims to sort out and analyze these carefully developed strategies in detail, with the hope of providing valuable experience and useful references for the competence cultivation of vocational teachers in other TCM colleges.

OBJECTIVE

1. To analyze the core competence elements and development demands of vocational teachers in Shandong College of Traditional Chinese Medicine, and clarify the direction of educational management for teacher competence cultivation.

2. To explore the systematic educational management strategies for cultivating the competence of TCM vocational teachers, and provide a practical path for improving the overall quality of the teacher team.

METHODOLOGY

This research adopts the method of combining practical investigation and systematic analysis, taking the teacher team construction practice of Shandong College of Traditional Chinese Medicine as the research basis, and sorting out the educational management strategies for teacher competence cultivation from multiple dimensions such as moral education construction, teaching reform, practical training, and system guarantee.

Sub-Section 1: Practical Investigation Method

Through the investigation of the current situation of the college's teacher team, including the structure of academic qualifications, professional titles, "double-qualified" proportion, training experience, and teaching practice effect, the advantages and existing problems of the current teacher competence cultivation are clarified. At the same time, the demand for teacher competence is understood through interviews with front-line teachers, industry enterprise experts and student representatives, and the core points of educational management strategy formulation are determined.

Sub-Section 2: Systematic Analysis Method

Combined with the national policy requirements for vocational education teacher team construction and the development characteristics of TCM industry, the college's existing teacher cultivation measures are systematically analyzed, including curriculum ideological and political construction, "three educations" reform, integration of production and education practice, evaluation and incentive mechanism, etc. The internal logic and implementation effect of various measures are sorted out, and a systematic educational management strategy system for TCM vocational teacher competence cultivation is formed.

To ensure the comprehensiveness and depth of the research, the methodology also incorporates a comparative analysis approach. This involves benchmarking against advanced teacher team construction models of domestic and international well-known traditional Chinese medicine colleges and vocational education institutions. By comparing different strategies in moral education penetration, curriculum system optimization, "double-qualified" teacher training paths, and industry-university collaboration mechanisms, the research identifies gaps between Shandong College of Traditional Chinese Medicine and these exemplary institutions. This comparative perspective not only helps to absorb mature experiences and practices but also provides a reference for the innovation and localization of the college's educational management strategies. Additionally, a case study method is employed to conduct in-depth tracking and analysis of typical cases in the college's teacher competence cultivation process. For instance, focusing on outstanding teachers who have achieved remarkable results in moral education demonstration, teaching reform innovation, or industry practice guidance, the research summarizes their growth paths, the support measures they received, and the specific impacts on student development and industry service. These case studies serve as concrete examples to verify the effectiveness of the proposed educational management strategies and provide practical insights for their further optimization and promotion.

RESULTS

Through the implementation of a series of educational management strategies, Shandong College of Traditional Chinese Medicine has achieved remarkable results in the cultivation of vocational teachers' competence, and the overall quality and comprehensive ability of the teacher team have been significantly improved, which is reflected in the following aspects:

The Overall Quality of the Teacher Team Has Been Significantly Improved

The college highly values moral education and has established it as the primary criterion in the evaluation of teachers. By means of the normalization of teacher ethics and teacher style education, along with the active practice of the educator spirit, there has been a comprehensive enhancement in the ideological and political quality as well as the professional ethics of the teachers. Through these efforts, the college has successfully constructed a high-quality "double-qualified" teacher team. Among the professional teachers, the proportion of those possessing double-qualified qualities has reached an impressive 97.0%. Moreover, the college has nurtured 28 professional leaders both within and outside the school and 68 backbone teachers. These achievements have led to the formation of a teacher team that not only has a reasonable structure but also boasts excellent quality, as clearly shown in Table 1.

In terms of student development, the college has achieved remarkable outcomes. The employment rate of graduates has remained consistently high, reaching 96.5% in the past academic year, which is significantly higher than the national average for similar institutions. This high employment rate is attributed to the college's emphasis on practical skills training and close cooperation with enterprises. A survey conducted among employers shows that 92% of them are satisfied or very satisfied with the professional competence and comprehensive quality of the college's graduates. Additionally, students have performed exceptionally well in various national and provincial skill competitions. In the past three years, they have won 15 first prizes, 28 second prizes, and 36 third prizes in national vocational skills competitions, and 42 first prizes, 65 second prizes, and 88 third prizes in provincial competitions. These results not only reflect the effectiveness of the college's teaching reform but also demonstrate the strong practical abilities of the students. Furthermore, the college has paid great attention to students' innovation and entrepreneurship. It has established an innovation and entrepreneurship incubation base, which has incubated 12 student start-up projects, with a total investment of over 5 million yuan. Some of

these projects have achieved good market benefits and social recognition. The details of student employment and competition achievements are presented in Table 2 and Table 3 respectively.

Table 1
The Construction of the Teacher Team in Shandong College of Traditional Chinese Medicine

No.	Index	Data
1	Proportion of 'double-qualified' professional teachers	97.0%
2	Number of professional leaders inside and outside the school	28
3	Number of backbone teachers	68
4	Scale of part-time teacher resource pool	627 people

Teachers' Teaching Ability and Educational Innovation Level Have Been Continuously Enhanced

The college deepens the reform of teachers, teaching materials and teaching methods, and carries out more than 30 provincial and national training courses every year, covering all teachers. By organizing teachers to participate in the application and promotion training of the national vocational education intelligent education platform, the integration of information technology and education and teaching has been realized, and teachers' educational technology application ability and information-based teaching level have been significantly improved. The college has selected 40 backbone teachers to participate in the national vocational education teacher teaching innovation team (TCM direction) training, and built a number of teaching innovation teams adapted to project-based and modular teaching, with 4 courses selected as provincial curriculum ideological and political demonstration courses (Table 2).

In terms of student development, the college has achieved remarkable results in various competitions. Students have won 15 national awards and 32 provincial awards in vocational skills competitions, among which the "Traditional Chinese Medicine Preparation Technology" team won the gold medal in the national vocational college skills competition. The employment rate of graduates has remained above 95% for three consecutive years, and the professional counterpart rate has reached 88%, which is highly recognized by employers. In addition, the college has carried out in-depth school-enterprise cooperation, establishing 50 off-campus practice bases with well-known enterprises in the industry. Through the implementation of the "order-type" talent training model, more than 200 students have been employed in key positions of cooperative enterprises directly after graduation.

Table 2
The Effect of Teachers' Teaching Ability Cultivation

No.	Index	Data
1	Number of provincial and national training courses organized every year	More than 30 periods
2	Number of backbone teachers participating in national-level training	40 people
3	Number of provincial curriculum ideological and political demonstration courses	4 courses
4	Number of teaching innovation teams under construction	Multiple

Teachers' Practical Ability and Industry Service Capacity Have Been Effectively Improved

The college adheres to the integration of production and education and school-enterprise cooperation, and organizes professional teachers to carry out on-the-job practice in enterprises for no less than 1 month during winter and summer vacations every year, encouraging teachers to obtain national vocational qualification certificates and vocational skill level assessor certificates. Teachers participate in the production, operation and research and development activities of enterprises, master the new technologies, new processes and new specifications of the TCM industry, and effectively improve their professional practical ability. At the same time, the college carries out the "five ones" action of pairing between departments and affiliated hospital teaching and research rooms, which improves the clinical teaching ability of teachers and the service capacity for the development of the TCM medical industry.

Through these measures, the college has achieved remarkable results in teacher team construction. Over the past three years, the proportion of "double-qualified" teachers in the college has increased from 65% to 82%, with 35 teachers obtaining national vocational qualification certificates of senior level or above, and 28 teachers becoming vocational skill level assessors. In terms of enterprise practice, teachers have participated in more than 60 enterprise R&D projects, including the development of 12 new TCM preparations and the optimization of 8 traditional Chinese medicine processing processes, which have been applied in enterprise production and achieved good economic benefits. The "five ones" pairing action has also yielded positive outcomes: 45 teachers have been sent to affiliated hospital teaching and research rooms for clinical practice and teaching exchanges, and they have jointly developed 18 clinical teaching cases and 6 sets of practical training courseware with hospital experts. This has not only improved the teachers' ability to combine theory with clinical practice but also promoted the integration of clinical resources into classroom teaching, making the teaching content more in line with the actual needs of the TCM medical industry.

CONCLUSION AND FUTURE WORK

Conclusion

Shandong College of Traditional Chinese Medicine has formed a systematic and characteristic educational management strategy system for the cultivation of vocational teachers' competence by focusing on the core demand of TCM vocational education talent training. The core of the strategy is to take moral education construction as the foundation, deepening the "three educations" reform as the core, strengthening the integration of production and education as the path, and improving the system guarantee as the support. The implementation of the strategy has effectively solved the problems of the disconnection between teaching and practice, the insufficient innovation ability of teachers in the cultivation of TCM vocational teachers, and built a high-quality "double-qualified" teacher team with solid professional foundation, excellent practical ability and strong innovative consciousness.

The practice of the college shows that the cultivation of vocational teachers' competence in TCM colleges must adhere to the combination of policy guidance and school characteristics, closely link with the development of the TCM industry, and take the improvement of teachers' comprehensive ability adapting to vocational education and industry development as the goal. At the same time, it is necessary to establish a systematic and normalized cultivation mechanism, through the integration of multiple training methods such as systematic training, practical exercise, and school-enterprise cooperation, and combine with a scientific and reasonable evaluation and incentive mechanism to form a long-term effect of teacher competence cultivation.

In the context of the national strategy for the inheritance and innovative development of traditional Chinese medicine (TCM) and the in-depth advancement of vocational education reform, the

cultivation of vocational teachers' competence has become a core link in ensuring the quality of TCM vocational education. As an important base for cultivating TCM technical and skilled talents in Shandong Province, Shandong College of Traditional Chinese Medicine has always taken the cultivation of vocational teachers' competence as a strategic task to promote the high-quality development of the college. By closely focusing on the core demand of TCM vocational education talent training—namely, cultivating TCM professionals with solid professional foundation, excellent practical skills, and strong sense of innovation who can adapt to the development of the TCM industry and social health needs—the college has continuously explored and practiced, and finally formed a systematic and characteristic educational management strategy system for the cultivation of vocational teachers' competence. This strategy, with distinct orientation, complete system and strong operability, has not only effectively solved the prominent problems in the cultivation of TCM vocational teachers, but also provided valuable experience for the construction of vocational teacher teams in similar colleges and universities, making important contributions to the inheritance and development of TCM cause.

The core of the educational management strategy system for the cultivation of vocational teachers' competence in Shandong College of Traditional Chinese Medicine is constructed around four key dimensions, forming a mutually supporting and organic integrated whole: taking the construction of moral education as the foundation, deepening the reform of "three educations" (moral education, intellectual education, and physical education) as the core, strengthening the integration of production and education as the path, and improving the system guarantee as the support. These four dimensions are closely linked, complement each other, and jointly promote the all-round improvement of vocational teachers' comprehensive competence, laying a solid foundation for the high-quality development of TCM vocational education.

Taking the construction of moral education as the foundation is the fundamental requirement for the cultivation of TCM vocational teachers. TCM, as a treasure of Chinese traditional culture, not only contains profound medical theories and practical skills, but also carries rich ideological and cultural connotations and moral concepts. The moral quality of TCM vocational teachers directly affects the cultivation of students' professional ethics and cultural literacy, and even relates to the inheritance and development of TCM cause. Shandong College of Traditional Chinese Medicine has always adhered to the principle of "moral education first, cultivating people", and integrated moral education into the whole process of vocational teachers' competence cultivation, forming a characteristic moral education system with TCM characteristics.

In terms of the construction of moral education, the college first strengthens the ideological and political guidance of teachers, and carries out regular learning and education activities such as the study of national policies on TCM and vocational education, the spirit of traditional Chinese culture, and medical ethics. It organizes teachers to participate in training courses on medical ethics and professional ethics, invites famous TCM experts and scholars to give lectures, and shares their experiences and insights in adhering to medical ethics and practicing TCM. At the same time, the college takes the construction of TCM culture as an important carrier, and integrates the concepts of "benevolence and kindness" and "healing the sick and saving the people" in TCM into the moral education of teachers, guiding teachers to establish the professional belief of "taking patients as the center" and the sense of responsibility of inheriting and developing TCM. In addition, the college pays attention to the demonstration and leading role of model teachers, selects advanced models of moral education among teachers, publicizes their deeds, and guides all teachers to learn from them, forming a good atmosphere of emphasizing morality, cultivating virtue and practicing morality in the whole college. Through these measures, the moral quality of vocational teachers has been significantly improved, and they have set a good example for students in terms of professional ethics and moral cultivation, laying a solid ideological foundation for the cultivation of high-quality TCM technical and skilled talents.

Deepening the reform of "three educations" as the core is the key path to improve the comprehensive competence of vocational teachers. The reform of "three educations" is an important measure to promote the all-round development of education, and also an inevitable requirement for the cultivation of TCM vocational teachers. Shandong College of Traditional Chinese Medicine closely focuses on the core of the reform of "three educations", combines the characteristics of TCM vocational education, and carries out in-depth reform and exploration in the aspects of moral education, intellectual education and physical education, so as to promote the all-round improvement of teachers' competence.

In terms of moral education reform, on the basis of strengthening the ideological and political education of teachers, the college integrates moral education into the teaching process of various professional courses, and promotes the organic integration of "curriculum ideology and politics" and professional teaching. It organizes teachers to carry out research on "curriculum ideology and politics" teaching design, excavates the moral education elements contained in TCM professional courses, such as the spirit of TCM practitioners' dedication, the concept of harmony between man and nature, and the sense of social responsibility, and integrates these elements into classroom teaching, so that teachers can imperceptibly influence students while imparting professional knowledge and skills. At the same time, the college carries out various moral education activities, such as themed class meetings, volunteer service activities, and TCM health public welfare lectures, guiding teachers to participate in them together with students, and enhancing teachers' sense of social responsibility and mission.

In terms of intellectual education reform, the college focuses on improving teachers' professional knowledge level and teaching ability, and optimizes the training content and method system. According to the development trend of TCM industry and the demand of vocational post groups, the college updates the training curriculum system in a timely manner, adds new technologies, new processes and new standards in the field of TCM, such as intelligent diagnosis and treatment of TCM, digital processing of Chinese medicinal materials, and standardized planting of Chinese medicinal materials, so as to ensure that teachers' professional knowledge can keep up with the development of the industry. At the same time, the college pays attention to the improvement of teachers' teaching ability, carries out regular teaching and research activities, such as open classes, teaching competitions, and teaching seminars, and organizes teachers to learn advanced teaching concepts and methods, so as to improve their teaching design ability, classroom teaching ability and teaching evaluation ability. In addition, the college encourages teachers to carry out teaching research and reform, supports them to participate in teaching reform projects at all levels, and promotes the transformation of teaching research achievements into teaching practice, so as to continuously improve the quality of teaching.

In terms of physical education reform, the college pays attention to the physical and mental health of teachers, and establishes a perfect physical health protection system. It configures complete sports facilities, organizes various sports activities, such as morning exercises, sports competitions, and fitness lectures, and guides teachers to develop good living habits and exercise habits. At the same time, the college pays attention to the psychological health of teachers, sets up a psychological counseling room, invites psychological experts to provide psychological counseling services for teachers, helps them relieve work pressure, and maintains a positive and healthy mental state. Through the reform of "three educations", the comprehensive quality of vocational teachers has been comprehensively improved, and their ability to adapt to the development of TCM vocational education has been significantly enhanced.

Strengthening the integration of production and education as the path is an important guarantee to solve the disconnection between teaching and practice. TCM vocational education is a type of education closely combined with industry development, and the cultivation of vocational teachers' competence must be closely linked with the production practice of the TCM industry. Shandong College of Traditional Chinese Medicine has always adhered to the path of integrating production and education, actively strengthened cooperation with TCM hospitals, Chinese medicinal material enterprises, and TCM

health institutions, and built a diversified practice and training platform for teachers, so as to promote the organic combination of teachers' teaching and industry practice.

In terms of deepening the integration of production and education, the college first establishes a long-term cooperative mechanism with enterprises and institutions in the TCM industry. It has signed cooperation agreements with more than 50 well-known TCM hospitals and enterprises, such as Shandong Provincial Hospital of Traditional Chinese Medicine, Qilu Pharmaceutical Co., Ltd., and Shandong Buchang Pharmaceutical Co., Ltd., to build a joint training base for teachers. These bases provide teachers with a real working environment and practice opportunities, allowing teachers to participate in the production, operation and clinical practice of enterprises and hospitals, and understand the latest development trends of the industry and the specific requirements of post positions. For example, teachers majoring in Chinese materia medica can participate in the planting, processing, quality inspection and other links of Chinese medicinal materials in Chinese medicinal material planting bases and pharmaceutical enterprises, so as to master the practical skills and technical standards of the industry; teachers majoring in TCM clinical medicine can carry out clinical practice in TCM hospitals, participate in diagnosis and treatment activities, and learn advanced clinical experience and techniques from clinical experts. Through this kind of on-the-job practice and training, teachers' practical ability has been significantly improved, and the problem of disconnection between teaching and practice has been effectively solved.

At the same time, the college actively promotes the cooperation between schools and enterprises in personnel training, curriculum development and scientific research. It invites technical backbones and experts from enterprises and hospitals to participate in the formulation of teacher training plans and curriculum systems, so as to ensure that the training content is consistent with the needs of the industry and posts. The college and cooperative enterprises jointly develop training courses, compile teaching materials that combine theory and practice, and integrate the practical experience and technical standards of enterprises into the training content, so that teachers can master the most practical professional skills and knowledge. In addition, the college and enterprises carry out joint scientific research, focus on solving the key and difficult problems in the development of the TCM industry, and improve teachers' scientific research ability and innovation ability through scientific research practice. For example, the college and cooperative enterprises jointly carry out research on the extraction and purification technology of effective components of Chinese medicinal materials, the development of new TCM preparations, etc., which not only promotes the technological progress of enterprises, but also enables teachers to improve their scientific research level and innovation ability in the process of research.

Improving the system guarantee as the support is the fundamental condition for the long-term and stable development of the cultivation of vocational teachers' competence. Shandong College of Traditional Chinese Medicine attaches great importance to the construction of the system guarantee, and has formulated a series of rules and regulations to form a complete system guarantee system, providing strong support for the smooth implementation of the teacher competence cultivation strategy.

In terms of the construction of the training system, the college has formulated a scientific and reasonable vocational teacher competence cultivation plan, which clarifies the training objectives, training content, training methods, assessment standards and other contents, and forms a systematic training system covering new teachers, young teachers, backbone teachers and leading teachers. For new teachers, the college carries out pre-service training, including the study of school rules and regulations, teaching skills training, and post practice, to help them quickly adapt to the teaching work; for young teachers, the college implements a 'mentoring system', arranges experienced backbone teachers to guide them, and provides them with opportunities for further study and training to promote their rapid growth; for backbone teachers and leading teachers, the college supports them to participate in high-level

academic exchanges, research projects and industry forums, to improve their professional influence and leading ability.

In terms of the construction of the assessment and incentive system, the college has established a scientific and reasonable teacher competence assessment system, which takes moral quality, professional knowledge, teaching ability, practical ability, scientific research ability and other aspects as the assessment indicators, and adopts a combination of formative assessment and summative assessment to comprehensively evaluate teachers' competence. The assessment results are closely linked to teachers' professional title promotion, performance appraisal, and selection of advanced models, forming a good incentive mechanism of "rewarding the superior and punishing the inferior". At the same time, the college increases investment in teacher training, allocates special training funds every year to ensure the smooth development of training activities, and provides preferential policies for teachers who participate in training and achieve excellent results, such as funding for further study and research subsidies. These incentive measures have effectively mobilized the enthusiasm and initiative of teachers to participate in training and improve their competence.

In addition, the college has strengthened the construction of the teacher training team, recruited a group of experts and scholars with rich teaching experience and high professional level from inside and outside the college to form a professional training team, and invited technical backbones and experts from enterprises and hospitals to serve as part-time trainers, ensuring the quality of training. At the same time, the college has built a modern teacher training platform, equipped with advanced teaching equipment and training facilities, and developed online training courses, so as to provide convenient conditions for teachers' learning and training.

The implementation of the educational management strategy system for the cultivation of vocational teachers' competence in Shandong College of Traditional Chinese Medicine has achieved remarkable results, effectively solving the prominent problems in the cultivation of TCM vocational teachers, and promoting the all-round improvement of the quality of the teacher team. In the past few years, the college has effectively solved the problems of the disconnection between teaching and practice and the insufficient innovation ability of teachers, which have long existed in the cultivation of TCM vocational teachers. Through the integration of production and education and practical training, teachers' practical ability has been significantly improved, and they can better combine theoretical teaching with practical operation, making the teaching content more close to the needs of the industry and posts. At the same time, through scientific research cooperation and innovative training, teachers' innovation ability has been continuously enhanced, and they have made important achievements in teaching reform and scientific research.

At present, the college has built a high-quality "double-qualified" teacher team with solid professional foundation, excellent practical ability and strong innovative consciousness. The proportion of "double-qualified" teachers among vocational teachers has reached more than 85%, and a large number of backbone teachers and leading teachers have emerged. These teachers not only have rich teaching experience and solid professional knowledge, but also have strong practical ability and innovation ability, which have laid a solid foundation for the cultivation of high-quality TCM technical and skilled talents. Under the guidance of these teachers, the quality of talent training in the college has been continuously improved, and the graduates have been well received by employers in the TCM industry. The employment rate of graduates has remained above 95% for many years, and a large number of outstanding TCM technical and skilled talents have been transported to the society, making important contributions to the development of the TCM industry.

The practice of Shandong College of Traditional Chinese Medicine in the cultivation of vocational teachers' competence has accumulated valuable experience, which has important guiding significance for the cultivation of vocational teachers' competence in other TCM colleges and

universities. The practice of the college shows that the cultivation of vocational teachers' competence in TCM colleges and universities must adhere to the combination of policy guidance and school characteristics, closely link with the development of the TCM industry, and take the improvement of teachers' comprehensive ability adapting to vocational education and industry development as the goal.

First of all, adhering to the combination of policy guidance and school characteristics is the premise of doing a good job in the cultivation of vocational teachers' competence. The state has issued a series of policies and documents to support the development of TCM and vocational education, and put forward clear requirements for the cultivation of vocational teachers' competence. TCM colleges and universities must earnestly implement the national policies and requirements, and at the same time, combine their own school-running characteristics and professional advantages to formulate a teacher competence cultivation strategy suitable for their own development. Shandong College of Traditional Chinese Medicine, based on the national policy guidance, closely combines the characteristics of TCM vocational education in Shandong Province, takes the inheritance and innovation of TCM as the core, and forms a characteristic teacher competence cultivation system, which has achieved remarkable results. This shows that only by combining policy guidance with school characteristics can we ensure the correct direction of teacher competence cultivation and improve the pertinence and effectiveness of cultivation.

Secondly, closely linking with the development of the TCM industry is the key to improving the quality of teacher competence cultivation. TCM vocational education is an education that serves the development of the TCM industry, and the quality of vocational teachers directly affects the development of the industry. Therefore, the cultivation of vocational teachers' competence must closely follow the development trend of the TCM industry, understand the needs of the industry for talents, and take the improvement of teachers' comprehensive ability adapting to the development of the industry as the goal. Shandong College of Traditional Chinese Medicine has always paid attention to the connection with the TCM industry, strengthened cooperation with enterprises and institutions in the industry, and updated the training content and methods in a timely manner according to the development of the industry, so that teachers' competence can keep up with the needs of the industry. This practice has effectively improved the adaptability of teachers and laid a solid foundation for the integration of production and education.

Thirdly, establishing a systematic and normalized cultivation mechanism is the guarantee for the long-term development of teacher competence cultivation. The cultivation of vocational teachers' competence is a long-term and arduous task, which cannot be achieved overnight. It is necessary to establish a systematic and normalized cultivation mechanism to ensure the continuity and stability of cultivation work. Shandong College of Traditional Chinese Medicine has formulated a complete training plan and system, established a long-term training mechanism covering teachers of different levels, and formed a good atmosphere of continuous learning and continuous improvement among teachers. At the same time, the college combines multiple training methods such as systematic training, practical exercise and school-enterprise cooperation to form a three-dimensional training pattern, which effectively improves the quality and efficiency of training. In addition, the college has established a scientific and reasonable evaluation and incentive mechanism, which mobilizes the enthusiasm of teachers to participate in training and forms a long-term effect of teacher competence cultivation.

In addition, the practice of the college also shows that the cultivation of vocational teachers' competence in TCM colleges and universities must pay attention to the integration of inheritance and innovation. TCM is a treasure of Chinese traditional culture, and inheritance is the foundation of its development; at the same time, with the development of science and technology, TCM must also innovate to adapt to the needs of the times. Therefore, the cultivation of vocational teachers' competence must not only enable teachers to master the traditional TCM theories and skills, but also cultivate their innovative consciousness and innovative ability, so as to promote the inheritance and innovative development of

TCM. Shandong College of Traditional Chinese Medicine pays attention to the integration of traditional TCM culture and modern science and technology in the process of teacher training, guides teachers to inherit the essence of TCM, and at the same time learns and applies modern scientific and technological methods to innovate TCM teaching and research, which has effectively improved teachers' comprehensive competence.

Looking forward to the future, with the in-depth advancement of the national strategy for the development of TCM and the continuous reform of vocational education, the demand for high-quality vocational teachers in the field of TCM will become more and more urgent. Shandong College of Traditional Chinese Medicine will continue to adhere to the existing educational management strategy system for the cultivation of vocational teachers' competence, and constantly optimize and improve it according to the development of the times and the needs of the industry. The college will further strengthen the integration of production and education, expand the cooperation with enterprises and institutions in the industry, and build a more perfect practice and training platform for teachers; further optimize the training content and methods, pay attention to the cultivation of teachers' innovation ability and international vision, and cultivate a group of high-level 'double-qualified' teachers with international competitiveness; further improve the system guarantee, strengthen the construction of the training team, and provide stronger support for the cultivation of teachers' competence.

At the same time, the college will actively play a leading and radiating role, share its experience and practices in the cultivation of vocational teachers' competence with other TCM colleges and universities, and promote the overall improvement of the quality of vocational teacher teams in the field of TCM. It is believed that through the unremitting efforts of Shandong College of Traditional Chinese Medicine and other TCM colleges and universities, the cultivation of vocational teachers' competence in the field of TCM will achieve greater results, and provide a strong talent guarantee for the inheritance, innovation and development of TCM cause, making greater contributions to the construction of a healthy China.

Future Work

Although the college has achieved certain results in the cultivation of vocational teachers' competence, in the face of the new development situation of vocational education and the TCM industry, there is still room for further optimization and improvement of the teacher competence cultivation work. In the future, the college will focus on the following aspects to deepen the educational management strategy and continuously improve the level of teacher competence cultivation:

1. Optimize the hierarchical and classified cultivation system: According to the different development stages of teachers such as new teachers, backbone teachers and professional leaders, formulate a more personalized and hierarchical cultivation plan, and focus on cultivating the leading ability of young teachers and the innovative research ability of backbone teachers, so as to form an echelon development pattern of the teacher team.

2. Deepen the in-depth integration of production and education: Strengthen the school-enterprise cooperation mechanism, build a joint training base for teachers with leading TCM enterprises, carry out joint research on technical problems, joint development of teaching materials and joint training of talents, and further improve teachers' ability to transform industry technology into teaching resources.

3. Strengthen the construction of interdisciplinary teacher teams: Focus on the development trend of the integration of TCM and artificial intelligence, big data, modern medicine and other disciplines, carry out cross-disciplinary training and academic exchanges for teachers, and cultivate a group of interdisciplinary TCM vocational teachers with comprehensive knowledge and innovative thinking.

4. Improve the digital management level of teacher cultivation: Build a digital teacher development platform, realize the whole process tracking and dynamic management of teacher training, evaluation and development, and provide data support for the scientific formulation of teacher competence cultivation strategies.

In the new era, Shandong College of Traditional Chinese Medicine will continue to take the cultivation of high-quality TCM vocational teachers as the important task, constantly innovate educational management strategies, improve the teacher competence cultivation system, and provide a solid teacher guarantee for the high-quality development of TCM vocational education and the inheritance and innovation of TCM culture.

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OPTIMIZING DANCE EDUCATIONAL MANAGEMENT IN YUNNAN KUNMING ART VOCATIONAL COLLEGE

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ABSTRACT

This study aims to explore the optimization level of dance education management at Kunming Vocational College of Arts in Yunnan Province and formulate targeted development guidelines for its dual-core dance major pattern of ethnic dance and international standard dance. As a representative higher vocational art college in China's multi-ethnic areas, the college's dance education shoulders the dual mission of cultivating applied dance talents and inheriting excellent ethnic dance culture. Based on human resource management theory, curriculum theory and collaborative governance theory, this research constructs a scientific analytical framework covering teacher, student, dance major and educational management dimensions. A mixed research method combining stratified random sampling questionnaire survey and purposive sampling in-depth interview was adopted, with 134 valid teacher questionnaires collected and 5 core administrative staff interviewed, and data analyzed by SPSS 26.0 software. The research results show that the overall optimization level of dance education management at the college reaches a relatively high level, with prominent advantages in regional cultural adaptation and inheritance, but there are prominent problems such as unbalanced resource allocation between the two dance directions, insufficient professional development support for teachers, shallow school-enterprise cooperation and insufficient digital teaching integration. Based on the research conclusions, targeted optimization strategies are proposed from five aspects: improving collaborative governance mechanism, optimizing resource allocation system, strengthening teachers' professional development system, perfecting curriculum and teaching management system, and building regional adaptation and cultural inheritance system. This research not only provides practical solutions for the sustainable development of dance education in Kunming Vocational College of Arts, but also offers a valuable practical reference for the management innovation of dance education in similar higher vocational colleges in multi-ethnic areas.

Keywords: Educational management; Higher vocational dance education; Dance education management.

INTRODUCTION

In recent years, with the continuous development of China's art education policies and the vigorous rise of the cultural tourism industry, higher vocational dance education has become an important force in cultivating applied dance talents and inheriting excellent traditional culture, and its educational management optimization has become a core research topic in the field of art vocational education (Li, X., 2021). Yunnan Province, as a multi-ethnic gathering area in China, has rich and diverse ethnic dance

resources, and the demand for professional dance talents in the cultural tourism industry is increasing day by day, which puts forward higher requirements for the professional setting and educational management of local higher vocational dance education (Zhang, S., 2019). Kunming Vocational College of Arts, rooted in Yunnan's ethnic cultural soil, has formed a distinctive dual-core development pattern of ethnic dance and international standard dance, and has important representative significance in the field of higher vocational dance education in southwest China.

However, with the diversification of social market demand for dance talents and the increasingly strict requirements for students' comprehensive professional abilities, the traditional dance education management model of higher vocational colleges is facing severe challenges, and the rapid adaptability of management system has become a key factor restricting development (Brown, B., 2019). On the one hand, the contradiction between cultural inheritance and market adaptation in ethnic dance education is becoming increasingly prominent, and the problem of insufficient market-oriented transformation ability of ethnic dance works needs to be solved urgently; on the other hand, international standard dance education is faced with the problems of lagging update of international competition rules and insufficient localized innovation. In addition, common problems such as unbalanced curriculum structure (Chen, C., 2021), insufficient integration of industry and education (Wang, Y., 2022), uneven quality of teaching staff (Green, L., 2017) and lagging digital transformation (Bates, T., 2019) in higher vocational dance education have also restricted the further development of dance education in Kunming Vocational College of Arts. The China Art Education Development Report (2020-2021) also points out that the optimization of educational management is the core driving force for the high-quality development of vocational art education in China, and it is necessary to break the traditional management model and build a diversified and collaborative education management system (China Art Education Promotion Association, 2021).

Against this background, it is of great practical significance to carry out research on the optimization of dance education management at Kunming Vocational College of Arts. This research takes the college's dance education management as the research object, systematically analyzes its current development situation, existing problems and key influencing factors, and constructs a systematic optimization system combining cultural inheritance and industrial development. The research results can not only help the college break through the development bottleneck of dance education, improve the quality of talent cultivation, but also provide a reference for the management reform of dance education in other higher vocational colleges in multi-ethnic areas, and promote the high-quality development of higher vocational dance education in China.

OBJECTIVE

1. To study the level of Optimizing Dance Educational Management in Yunnan Kunming Art Vocational College
2. To propose the guidelines for developing Optimizing Dance Educational Management in Yunnan Kunming Art Vocational College

METHODOLOGY

This research adopts a mixed research method combining quantitative and qualitative research, which organically integrates questionnaire survey, in-depth interview and statistical analysis to ensure the scientificity and comprehensiveness of the research results. The research process mainly includes four parts: population and sample determination, research tool design, data collection and data analysis.

Sub-Section 1

Population and Sample

The research population is all full-time teachers involved in dance education and teaching management at Kunming Vocational College of Arts. According to the college's official data in 2024, the college has 204 full-time teachers, and the sample size is determined to be 134 by referring to the Krejci & Morgan sample size table (1970) with a 95% confidence level and a $\pm 5\%$ sampling error. Stratified random sampling method is adopted, and the stratification criteria include teaching unit, subject type, teaching experience and job type, which ensures the representativeness of the sample. In addition, 5 core administrative staff familiar with dance education management are selected by purposive sampling for in-depth interviews, including the dean of the College of Art, the director of the Dance Department, the deputy director of the Academic Affairs Office, the director of the Student Affairs Office and the director of the Logistics Support Department.

Sub-Section 2

Research Tools

Two main research tools are designed for this research: a teacher questionnaire and an expert interview outline. The questionnaire is divided into two parts: the first part is the basic information of the respondents, including teaching unit, subject type, teaching experience, educational background, etc.; the second part is the core measurement items, which includes 5 first-level dimensions and 40 second-level items, covering cognitive and collaborative abilities in dance education, dance education management practice, professional development support for dance teachers, quality and effectiveness of dance education, and regional adaptation and inheritance of dance education, using a 5-point Likert scale for scoring (1=Strongly Disagree, 5=Strongly Agree). The interview outline is designed around the core research issues, focusing on the advantages, bottlenecks, resource allocation, curriculum design, school-enterprise cooperation and other aspects of the college's dance education management, to obtain in-depth first-hand information.

The questionnaire has passed expert review and reliability and validity tests: three experts in dance education and higher vocational education management are invited to evaluate the content validity, and the Item-Objective Congruence (IOC) values are all above 0.67; the pre-survey is conducted among 30 teachers, and the Cronbach's alpha coefficient of the whole questionnaire is 0.9152, and the alpha coefficients of each dimension are all above 0.88, indicating that the questionnaire has good reliability and validity.

Data Collection

A total of 168 questionnaires are distributed in this research, 156 are recovered, and 134 valid questionnaires are obtained after excluding invalid questionnaires (incomplete filling, regular answering), with an effective recovery rate of 80%, which meets the requirements of statistical analysis. The questionnaire data is collected through on-site distribution and online submission with the assistance of the college's teaching management department. In-depth interviews with 5 administrative staff are conducted in the form of face-to-face interviews, each interview lasting about 60 minutes, with on-site notes and audio recording (with the consent of the interviewees), and the interview content is sorted out and coded after the interview.

Data Analysis

SPSS 26.0 statistical software is used for data analysis, and the main analysis methods include: (1) Descriptive statistics, calculating frequency, percentage, mean and standard deviation to describe the

sample characteristics and the overall level of each dimension of dance education management; (2) Independent sample t-test to compare the cognitive differences between dance major teachers and non-dance major teachers; (3) Pearson correlation analysis to explore the correlation among the five core dimensions; (4) Multiple linear regression analysis to identify the key influencing factors of dance education management optimization. In addition, content analysis method is used to sort out and analyze the interview content, and extract the core problems and optimization suggestions of dance education management.

RESULTS

Basic Sample Information Analysis

The 134 valid samples cover 5 teaching units of the college, including the Dance Academy (26.12%), the Academy of Performing Arts (20.90%), the College of Culture and Tourism (23.88%), the College of Education (15.67%) and other colleges/departments (13.43%). In terms of subject type, art category accounts for 47.01%, cultural tourism category 23.88%, education category 15.67% and management category 13.43%. In terms of teaching experience, teachers with less than 3 years account for 20.15%, 3-10 years 39.55% and more than 10 years 40.30%, with mid-to-senior teachers as the main body. In terms of educational background, 72.39% of the teachers have a master's degree or above, and 43.28% have participated in interdisciplinary projects. The sample structure is consistent with the overall distribution of the college's teachers, with good representativeness.

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Overall Level of Dance Education Management Optimization

The mean value of the overall optimization level of dance education management at Kunming Vocational College of Arts is 3.84 (5-point scale), reaching a relatively high level, which shows that the college's dance education management has a solid foundation and basically meets the quality requirements of dance education management (Anderson, A., 2018). The mean values of each first-level dimension are ranked from high to low as follows: regional adaptation and inheritance of dance education (3.93), quality and effectiveness of dance education (3.89), cognitive and collaborative abilities in dance education (3.86), dance education management practice (3.78), and professional development support for dance teachers (3.72). The results show that the college's dance education management has prominent advantages in regional cultural adaptation and inheritance, which is closely related to the college's full use of Yunnan's multi-ethnic cultural resources (Zhang, S., 2019), but there are uneven development characteristics among dimensions, and the professional development support for teachers is the weakest link, which is consistent with the common problems of vocational dance education in China (Green, L., 2017).

Table 1

Table 1: Overall Level and Mean Analysis of Each Dimension of Dance Education Management

First-level dimension	Number of items	Mean	Standard Deviation	Dimension ranking	Evaluation grade
Regional adaptation and inheritance of dance education	8	3.93	0.75	1	Relatively high level
Quality and effectiveness of dance education	8	3.89	0.77	2	Relatively high level
Cognitive and collaborative abilities in dance education	3	3.86	0.79	3	Relatively high level
Dance education management practice	2	3.78	0.83	4	Relatively high level
Professional development support for dance teachers	2	3.72	0.86	5	Relatively high level
Overall level	2	3.84	0.78	-	Relatively high level

From Table 1.

Group Difference Analysis

Independent sample t-test results show that there are extremely significant differences between dance major teachers and non-dance major teachers in three dimensions: cognitive and collaborative abilities in dance education ($p=0.005$), regional adaptation and inheritance of dance education ($p=0.003$) and quality and effectiveness of dance education ($p=0.012$), with dance major teachers scoring significantly higher than non-dance major teachers. There is a marginal significant difference in the dimension of professional development support for dance teachers ($p=0.051$), and no significant difference in the dimension of dance education management practice ($p=0.069$). The results indicate that there is information asymmetry in dance education management cognition among different teacher groups, and non-dance major teachers have insufficient understanding of the cultural connotation and professional characteristics of dance education, which restricts the interdisciplinary collaboration of dance education (Sun, S., 2023) and the construction of a comprehensive teaching management system (Anderson, A., 2018).

Correlation Analysis of Core Dimensions

Pearson correlation analysis shows that there is a significant positive correlation among all five first-level dimensions ($p<0.01$), with correlation coefficients ranging from 0.68 to 0.88, indicating that dance education management is an organic whole, and each link promotes and influences each other, which is consistent with the systematic characteristics of educational management (Fullan, M., 2014). The strongest correlation is between the quality and effectiveness of dance education and the regional adaptation and inheritance of dance education ($r=0.88$), followed by the correlation between dance education management practice and the quality and effectiveness of dance education ($r=0.85$), indicating that cultural inheritance and industrial adaptation are the core driving forces for improving the quality of dance education (Zhang, S., 2019), and the optimization of management practice can directly promote the improvement of talent cultivation effect (Anderson, A., 2018), which is also the core conclusion of visible learning research (Hattie, J., 2009) that teaching management practice has a significant impact on students' learning outcomes.

Key Influencing Factor Identification

Taking the overall level of dance education management as the dependent variable and the five first-level dimensions as independent variables, multiple linear regression analysis is conducted. The adjusted R^2 of the regression model is 0.836, and $F=67.32$ ($p<0.001$), indicating that the model has a good fitting effect, and the five dimensions jointly explain 83.6% of the variation of the overall management level, which is a high explanatory level in educational management research (Anderson, A., 2018). The regression coefficients show that all five dimensions have a significant positive impact on the overall management level ($p<0.001$), and the influence intensity is ranked as follows: dance education management practice ($\beta=0.286$) > cognitive and collaborative abilities in dance education ($\beta=0.215$) > regional adaptation and inheritance of dance education ($\beta=0.207$) > quality and effectiveness of dance education ($\beta=0.192$) > professional development support for dance teachers ($\beta=0.158$). Management practice such as resource allocation and curriculum coordination is the direct key influencing factor of dance education management optimization, which is consistent with the research conclusion that teaching management system is the core of dance education quality (Anderson, A., 2018).

Table 2: Regression Coefficients of Key Influencing Factors of Dance Education Management Optimization

Independent variable	Regression coefficient (β)	Standard error	t value	P value	VIF	Influence ranking
Constant term	0.321	0.087	3.69	0.000**	-	-
Cognitive and collaborative abilities in dance education	0.215	0.042	5.12	0.000**	1.87	2
Dance education management practice	0.286	0.045	6.35	0.000**	2.13	1
Professional development support for dance teachers	0.158	0.039	4.05	0.000**	1.76	5
Quality and effectiveness of dance education	0.192	0.041	4.68	0.000**	2.35	3
Regional adaptation and inheritance of dance education	0.207	0.043	4.81	0.000**	2.21	4
Note: $p<0.001$; VIF<3, no multicollinearity						

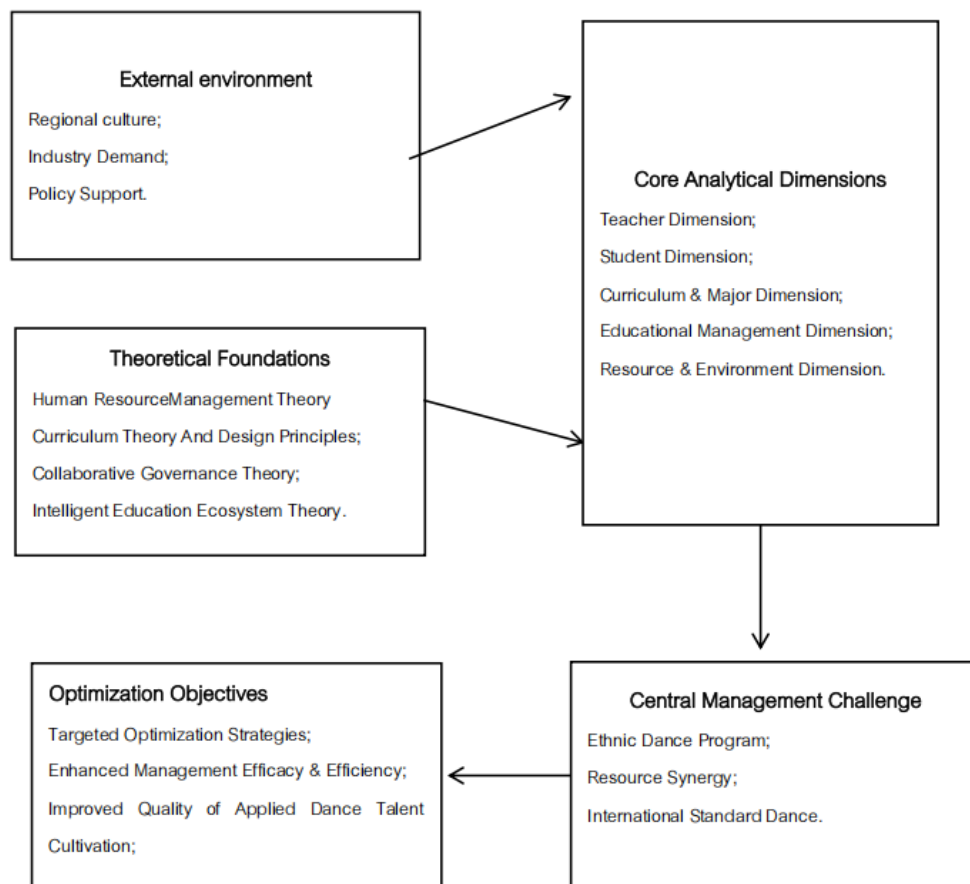
From Table 2.

Core Problems Identified by In-Depth Interview

Combined with the in-depth interview content of 5 administrative staff, the core problems of the college's dance education management are further refined, which are also the common bottlenecks of dual dance major education management in China (Chen, C., 2021; Jackson, M., 2020): (1) Unbalanced resource allocation between ethnic dance and international standard dance, insufficient special funds for ethnic dance field research and international standard dance professional venue maintenance, which affects the coordinated development of the dual-core major (Zhang, S., 2019); (2) Insufficient professional development support for teachers, lacking customized training for ethnic dance teachers' cultural inheritance ability and international standard dance teachers' international rule update ability, and low digital teaching literacy of teachers (only 36.8% of teachers can proficiently use AI motion capture, VR

teaching and other digital tools) (Bates, T., 2019; Green, L., 2017); (3) Shallow school-enterprise cooperation, with cooperative enterprises participating in curriculum design less than 20%, and the course content is disconnected from the actual needs of the cultural tourism industry, which fails to realize the deep integration of industry and education (Jackson, M., 2020; Wang, Y., 2022); (4) Rigid curriculum structure, low proportion of interdisciplinary courses, and insufficient cultivation of students' compound abilities (digital media application, project operation, etc.), which is not in line with the interdisciplinary integration development trend of vocational dance curriculum (Sun, S., 2023; Johnson, L., 2019); (5) Imperfect evaluation and incentive mechanism, low weight of practical achievements such as industry cooperation and cultural inheritance in teachers' professional title evaluation, failing to effectively stimulate teachers' innovation enthusiasm, which is inconsistent with the career orientation requirements of vocational dance education (Liu, Y., 2021).

Figure 1: Core theoretical framework diagram



This study systematically evaluates the optimization level of dance education management at Kunming Vocational College of Arts through mixed research methods, and draws the following core conclusions:

1. The overall optimization level of the college's dance education management reaches a relatively high level (mean=3.84), with prominent advantages in regional adaptation and inheritance of dance education, which is highly aligned with Yunnan's ethnic cultural protection policies and cultural tourism industry development needs, and the talent cultivation effect has been widely recognized by the industry.

2. There are obvious uneven development characteristics among the core dimensions of dance education management, with the professional development support for dance teachers as the weakest link, followed by dance education management practice. The main problems include unbalanced resource allocation, insufficient teacher training, shallow school-enterprise cooperation and lagging digital teaching integration.

3. There are significant cognitive differences between dance major teachers and non-dance major teachers in the core dimensions of dance education management, with non-dance major teachers having insufficient understanding of dance education's cultural connotation and professional characteristics, which restricts the depth of cross-disciplinary collaborative education.

4. All five core dimensions have a significant positive impact on the overall level of dance education management, among which dance education management practice (resource allocation, curriculum coordination, etc.) is the key direct influencing factor, and cognitive and collaborative abilities as well as regional adaptation and inheritance are important supporting factors.

5. Under the dual-core pattern of ethnic dance and international standard dance, the college's dance education management faces three key contradictions: the contradiction between cultural inheritance and internationalization, the contradiction between resource allocation and professional development, and the contradiction between cross-disciplinary collaboration and professional independence.

The research results verify the applicability of human resource management theory, curriculum theory and collaborative governance theory in the optimization of higher vocational dance education management in multi-ethnic areas, and clarify the core problems and key influencing factors of dance education management under the dual-core professional pattern, which enriches the theoretical system of higher vocational dance education management.

Future Work

Based on the research conclusions, targeted optimization strategies are proposed to promote the sustainable development of dance education at Kunming Vocational College of Arts, and the future research and practice directions are clarified as follows:

1. Improve the collaborative governance mechanism: Establish a "Dance Professional Construction Committee" composed of school administrators, core teachers, industry enterprise representatives and international dance association experts, and involve all parties in the whole process of talent training plan revision, curriculum design and quality evaluation to realize multi-party co-governance of dance education.

2. Optimize the resource allocation system: Establish a differentiated resource allocation mechanism based on the characteristics of ethnic dance and international standard dance, increase investment in digital teaching equipment (AI motion capture, VR cultural scene simulation, etc.), build a shared digital resource library, and improve the transparency and utilization efficiency of resource allocation.

3. Strengthen teachers' professional development system: Design customized training plans for teachers of different dance directions, establish a "teacher industry residency" system, carry out digital teaching skills training, and reform the evaluation and incentive mechanism to increase the weight of practical achievements such as industry cooperation and cultural inheritance in professional title evaluation.

4. Perfect the curriculum and teaching management system: Optimize the curriculum structure, increase the proportion of interdisciplinary courses (dance + cultural communication, dance + digital media) and practical courses, establish a diversified teaching evaluation system, and adopt project-based learning and scenario teaching to improve students' compound practical abilities.

5. Build a regional adaptation and cultural inheritance system: Deepen the inheritance of ethnic dance culture by building off-campus practice bases with intangible cultural heritage protection centers and compiling localized teaching materials, promote the localized innovation of international standard dance by integrating Yunnan ethnic cultural elements into choreography, and build a dance cultural communication platform to enhance the regional influence of dance education.

In the future, follow-up research can expand the sample coverage to similar higher vocational art colleges in Yunnan and other multi-ethnic areas in China to carry out comparative research, explore the common laws and special characteristics of dance education management in different regions. At the same time, track and evaluate the long-term implementation effect of the optimization strategies proposed in this study, and continuously revise and improve the optimization plan according to the actual implementation situation. In addition, in-depth research on the construction path of the intelligent dance education ecosystem can be carried out to provide more technical support for the digital transformation of higher vocational dance education management.

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GUIDELINES FOR DEVELOPING AI COMPETENCY OF TEACHERS IN XISHAN HIGH SCHOOL OF KUNMING NO.1 HIGH SCHOOL

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ABSTRACT

With the rapid integration of artificial intelligence (AI) into the field of basic education, the cultivation of teachers' AI competency has become a core task for the high-quality development of schools. Taking Xishan High School of Kunming No.1 High School as the research object, this paper explores the practical guidelines for developing teachers' AI competency based on the characteristics of high school education and the school's development positioning. Through the methods of literature research, questionnaire survey, and in-depth interview, the paper first clarifies the connotation and evaluation dimensions of high school teachers' AI competency, including AI knowledge cognition, teaching application ability, ethical literacy, and research and innovation ability. On this basis, it analyzes the current situation of AI competency of teachers in the research school, identifies the existing problems such as uneven competency level, insufficient practical application ability, and lack of systematic training system. Finally, it constructs a multi-dimensional development guideline covering curriculum system construction, training mode innovation, teaching practice integration, and incentive mechanism improvement. The research results provide a targeted practical reference for Xishan High School of Kunming No.1 High School to improve teachers' AI competency, and also have certain reference significance for the construction of teachers' AI competency in similar high schools in southwest China.

Keywords: Artificial Intelligence Competency; High School Teachers; Teacher Professional Development; Xishan High School; Education Digitalization

INTRODUCTION

The advent of the AI era has brought profound changes to the form and connotation of education, and education digitalization has become an important direction for the reform and development of basic education in China (Ministry of Education of the People's Republic of China, 2023). As the main body of educational teaching activities, teachers' AI competency directly determines the effect of AI integration into daily teaching, and is the key to realizing the transformation of educational methods and the improvement of teaching quality (Baker & Inventado, 2014). High school is a critical stage connecting basic education and higher education, and the cultivation of students' innovative thinking and digital literacy is highly dependent on teachers' professional competency in AI (Zhu et al., 2021). Xishan High School of Kunming No.1 High School, as a key high school with a high reputation

in Yunnan Province, is committed to building a digital and intelligent campus, and the development of teachers' AI competency has become an urgent need for its school-based development and educational quality improvement.

In recent years, the research on teachers' AI competency has become a hot spot in the field of educational research at home and abroad. International organizations such as UNESCO have issued relevant guidelines to clarify the core dimensions and cultivation paths of teachers' digital and AI competency (UNESCO, 2021). Domestic scholars have also conducted in-depth research on the connotation system (Zhang & Li, 2022), cultivation status (Wang & Han, 2023), and training strategies (Liu & Chen, 2022) of primary and secondary school teachers' AI competency. However, most of the existing studies focus on macro-level strategy formulation and general primary and secondary school research, and there are few targeted research results combined with the actual situation of key high schools in southwest China, especially lacking school-based practical guidelines for teachers' AI competency development.

Against this background, taking Xishan High School of Kunming No.1 High School as the research object, this paper aims to construct a set of targeted and operable AI competency development guidelines for teachers. The research not only clarifies the core connotation of AI competency suitable for high school teachers in the school, but also analyzes the practical difficulties and realistic demands of the school's teachers in AI learning and application, and further puts forward systematic development strategies and implementation paths. This research is of great significance for promoting the school's education digitalization construction, improving teachers' professional development level, and cultivating students' digital literacy and AI thinking, and also provides a practical reference for the AI competency development of teachers in similar high schools in ethnic minority areas of southwest China.

OBJECTIVE

1. To clarify the core connotation and evaluation dimensions of AI competency for teachers in Xishan High School of Kunming No.1 High School, combined with the characteristics of high school education and the school's development positioning.
2. To investigate and analyze the current situation of AI competency of teachers in the research school, and identify the existing problems and influencing factors.
3. To construct targeted and operable practical guidelines for the development of teachers' AI competency in Xishan High School of Kunming No.1 High School.
4. To put forward specific implementation paths and safeguard measures for the development guidelines to ensure the effective implementation of the guidelines in the school.

METHODOLOGY

This research adopts a mixed research method combining qualitative and quantitative research, with Xishan High School of Kunming No.1 High School as the research object, and conducts in-depth research on the development of teachers' AI competency through literature research, questionnaire survey, and in-depth interview. The research objects include all the full-time teachers of the school, covering different disciplines, teaching ages, and professional titles, to ensure the comprehensiveness and representativeness of the research samples.

Sub-Section 1: Literature Research

The research team collected and sorted out domestic and foreign literature related to teachers' AI competency, including policy documents issued by the Ministry of Education, UNESCO and other organizations, academic papers published in core journals, monographs on education digitalization and AI education, and research reports on teachers' professional development. Through literature analysis, the core connotation, evaluation dimensions, cultivation paths and existing research deficiencies of teachers' AI competency were clarified, laying a theoretical foundation for the definition of the research framework and the construction of the development guidelines.

Sub-Section 2: Questionnaire Survey

Based on the results of literature research, a questionnaire on the current situation of AI competency of teachers in Xishan High School of Kunming No.1 High School was designed. The questionnaire includes four parts: basic information of teachers (discipline, teaching age, professional title, etc.), AI knowledge cognition, AI teaching application ability, and AI training demand. A total of 200 questionnaires

were distributed in the school, and 189 valid questionnaires were recovered with an effective recovery rate of 94.5%. The statistical software SPSS 26.0 was used to conduct descriptive statistics and cross-analysis on the questionnaire data, to master the overall level of AI competency of the school's teachers and the differences in competency among different groups of teachers.

Sub-Section 3: In-Depth Interview

On the basis of the questionnaire survey, the research team selected 20 teachers from different disciplines, teaching ages and professional titles for in-depth semi-structured interviews, including senior teachers, intermediate teachers, young teachers, and teaching management personnel. The interview content focuses on the difficulties encountered by teachers in the application of AI in teaching, the problems existing in the current AI training of the school, and the specific demands for AI competency development. The interview records were sorted out and coded by using the qualitative research method, and the deep-seated problems and realistic demands of the school's teachers' AI competency development were summarized, providing practical basis for the construction of the development guidelines.

RESULTS

Current Situation of Teachers' AI Competency in Xishan High School of Kunming No.1 High School

The statistical analysis of the questionnaire and interview results shows that the overall AI competency of teachers in Xishan High School of Kunming No.1 High School is at a medium level, and there are obvious differences in competency levels among different groups of teachers, showing the characteristics of "uneven development". In terms of AI knowledge cognition, most teachers have a preliminary understanding of basic AI concepts such as big data and intelligent teaching platforms, but the mastery of professional AI knowledge such as educational data mining and intelligent evaluation is relatively lacking; in terms of AI teaching application ability, teachers are more proficient in the use of basic intelligent teaching tools (such as online homework platforms, intelligent marking tools), but the ability to integrate AI technology with subject teaching design and carry out personalized teaching is insufficient; in terms of AI ethical literacy, most teachers can realize the importance of AI ethical education, but they lack the practical experience and teaching strategies of integrating AI ethics into

subject teaching; in terms of AI research and innovation ability, only a small number of young teachers and key teachers have the awareness and ability to carry out research on AI education application, and most teachers lack the motivation and platform for AI education research.

From the perspective of different groups, young teachers under 35 years old have a higher acceptance of AI technology and better basic AI competency, while senior teachers over 50 years old have relatively weak AI operation ability due to age and technical foundation; teachers of science and engineering disciplines (such as mathematics, physics, chemistry) have a higher application frequency of AI teaching tools than teachers of liberal arts disciplines (such as Chinese, history, politics), and their integration ability of AI and subject teaching is relatively stronger; key teachers and teaching backbones have more opportunities to participate in AI training and research activities, and their AI competency is significantly higher than that of ordinary teachers.

Main Problems in the Development of Teachers' AI Competency

Combined with the research results, the main problems existing in the development of teachers' AI competency in Xishan High School of Kunming No.1 High School are summarized as follows: First, the lack of a school-based AI competency evaluation system and clear competency standards, leading to teachers' unclear development goals of AI competency. Second, the current AI training system is not perfect, the training content is divorced from the actual teaching needs, the training mode is single, and the pertinence and effectiveness of the training are insufficient. Third, the school's intelligent teaching environment and resource support are not perfect, the integration of AI technology and subject curriculum is not deep enough, and teachers lack the practical platform for AI teaching application. Fourth, there is no perfect incentive mechanism and professional development system, the enthusiasm of teachers to learn and apply AI technology is not high, and the construction of AI teaching research teams is lagging behind. Fifth, the regional resource advantages of southwest China are not fully utilized, and the school lacks in-depth cooperation with local universities, scientific research institutions and AI enterprises in the field of AI education.

Demand of Teachers for AI Competency Development

The interview results show that the school's teachers have strong practical demands for AI competency development, and the main demands are concentrated in the following aspects: First, the training content should be closely combined with subject teaching, and more school-based and practical AI teaching skills training should be provided, such as personalized teaching design based on intelligent teaching platforms, educational data analysis and application, etc. Second, the training mode should be diversified, combining offline centralized training with online on-demand learning, and increasing practical teaching and peer exchange activities. Third, the school should strengthen the construction of intelligent teaching resources and platforms, provide more convenient AI teaching tools and resource support, and build a platform for teachers' AI teaching exchange and research. Fourth, the school should establish a sound incentive mechanism, encourage teachers to carry out AI teaching reform and research, and recognize and reward teachers who have made outstanding achievements in AI teaching application.

CONCLUSION AND FUTURE WORK

Conclusion

This paper takes Xishan High School of Kunming No.1 High School as the research object, clarifies the core connotation and evaluation dimensions of high school teachers' AI competency (AI

knowledge cognition, teaching application ability, ethical literacy, research and innovation ability) through literature research, and masters the current situation, main problems and development demands of the school's teachers' AI competency through questionnaire survey and in-depth interview. On this basis, the paper constructs a set of targeted and operable practical guidelines for the development of teachers' AI competency in the school, which is summarized as the "four-in-one" development system: curriculum system construction, training mode innovation, teaching practice integration, and incentive mechanism improvement.

The core conclusions of the research are as follows: First, the AI competency of teachers in Xishan High School of Kunming No.1 High School is at a medium level on the whole, with obvious group differences, and the practical application ability and research innovation ability are the weak links of teachers' AI competency. Second, the main factors restricting the development of teachers' AI competency in the school include the lack of clear competency standards, imperfect training system, insufficient resource support, and imperfect incentive mechanism. Third, the development of teachers' AI competency must adhere to the school-based principle, closely combine with the characteristics of high school education and the actual teaching needs of the school, and construct a multi-dimensional, systematic and hierarchical development system. Fourth, the development of teachers' AI competency needs the joint efforts of the school, teachers, local universities and social institutions, and the integration of policy support, resource guarantee, training practice and incentive guidance.

The development guidelines constructed in this paper have important practical significance for Xishan High School of Kunming No.1 High School to improve teachers' AI competency and promote the construction of education digitalization. The guidelines not only clarify the development goals and core content of teachers' AI competency, but also put forward specific implementation paths and safeguard measures, which can provide a clear direction for the school's teacher professional development and AI education reform. At the same time, the research results also have certain reference significance for the development of teachers' AI competency in similar key high schools in southwest China, especially in ethnic minority areas, and provide a practical reference for the integration of AI technology and basic education in southwest China.

Future Work

Although this paper constructs the development guidelines for teachers' AI competency in Xishan High School of Kunming No.1 High School, there are still some deficiencies in the research, and the follow-up research can be further expanded and deepened in the following aspects: First, in terms of research scope, the follow-up research can expand the research object to more high schools in Kunming and even Yunnan Province, and carry out a comparative study of teachers' AI competency in different types of high schools, to further improve the universality of the development guidelines. Second, in terms of research methods, the follow-up research can add experimental research methods, select part of the teachers of the school to carry out experimental teaching based on the development guidelines, and verify the effectiveness and operability of the guidelines through the comparison of experimental results. Third, in terms of research content, the follow-up research can further construct a quantitative evaluation index system of teachers' AI competency, and carry out dynamic evaluation and tracking research on the development of teachers' AI competency in the school. Fourth, in terms of practical application, the follow-up research can cooperate with Xishan High School of Kunming No.1 High School to carry out the pilot implementation of the development guidelines, and adjust and optimize the guidelines according to the actual implementation effect, to form a more perfect and operable school-based AI competency development system.

In the future, with the continuous deepening of education digitalization construction, the cultivation of teachers' AI competency will become a long-term and arduous task for schools. Xishan High School of Kunming No.1 High School should take the development guidelines as the basis, combine with the school's development plan, continuously improve the teachers' AI competency development system, strengthen the integration of AI technology and subject teaching, and strive to cultivate a group of high-quality teachers with strong AI competency, so as to provide strong talent support for the high-quality development of the school and the cultivation of students' digital literacy and innovative ability.

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ENHANCEMENT OF TEACHERS' DIGITAL LITERACY IN THE TRANSFORMATION OF EDUCATIONAL MANAGEMENT OF MINGDE SENIOR HIGH SCHOOL IN KAILI CITY

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ABSTRACT

This study examines the current state of digital literacy among teachers at Mingde High School in Kaili City, Guizhou Province, China, and its influencing factors, against the backdrop of educational management transformation. Employing a mixed-methods design combining quantitative questionnaires and qualitative in-depth interviews, data were collected from 310 teachers and administrators across three comparable high schools. The study focuses on five core dimensions: Digital Basic skills, Digital teaching integration ability, Digital educational management ability, Digital development attitudes and willingness, and Support conditions and development needs.

The research findings reveal a structural characteristic: while teachers' overall digital literacy remains at a moderate level, it exhibits significant differentiation—high attitudes, moderate capabilities, and low support. Further analysis indicates that personal factors such as gender, age, and years of teaching experience significantly influence the development of teachers' digital literacy, with middle-aged teachers aged 36-45 facing particularly pronounced challenges. Based on a theoretical framework driven by management transformation—capability development response—mechanism optimization feedback, this study proposes targeted improvement strategies from a management reform perspective.

Keywords: Digital literacy; Educational management transformation; High school teachers; Mixed research methods; Education in ethnic regions

INTRODUCTION

The digital transformation of education has become a global trend, profoundly influencing the reform and development of educational systems worldwide. China's national strategy document, 'Education Modernization 2035,' explicitly calls for accelerating educational reform in the information age and building a digital, personalized lifelong learning system. The report of the 20th National Congress of the Communist Party of China further designated advancing education digitization as a key strategic task. Against this macro-policy backdrop, teachers—as the core agents of educational

transformation—play a pivotal role, with their digital literacy levels directly impacting the effectiveness of education's digital transformation.

However, current research exhibits two distinct limitations. First, most studies focus on developed regions and high-performing schools, with significantly less attention given to county-level high schools in underdeveloped ethnic areas. Second, existing research predominantly treats digital literacy as an individual teacher competency, rarely examining it from the holistic perspective of school management system transformation. This research orientation overlooks a critical fact: the development of teachers' digital literacy is profoundly influenced by management factors such as school support conditions, training mechanisms, organizational culture, and evaluation orientations.

Mingde High School, located in Kaili City—the capital of Qiandongnan Miao and Dong Autonomous Prefecture—vividly illustrates the typical challenges faced by high schools in underdeveloped ethnic minority regions. Like schools across the province, it grapples with inadequate infrastructure, limited training resources, and cultural adaptation difficulties. This study uses the school as a primary case to fill existing research gaps, systematically examining the current state of teachers' digital literacy, influencing factors, and pathways for improvement from the perspective of educational management transformation.

OBJECTIVES

Based on the aforementioned theoretical framework, this study establishes two core objectives:

- 1: To study the level of digital literacy among teachers at Mingde Senior High School in Kaili City.
- 2: To study Teachers' Digital Literacy classify by Personal Factors.

METHODOLOGY

3.1 Research Design

This study employs a mixed-methods approach, specifically an interpretive sequential design. The first phase employed quantitative methods (questionnaire surveys) to collect measurable data, describing the current state of teachers' digital literacy and analyzing disparities among different groups. The second phase utilized qualitative methods (in-depth interviews) to interpret quantitative findings, exploring underlying causes and mechanisms behind the data.

RESULT

4.1 Overall Status of Teachers' Digital Literacy

Regarding Research Objective 1, which investigates the current level of digital literacy among teachers at Mingde Middle School in Kaili City, the questionnaire survey results indicate that teachers' overall digital literacy is at a moderate level. More significantly, the scores across the five dimensions

reveal a pronounced structural divergence, highlighting the core contradictions in the development of teachers' digital literacy.

Table 1 Analysis of Mean and Standard Deviation of Teachers' Digital Literacy Dimensions (n=310)

Dimensions	$\bar{x}$	S.D.	Interpretation
1. Digital Basic Skills	3.59	0.70	Moderate Level
2. Digital Teaching Integration Ability	3.44	0.73	Moderate Level
3. Digital Educational Management Ability	3.51	0.69	Moderate Level
4. Digital Development Attitude and Willingness	3.85	0.64	High Level
5. Support Conditions, Difficulties and Development Needs	3.31	0.45	Moderate Level
Total	3.54	0.57	Moderate Level

Note: Interpretation criteria: 1.00-2.33 = Low Level; 2.34-3.66 = Moderate Level; 3.67-5.00 = High Level

A fundamental pattern characterized by leading attitudes and moderate capabilities. Among the five dimensions, digital development attitudes and willingness scored highest ($\bar{x}$ =3.85) and reached a high level—the only dimension achieving this distinction. This finding indicates that the teaching community holds a positive and affirming attitude toward digital development, widely recognizing the significant value of digital literacy for teaching and professional growth.

All three competency dimensions scored at an intermediate level. The scores for digital foundational skills ($\bar{x}$ =3.59), digital educational management capabilities ($\bar{x}$ =3.51), and digital teaching integration abilities ($\bar{x}$ =3.44) were comparable, all falling within the intermediate range. Teaching integration abilities received the lowest score, reflecting significant challenges teachers face in deeply integrating digital technologies with subject-specific instruction.

The Support Conditions dimension scored the lowest ($\bar{x}$ =3.31), revealing management shortcomings. Among reverse-scored barrier items, "complex operation of digital tools" received the lowest score, while "insufficient learning time due to excessive workload" exhibited the highest standard deviation. These findings suggest that the primary constraints to enhancing teachers' digital literacy stem not from attitudes or willingness, but from management-level issues.

The pathway from willingness to capability is blocked. This study identifies the core contradiction: while teachers demonstrate strong willingness to develop, the conversion of this willingness into capability is constrained by insufficient support conditions, resulting in a structural imbalance characterized by *high attitude, moderate capability, and low support*.

4.2 Analysis of the Influence of Personal Factors

To address Research Objective 2, which explores individual factors influencing the development of teachers' digital literacy, this study focused on analyzing the impact of three variables—gender, age, and years of teaching experience—to identify key groups requiring capacity development.

Table 2 Influence of Personal Factors on Teachers' Digital Literacy

Variable	Group	N	Dim1	Dim2	Dim3	Dim4	Dim5	Total	Statistic	p
Gender	Male	73	3.84	3.67	3.72	3.92	3.43	3.72	t=3.092	.002**
	Female	237	3.51	3.38	3.45	3.83	3.27	3.49		
Age	≤25	22	3.91	3.79	3.88	4.01	3.45	3.80	F=11.750	<.001***
	26-35	64	3.98	3.82	3.94	4.03	3.47	3.85		
	36-45	156	3.40	3.27	3.31	3.77	3.22	3.40		
	46-55	49	3.37	3.25	3.34	3.78	3.30	3.41		
	≥56	19	3.98	3.70	3.71	3.92	3.39	3.74		
Teaching	≤5 yrs	50	3.97	3.83	3.92	4.05	3.47	3.85	F=18.088	<.001***
Experience	6-10 yrs	53	3.74	3.59	3.75	3.96	3.35	3.68		
	11-20 yrs	166	3.34	3.22	3.25	3.70	3.20	3.34		
	≥21 yrs	41	3.91	3.69	3.76	4.11	3.51	3.79		

*Note: Dim1=Digital Basic Skills; Dim2=Digital Teaching Integration Ability; Dim3=Digital Educational Management Ability; Dim4=Digital Development Attitude and Willingness; Dim5=Support Conditions and Development Needs. *p<.05, **p<.01, ***p<.001*

Gender Differences: Male teachers scored higher overall, but no difference was found in attitudes. Independent samples t-tests revealed that male teachers scored significantly higher than female teachers on overall digital literacy and most dimensions (t=3.092, p=.002). This difference was most pronounced in the foundational skills dimension. Notably, the attitudes and willingness dimension was the only one where no significant gender difference was observed, suggesting that bridging the gender gap hinges not on altering attitudes, but on creating better learning conditions for female teachers.

Age Differences: Mid-career teachers face the greatest challenges. Single-factor ANOVA revealed significant age-related differences across all dimensions (F=11.750, p<.001). Notably, these differences exhibited a nonlinear pattern: younger teachers aged 26-35 and senior teachers aged 56 and above scored higher, while mid-career teachers aged 36-45 consistently scored lowest. This distribution—high at both ends and low in the middle—challenges the conventional perception that technical competence declines with age. Interview findings reveal that mid-career teachers are at the peak of their professional workload, juggling heavy teaching responsibilities and family obligations.

Teaching Experience Gap: The 11-20 year group represents a capability gap. The distribution mirrors age patterns ($F=18.088$, $p<.001$), showing higher scores at both ends and lower scores in the middle. The group with 11-20 years of teaching experience—the largest cohort at this school, comprising over half of the sample—scored lowest across all dimensions, representing a “capability valley.” Without effectively addressing the challenges faced by this cohort, the school’s overall digital literacy level will struggle to improve.

Implications for Managing Group Differences: This study identifies three key groups for competency enhancement: middle-aged core teachers aged 36-45 or with 11-20 years of teaching experience, female teachers, and teachers with heavy workloads. These groups share common characteristics: they possess positive attitudes but lack sufficient time and energy, facing a dilemma of *good intentions but limited capacity*.

4.3 Interview Findings: In-Depth Interpretation of Quantitative Results

In-depth interviews with five teachers corroborated and deepened the findings of the quantitative research. At the competency development level, young teachers demonstrate stronger digital tool proficiency, while middle-aged teachers cite time constraints as the primary obstacle. One veteran educator candidly remarked: “I want to learn, but managing daily teaching and classroom duties already leaves me overwhelmed—there’s simply no uninterrupted time to master new skills.”

At the management support level, interviews revealed several systemic issues: fragmented management platforms necessitate duplicate data entry; digitally-based professional development activities are perceived as overly formalistic; technical support responses are insufficiently timely. At the developmental needs level, teachers expressed clear expectations for targeted training closely integrated with subject teaching, expert guidance, inter-school exchanges, and AI application training.

Figure 1 Teachers' Digital Literacy Status: Structural Divergence Analysis

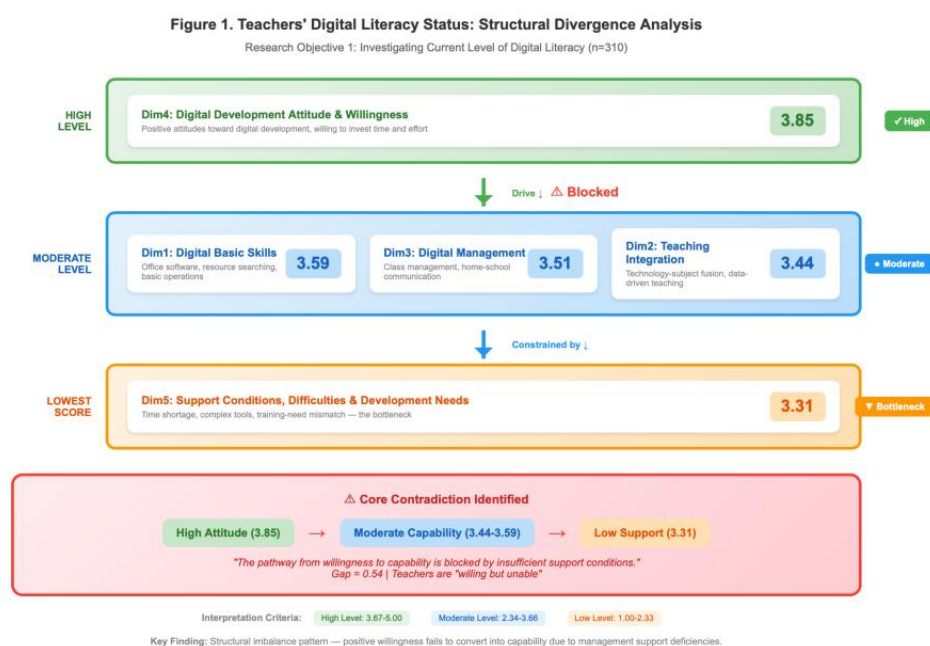
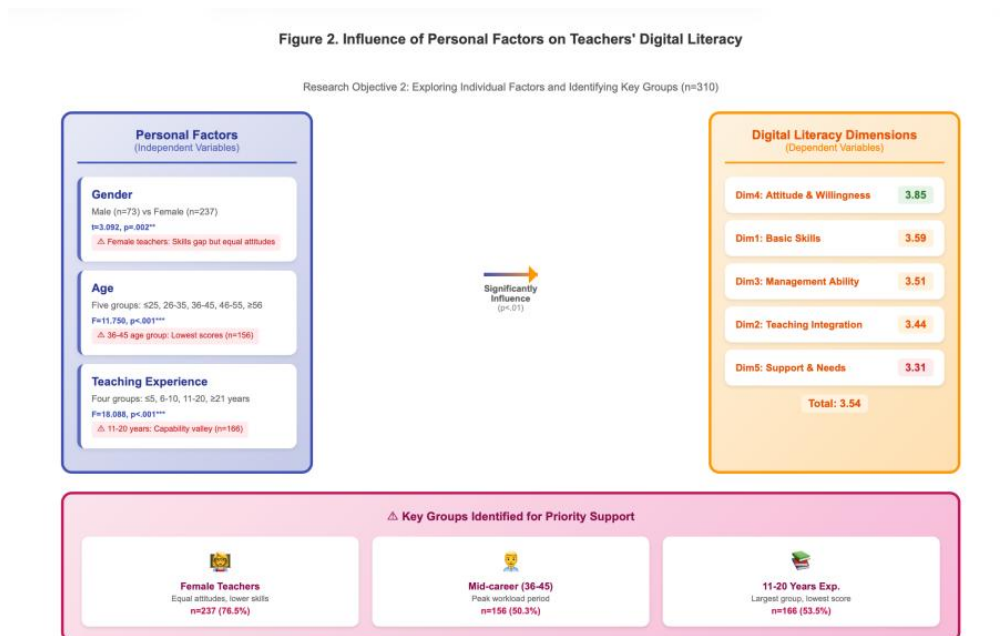


Figure 2 Influence of Personal Factors on Teachers' Digital Literacy



CONCLUSIONS AND RECOMMENDATIONS

5.1 Research Conclusions

This study validates the theoretical framework of management transformation as a driver, capability development as a response, and mechanism optimization as a feedback loop. The main conclusions are as follows:

First, teachers' digital literacy exhibits a structural imbalance characterized by high motivation, moderate competency, and low support. The primary factor constraining improvement is not lack of motivation but deficiencies in management mechanisms that block the pathway from intent to capability.

Second, the four elements of management transformation impact teacher competency development through distinct pathways. While hardware support is adequate, software conditions—including network stability, technical support responsiveness, and training quality—remain suboptimal.

Third, gender, age, and years of teaching experience significantly influence teachers' digital literacy, with middle-aged teachers aged 36-45 or those with 11-20 years of experience facing the most pronounced challenges. These group disparities stem from career development pressures and necessitate resolution through optimized management mechanisms.

5.2 Policy Recommendations

At the policy level: Regional education authorities should develop multi-year action plans for enhancing teachers' digital literacy, establish tiered competency standards across disciplines, and integrate digital literacy into the overall framework of teacher professional development.

At the training system level: Differentiated training strategies should be implemented, with a focus on covering the middle-aged teacher cohort aged 36-45. Training content must closely align with subject teaching needs, employing contextualized and hands-on training methods with flexible formats including microlearning resources.

At the support and assurance level: Priority should be given to integrating management platforms to reduce workload from duplicate data entry. A rapid-response technical support mechanism should be established, and teachers' working hours should be reasonably allocated to create conditions conducive to learning.

At the school management level: Digital literacy metrics should be integrated into teacher performance evaluations. A peer support mechanism should be established to leverage young faculty's technological expertise and senior teachers' pedagogical experience, fostering complementary strengths across generations.

At the individual teacher level: Support should be provided for educators to develop personal digital growth plans, encouraging participation in peer collaboration communities and inter-school exchange activities. Help teachers recognize that digital literacy is learnable and improvable, thereby enhancing their self-efficacy.

5.3 Research Contributions and Limitations

The theoretical contribution of this study lies in transcending the limitation of viewing digital literacy solely as an individual competency issue. It constructs an analytical framework driven by management transformation, responding through competency development, and optimized by mechanism feedback. The practical contribution provides empirical guidance for county-level high schools in underdeveloped ethnic regions. Research Limitations: This study employs a cross-sectional design. Subsequent research should adopt a longitudinal design to trace competency development trajectories and extend comparative analysis to more schools in similar regions.

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THE GUIDELINE FOR DEVELOPING PERSONNEL ADMINISTRATION STRATEGIES FOR SCHOOL ADMINISTRATORS OF THE GUANDU EXPERIMENTAL SCHOOL AFFILIATED TO SHANGHAI NORMAL UNIVERSITY

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ABSTRACT

This study investigates the current status, core challenges, and optimization strategies of personnel management in private schools from an educational management perspective. A mixed-methods approach was adopted, using a case study of Shanghai Normal University Guandu Affiliated Experimental School. Quantitative data were collected through 165 valid teacher questionnaires, while qualitative data were obtained through in-depth interviews with school administrators and analysis of institutional documents.

The findings reveal significant challenges in the school's personnel management: an imbalanced teacher structure with high turnover rates among core faculty; an ineffective compensation system lacking external competitiveness and internal equity; a misaligned performance evaluation system overly focused on explicit metrics; a weak and unsystematic teacher training and development program; and outdated, inefficient management processes. The root causes are identified as a combination of external institutional constraints and internal managerial deficits, particularly a traditional 'cost-control' mindset.

Based on these findings, this study proposes a systematic, five-dimensional optimization framework: establishing a strategic, 'human capital'-centered management philosophy; building a fair and competitive compensation and development-oriented performance system; innovating a full-cycle talent management mechanism; developing an integrated digital personnel management platform; and actively fostering a supportive internal and external development ecosystem. These measures aim to enhance teacher stability and core competitiveness in private schools.

Keywords: Educational Management, Personnel Administration, Private Schools, Teacher Motivation, Human Resource Strategy

INTRODUCTION

Private education has become a significant force in diversifying and enhancing the quality of the education sector in China. Guided by national policies, private schools have expanded rapidly, forming a complementary relationship with public schools. However, this rapid expansion has been

accompanied by increasingly prominent, deep-seated issues in personnel management, which now constitute a bottleneck constraining sustainable development and core competitiveness. Common challenges across the private education sector include imbalanced teacher structures, persistently high talent turnover rates, imperfect salary incentive mechanisms, ambiguous career development paths, and inadequate implementation of personnel agency systems (Zhou & Liu, 2017). These intertwined issues not only affect the stability and motivation of the teaching staff but also constrain the improvement of educational quality and brand image.

Shanghai Normal University Guandu Affiliated Experimental School, a private K-12 institution leveraging university resources, serves as a representative case. While sharing the common characteristics of private schools, its personnel management situation is also shaped by its unique educational positioning and cooperative school-running model. The school faces practical difficulties in teacher recruitment, retaining core talent, and ensuring the effectiveness of incentive mechanisms. Its explorations and challenges in this domain are highly reflective of the broader industry.

From an educational management perspective, personnel management in schools should be a strategic, systematic process encompassing planning, recruitment, training, compensation, performance evaluation, and employee relations. However, coordination among these elements is often insufficient. School administrators, who act as both formulators and executors of these strategies, play a pivotal role. Their management philosophy and strategic choices directly impact the effectiveness of the entire system. While existing research has explored teacher satisfaction and turnover, there is a notable gap in systematic analyses focusing on the managerial role and the strategic construction of personnel systems within specific school contexts.

Therefore, this study aims to take this school as a specific case, using field research and in-depth analysis to clarify the core dilemmas faced by administrators and the underlying causes. It seeks to construct a systematic, scientific, and actionable personnel management strategy system tailored to the development needs of private schools, thereby providing practical references for solving common industry problems and enriching the theoretical discourse on educational management in the private sector.

Theoretical Framework

This study integrates classical management and educational management theories to construct a comprehensive analytical framework for understanding personnel management in private schools.

Human Capital Theory: This theory posits that education, training, and development are investments that enhance individual productivity and yield long-term returns (Becker, 1964). Applying this to private schools encourages a shift from viewing teachers as a 'cost' to be minimized, towards seeing them as 'capital' to be invested in, thereby supporting long-term development and motivation.

Motivation Theory: Theories such as Herzberg's Two-Factor Theory (Herzberg, 1959) are essential for analyzing incentive mechanisms. They distinguish between 'hygiene factors' (e.g., salary, working conditions) that prevent dissatisfaction and 'motivators' (e.g., achievement, recognition, growth) that truly drive engagement and satisfaction. This highlights the need for a balanced approach to teacher incentives.

Organizational Behavior Theory: This perspective emphasizes the profound influence of leadership styles, organizational culture, and communication mechanisms on member behavior (Robbins

& Judge, 2019). It provides a lens for analyzing how administrators' strategic choices shape the work environment, teacher participation, and ultimately, organizational commitment and stability.

Based on these theories and the diagnostic analysis of the case school, four analytical dimensions were developed for this study:

1. Teacher Team Stability and Structure: Examining turnover rates, demographic composition, and factors influencing teacher retention.

2. Compensation and Incentive System Effectiveness: Assessing external competitiveness, internal equity, and the diversity of incentive methods.

3. Performance Evaluation and Management Orientation: Analyzing the fairness, feedback mechanisms, and developmental focus of the appraisal system.

4. Training, Development, and Management Support Systems: Evaluating the relevance of training, clarity of career paths, and efficiency of management processes.

OBJECTIVE

1. To study the level of personnel administration for school administrators of Theguandu experimental school affiliated to Shanghai normal university.
2. To propose the guideline for developing personnel administration strategies for school administrators of Theguandu experimental school affiliated to Shanghai normal university.

METHODOLOGY

This study adopted a mixed- methods design, using a case study approach. The research was conducted at Shanghai Normal University Guandu Affiliated Experimental School. The population consisted of its full-time teachers. Based on Krejcie and Morgan's (1970) sampling table, a sample of 165 teachers was determined from a total population of 286, and questionnaires were distributed accordingly. In addition, purposive sampling was used to select three school-level administrators and HR staff for in-depth, semi- structured interviews. Data were also collected from the school's personnel archives and turnover data from 2020-2023.

The questionnaire included two parts: demographic information and perceptions of personnel management strategies across the four analytical dimensions. Data were analyzed using descriptive statistics, including frequency, percentage, mean, and standard deviation. A five- point Likert scale was applied. Qualitative data from interviews and document analysis were analyzed using content analysis to support and deepen the quantitative findings.

RESULTS

Profile of Respondents and School Context

The teacher sample (n=165) was predominantly young and middle-aged, with 72.73% under 45 years old. The majority held Bachelor's (68.2%) or Master's (31.1%) degrees, and teaching experience was largely concentrated in the 1-10 year range, indicating a staff with development potential. However, the school's personnel management system showed significant lag relative to its strategic needs, as summarized in the following tables.

Table 1
Summary of Core Problems in the Case School's Personnel Management

Problem Dimension	Specific Manifestations	Key Data / Evidence
1. Poor Team Stability	• Explicit Turnover: High rate, primarily among young and core teachers.	Annual turnover rate ~18%; 65% of leavers under 35; 40% held first-level titles or higher.
	• Hidden Turnover: Teachers mentally disengaged, considering leaving.	32% "consider leaving"; 25% engage in part-time work.
2. Ineffective Compensation Incentives	• Weak External Competitiveness: Salaries lag behind local public schools.	Avg. teacher income (120-150k RMB) vs. public school peers (180-220k RMB).
	• Internal Inequity: "Unequal pay for equal work" between contract types; poor incentives for non-quantifiable tasks.	Homeroom teacher allowance (1,300 RMB/month) seen as low cost-effectiveness.
	• Limited Incentive Methods: Heavy reliance on monetary rewards, few non-material incentives.	"Outstanding Teacher" awards consistently go to a few senior teachers.
3. Misaligned Performance Evaluation	• Emphasis on Explicit Over Implicit Metrics: Over-reliance on student evaluations, leading to "pleasing" teaching styles.	Student evaluations account for 40% of appraisal.

Problem Dimension	Specific Manifestations	Key Data / Evidence
	• Formalistic Process & Lack of Feedback: Results lack constructive feedback for improvement.	Results simplified to "Excellent, Qualified, or Basically Qualified."
4. Weak Training & Development System	• Mismatch Between Supply & Demand: Top-down training disconnected from teacher needs.	Insufficient training on classroom management, parent communication.
	• Scarcity of High-Level Opportunities: Limited and non-transparent assignment of external training.	Teachers encounter a "ceiling" in professional growth.
	• Narrow Career Pathways: The peak for most teachers is "Senior Teacher."	Weak link between professional titles and compensation.
5. Traditional Management Methods	• Heavy Administrative Workload: HR department overwhelmed with routine tasks.	3 HR staff handle payroll, social security, files, leaving no time for strategic work.
	• Information Silos & Inefficient Processes: Data scattered across departments; paper-based approvals are time-consuming.	Teacher satisfaction with management processes is low.

Overall Evaluation of Personnel Management Strategies

Table 2

**Overall Mean and Standard Deviation of Personnel Management Strategy Dimensions
(n=165)**

Dimension	Mean ($\bar{x}$)	S.D.	Interpretation
1. Teacher Recruitment and Post Allocation	3.42	0.74	Moderate

Dimension	Mean ($\bar{x}$)	S.D.	Interpretation
2. Salary and Incentive Mechanism	3.28	0.81	Moderate
3. Performance Appraisal and Evaluation Mechanism	3.51	0.76	High
4. Teacher Training and Career Development Support	3.47	0.79	Moderate
5. Fairness and Transparency of Personnel Management System	3.33	0.83	Moderate
Overall	3.40	0.79	Moderate

As indicated in Table 2, the overall evaluation of the school's personnel management strategies was at a moderate level ($M = 3.40$). This suggests a systematic framework exists, but its incentive effectiveness and teachers' perceived benefits require significant enhancement.

Detailed Analysis of Key Dimensions

Compensation and Incentive System Effectiveness: This dimension scored relatively low ($M=3.28$). Specific item analysis (Table 3) shows that "Salary level is externally competitive" scored lowest ($M=3.21$), confirming the quantitative data on salary gaps. Teachers perceive shortcomings in both the competitiveness and the fairness of the incentive structure, which directly impacts career stability.

2. Performance Evaluation and Management Orientation: This dimension scored highest ($M=3.51$). The item "Performance appraisal standards are clear and fairly implemented" was rated highly ($M=3.54$). This suggests teachers recognize the procedural clarity. However, qualitative interviews revealed a significant gap between this clarity and the system's orientation. Teachers feel the evaluation, while clear, is a one-sided "judgment" that lacks constructive feedback and fails to capture their full contribution (e.g., "It offers no help in guiding me on how to teach better").

3. Training, Development, and Management Support: While "The school values teacher training" scored relatively well ($M=3.50$), the item "Clear career development paths are provided" scored lower ($M=3.44$). This, combined with interview data, reveals a system that provides training but fails to connect it to a coherent, long-term career ladder, leaving teachers feeling their growth has a "ceiling." Furthermore, items related to system transparency ($M=3.32$) and teacher participation in decision-making ($M=3.29$) were among the lowest, reflecting a top-down, traditional management culture that limits empowerment and buy-in.

4. Teacher Team Stability: Quantitative data from school records (Table 4) shows a persistently high turnover rate (approx. 18% annually) with a worrying loss of core faculty. The questionnaire data on hidden turnover (32% considering leaving) and the low scores on professional identity from interviews (63.5% lack long-term commitment) confirm that the school is struggling to retain its talent, validating that the issues in the other dimensions are having a real, negative impact.

Table 3
Mean and Standard Deviation of Key Personnel Management Items (Selected, n=165)

Item	Mean ($\bar{x}$)	S.D.	Interpretation
Salary level is externally competitive	3.21	0.84	Moderate
Salary distribution reflects merit-based incentives	3.35	0.79	Moderate
Performance appraisal standards are clear and fairly implemented	3.54	0.74	High
The school values teacher training and continuing education	3.50	0.78	High
Clear career development paths are provided	3.44	0.80	Moderate
Personnel management system is open and transparent	3.32	0.83	Moderate
Teachers have opportunities to participate in personnel decisions	3.29	0.85	Moderate

Table 4
Tracking of Key Management Variables (2020-2023)

Year	Annual Teacher Turnover Rate	Core Teacher Retention Rate	Avg. Salary Competitiveness Index
2020	17.2%	68.5%	0.72
2021	18.5%	65.3%	0.69
2022	19.1%	63.7%	0.71
2023	17.8%	66.2%	0.75

CONCLUSION AND FUTURE WORK

Based on the perspective of educational management, this study takes Shanghai Normal University Guandu Affiliated Experimental School as a case study to systematically explore the current situation, problems, and causes of personnel management in private schools. By adopting a mixed research method combining a questionnaire survey (165 valid samples) and in-depth interviews, the core research conclusions are as follows:

Established Framework but Lagging Incentive Effectiveness: The case school has established a systematic personnel management framework, particularly demonstrating strengths in the procedural clarity of performance appraisal ($M=3.51$) and initial support for teacher training ($M=3.50$). However, the overall moderate evaluation ($M=3.40$) masks significant deficiencies in incentive effectiveness and teacher perceived gain. The school's "cost-control" oriented management philosophy has resulted in a system that prioritizes standardization over genuine motivation and development.

Structural Deficiencies in Key Personnel Subsystems: The study identified critical weaknesses across all core HR functions. The compensation system lacks both external competitiveness and internal equity, leading to "equal work, unequal pay" and high turnover. The performance evaluation, while clear, is misaligned, overemphasizing explicit metrics like student grades and lacking constructive feedback, making it a tool for judgment rather than development. The training and development system suffers from a top-down, "one-size-fits-all" approach, disconnected from teachers' actual needs, and provides no clear, long-term career pathways, leading to a "ceiling effect" on professional growth. Finally, management processes are outdated and inefficient, with severe underutilization of information technology, leaving the HR department mired in administrative tasks and unable to perform strategic functions.

Multidimensional Causes Rooted in External and Internal Factors: The problems are not isolated but stem from a complex interplay of factors. Externally, institutional constraints (policy gaps in social security and professional title evaluation compared to public schools) and societal biases ("private is inferior to public") create a disadvantageous environment. Internally, an outdated management philosophy that views teachers as a "cost" rather than "capital," a lack of strategic human resource planning, and weak institutional development and execution are the primary drivers. This combination creates a vicious cycle of "inability to attract, develop, and retain talent."

Based on these findings, this study proposes a five-in-one optimization strategy framework. Private school administrators must shift from an "administrative and transactional" to a "strategic and empowering" management approach. This involves:

1. Vision-Driven: Adopting a "human capital" philosophy and transforming the HR department into a strategic partner.

2. Institution-Based: Building a competitive and equitable compensation system and a development-oriented performance management system with robust feedback mechanisms.

3. Mechanism-Empowered: Innovating full-cycle talent management, including optimizing recruitment, standardizing personnel agency systems, and designing clear dual-channel career development paths (teaching-focused and management-focused) to foster teacher belonging and growth.

4. **Technology-Supported:** Developing an integrated digital personnel management platform to automate routine tasks, enable data-driven decision-making, and enhance efficiency.

5. **Environment-Synergized:** Actively seeking external policy support and strengthening brand building to create a supportive ecosystem and counter negative societal perceptions.

By synergizing these five dimensions, private schools can move beyond piecemeal fixes to fundamentally address core personnel challenges, stabilize their teaching workforce, enhance core competitiveness, and drive high-quality, sustainable development.

Future Research Directions

This study provides an in-depth exploration of personnel management in a single private school, but several avenues for future research remain.

1. Conduct Multi-Case Comparative Research: This study is limited by its single-case design, which constrains the generalizability of its findings. Future research should include comparative studies across different types of private schools (e.g., for-profit vs. non-profit, vocational vs. academic, newly established vs. long-established) and in different regions. This would help to identify which challenges are universal and which are context-specific, leading to more nuanced and adaptable strategy frameworks.

2. Quantitatively Test the Impact Mechanism of Management Strategies: While this study identified key problem dimensions, it did not quantitatively model the causal relationships between them and teacher outcomes. Future research could use structural equation modeling to test a theoretical framework exploring how "compensation fairness," "performance evaluation orientation," and "developmental support" directly and indirectly affect "teacher turnover intention" and "organizational commitment." This would provide empirical evidence for the most impactful leverage points for intervention.

3. In-Depth Exploration of the Role of Organizational Culture: Qualitative findings in this study pointed to the importance of "humanistic care" and a "sense of participation." Future research could delve deeper into the specific mechanisms of organizational culture in private schools. How does a "high-commitment" vs. "control-oriented" culture moderate the effects of formal HR systems? Action research could be used to co-design and implement cultural interventions (e.g., creating democratic participation platforms) with school administrators and track their impact on teacher engagement and retention.

4. Investigate the Long-Term Impact of Digital Transformation: The proposed strategy framework includes a digital platform, but its long-term effects are unknown. A longitudinal study could track the implementation of a new personnel management information system in a private school, measuring its impact on HR staff efficiency, data-driven decision-making, and teacher satisfaction with administrative processes over a period of 2-3 years. This would provide valuable evidence for the return on investment in educational technology for HR functions.

5. Conduct Research on the "Personnel Agency" Model: The recommendation to implement a standardized personnel agency system to bridge the gap with public school teachers is significant. Future research could specifically investigate schools that have successfully implemented such a system. Case studies could document the implementation process, the challenges faced (e.g., costs, cooperation

with government agencies), and the actual impact on teacher identity, job security, and turnover rates compared to schools that have not adopted this model.

The healthy development of private education relies on a stable, motivated, and high-quality teaching workforce. This study has highlighted the critical role of strategic, human-centered personnel management in achieving this goal. By continuing to explore these issues through rigorous research, the field can move closer to overcoming current practical bottlenecks and achieving the symbiotic development of teachers and schools, ultimately contributing to the high-quality and sustainable development of the private education sector as a whole.

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TARITIFICIAL INTELLIGENCE MANAGEMENT AND ITS APPLICATION OF DALI UNIVERSITY IN YUNNAN PROVINCE

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ABSTRACT

The rapid integration of artificial intelligence (AI) into higher education has significantly transformed university governance and administrative management. While much existing research focuses on AI applications in teaching and learning, less attention has been paid to AI management in non-teaching administrative domains. This study examines the current status of AI management and its application in administrative work at Dali University in Yunnan Province, China.

The research adopts a quantitative approach supported by semi-structured interviews. The research population consists of 1,100 full-time teachers at Dali University. Using the Krejcie and Morgan (1970) sample size determination method at a 95% confidence level and 5% margin of error, 285 valid questionnaire responses were collected. The survey instrument measures AI application in administrative efficiency, data governance, decision-support systems, human resource management, and institutional coordination. In addition, purposive sampling was employed to select five representative interviewees, including a college dean, vice dean, office director, student affairs officer, and head of the teaching and research group, each with more than five years of professional experience.

The findings indicate that AI is primarily applied in administrative workflow automation, data management systems, performance evaluation processes, and student information administration. However, strategic integration, data governance standardization, and cross-departmental coordination remain limited. The study concludes that AI management at Dali University is operationally implemented but strategically underdeveloped. Based on empirical findings, this research proposes institutional guidelines for strengthening AI governance structures, enhancing digital administrative capacity, improving data security frameworks, and promoting long-term strategic alignment. The study contributes to the literature on AI-driven university governance, particularly in regional public institutions in developing contexts.

Keywords: Artificial Intelligence; AI Management; Higher Education Governance; Digital Transformation; Dali University

INTRODUCTION

Artificial intelligence (AI) has rapidly emerged as a transformative force in educational systems worldwide (Luckin et al., 2016). Beyond instruction and learning support, AI's integration into higher education administrative processes promises increased efficiency, optimized decision-making, and improved stakeholder satisfaction (Zawacki-Richter et al., 2019). In the context of public universities in China, where governance structures are complex and resource constraints persist, the strategic application of AI in educational management has attracted increasing institutional and policy attention (Li et al., 2021).

However, while many universities have initiated AI-driven administrative tools—for example, predictive analytics for student retention and automated scheduling systems (Sclater, 2020)—the effectiveness of these applications varies. Many institutions still struggle with unclear implementation pathways, data governance issues, and limited human capacity for AI utilization (Selwyn, 2019). In particular, smaller regional universities such as Dali University have not been extensively studied, leaving a gap in understanding how organizational and external factors influence AI governance in educational management practices.

As a public university located in western China, Dali University faces unique challenges, including limited technological resources, uneven digital literacy levels among faculty, and regional development disparities. Investigating AI management practices in such contexts is academically and practically significant. It allows exploration of how regional public universities adopt AI and how governance mechanisms can be optimized to improve institutional performance.

This study therefore focuses on examining the current status of AI management and its application at Dali University and identifying strategies to strengthen its AI governance capacity.

OBJECTIVE

To study the current status of AI management and its application at Dali University in Yunnan Province.

To propose guidelines for enhancing AI-driven governance and sustainable digital transformation at Dali University, including strategic planning, infrastructure development, faculty training, data governance frameworks, and ethical management mechanisms.

METHODOLOGY

This preliminary survey aimed to lay the groundwork for a subsequent large-scale survey. This study adopts a quantitative research design supplemented by qualitative semi-structured interviews. The focus is strictly on AI applications in university administrative management rather than classroom teaching processes. The research framework draws on digital governance and data-driven decision-making perspectives in higher education (Williamson & Eynon, 2020; Zawacki-Richter et al., 2019). The questionnaire used a 5-point Likert scale, where 1 represents "strongly disagree," 2 represents "somewhat disagree," 3 represents "neutral," 4 represents "somewhat agree," and 5 represents "strongly agree." The survey covered four core dimensions: strategic importance, organizational support, resource investment, and planning implementation, with a total of 11 observation items. Descriptive statistical analysis was used to calculate the mean ($\bar{X}$) and standard deviation (S.D.) of each item, each dimension, and the overall

population to reveal the current status of AI management applications in schools and lay the foundation for future research.

Population and Sample

This study included 1,100 faculty members from the overall sample at Dali University, selecting 285 valid samples. A semi-interview process was used to select five representative faculty members through purposeful sampling, including deans and vice-deans of colleges, office directors, student affairs office staff, and heads of teaching and research groups. All respondents had more than five years of work experience.

RESULTS

Table 1 Current Status of Artificial Intelligence Applications (N=285)

Dimension	Item	Statement	($\bar{X}$)	S.D.
Strategic Importance	A1	School leaders attach great importance to AI application in school management.	3.33	0.47
	A2	AI development has been integrated into the school's long-term plan.	4.33	0.47
	A3	The school has a clear timetable and phased goals for AI application.	2.67	0.47
Organizational Support	A4	The school has a special agency or leading group for AI promotion.	2.67	0.47
	A5	Full-time staff are responsible for AI promotion and management.	3.67	0.47
	A6	Functional departments have clear division and collaboration on AI application.	3.00	0.82
Resource Investment	A7	Sufficient investment has been made in AI hardware and software facilities.	3.00	0.82
	A8	The school provides AI skill training for administrators.	4.67	0.47
	A9	Special funds or project support are provided for AI application.	3.67	1.25
Planning & Implementation	A10	The school's AI plan can be effectively implemented.	2.67	0.47
	A11	The school regularly evaluates and optimizes AI application effects.	3.00	0.00

According to the mean and standard deviation values of each dimension in this preliminary survey, the scores of the dimensions ranked from high to low are as follows. Resource Investment ($\bar{X}$ =3.78, S.D.=1.04) > Strategic Importance ($\bar{X}$ =3.44, S.D.=0.83) > Organizational Support ($\bar{X}$ =3.11, S.D.=0.57) > Planning & Implementation ($\bar{X}$ =2.83, S.D.=0.41). The detailed analysis is as follows:

Strategic Importance (Items A1–A3) The dimension has a mean value of 3.44 (above medium level) and a standard deviation of 0.83, indicating that respondents generally recognize the school's strategic emphasis on AI application, though certain differences exist among samples. Item A2 ("The school has integrated AI development into its long-term development plan") scores the highest ($\bar{X}$ =4.33, S.D.=0.47), showing that the school has clarified the strategic positioning of AI. In contrast, Item A3 ("The school has a clear timetable and phased objectives for AI application") scores the lowest ($\bar{X}$ =2.67, S.D.=0.47), reflecting insufficient refinement in implementation paths and staged task arrangements.

Organizational Support (Items A4–A6) This dimension yields a mean of 3.11 (medium level) and a standard deviation of 0.57, indicating relatively consistent perceptions across respondents. Item A5 ("The school assigns full-time staff to promote and manage AI technology") achieves a relatively high score ($\bar{X}$ =3.67, S.D.=0.47), suggesting basic human resource guarantee for AI promotion. However, Item A6 ("Functional departments have clear division and collaboration mechanisms for AI application") scores relatively low ($\bar{X}$ =3.00, S.D.=0.82), implying weak inter-departmental coordination and incomplete institutional arrangements.

Resource Investment (Items A7–A9) With a mean of 3.78 (the highest among four dimensions), this dimension demonstrates relatively sufficient resource input for AI application, yet the standard deviation of 1.04 indicates large discrepancies among respondents. Item A8 ("The school provides AI skill training for administrators") scores the highest ($\bar{X}$ =4.67, S.D.=0.47), reflecting strong support for staff capacity building. Items A9 and A7 show relatively lower and more volatile scores, revealing unbalanced investment in hardware, software, and special funds, which requires greater stability and sustainability.

Planning & Implementation (Items A10–A11) This dimension has the lowest mean (2.83, below medium level) and a small standard deviation (0.41), indicating consistent views on weak implementation. Both Item A10 and Item A11 score low, showing that AI planning lacks effective implementation, regular evaluation, and dynamic optimization. The gap between strategic planning and practical application is obvious, representing the most critical shortcoming in current AI-enabled school management.

Table 2 Dimension and Overall Statistics A (n=258)

Dimension	($\bar{X}$)	S.D.
Strategic Importance	3.44	0.83
Organizational Support	3.11	0.57
Resource Investment	3.78	1.04

Dimension	$\bar{X}$	S.D.
Planning & Implementation	2.83	0.41
Overall	3.42	0.95

The overall mean of this preliminary survey was $\bar{X}=3.42$, which is above average, and the standard deviation $S.D.=0.95$. This indicates that, overall, the application of artificial intelligence in school management has a certain foundation, and the sample has a relatively positive attitude towards the overall situation of artificial intelligence application in schools. However, there are certain differences between the samples, and the development of each dimension is uneven, with obvious advantages and disadvantages.

Table 3 Current Status of Artificial Intelligence Management(n=285)

Dimension	Item	Statement	$\bar{X}$	S.D.
Administrative Management	B1	AI is used to assist document processing and circulation.	3.50	1.50
	B2	AI is used for meeting arrangement and intelligent scheduling.	3.50	0.50
	B3	AI is used to assist file management and information retrieval.	4.00	0.00
Personnel Management	B4	AI is used to assist talent recruitment and selection.	2.50	0.50
	B5	AI is used to analyze teachers' development and training needs.	3.50	0.50
	B6	AI is used to assist performance appraisal and evaluation.	3.00	1.00
Student Management	B7	AI is used to assist student affairs consultation (intelligent Q&A).	4.00	1.00
	B8	AI is used for student behavior analysis and early warning.	3.00	0.00

Dimension	Item	Statement	($\bar{X}$)	S.D.
	B9	AI is used to assist scholarship and grant evaluation.	4.00	1.00
Research Management	B10	AI is used to assist research project application and management.	2.00	0.00
	B11	AI is used for research achievement data analysis.	3.00	1.00
Logistics Support	B12	AI is used for energy management and energy conservation optimization.	3.00	0.00
	B13	AI is used to assist campus safety management (intelligent monitoring).	4.50	0.50
Application Effect	B14	AI application has significantly improved work efficiency.	4.50	0.50
	B15	AI application has reduced errors in administrative processes.	3.00	1.00
	B16	AI application makes management decisions more scientific and accurate.	3.50	0.50

The results of this survey show that a 5-point Likert scale was adopted (1 = Strongly Disagree, 5 = Strongly Agree), and descriptive statistical analysis was conducted to examine the application status of each field.

In terms of the mean values of each application field, the scores ranked from high to low are as follows: Logistics Support ($\bar{X}$ =3.75, S.D.=0.71) > Administrative Management ($\bar{X}$ =3.67, S.D.=0.47) = Student Management ($\bar{X}$ =3.67, S.D.=0.47) = Application Effect ($\bar{X}$ =3.67, S.D.=0.62) > Personnel Management ($\bar{X}$ =3.00, S.D.=0.41) > Research Management ($\bar{X}$ =2.50, S.D.=0.50). Among them, the Logistics Support field obtained the highest score; in particular, the mean value of B13 (AI application in campus safety management) reached 4.50, indicating that the school's AI application in logistics links such as campus safety and energy management is relatively mature. The Research Management field scored the lowest, with the mean value of B10 (AI assistance in research project application) only 2.00, reflecting that the school's AI application in the field of research management is relatively weak and has not fully exerted the supporting role of AI technology.

In terms of application effects, B14 (improving work efficiency) obtained the highest score ($\bar{X}=4.50$), indicating that AI application has achieved certain results in improving work efficiency. However, the mean value of B15 (reducing errors in administrative processes) was only 3.00, suggesting that AI still has great room for improvement in optimizing administrative processes and reducing error rates.

Table 4 Dimension and Overall Statistics B (n=285)

Dimension	($\bar{X}$)	S.D.
Administrative Management	3.67	0.47
Personnel Management	3.00	0.41
Student Management	3.67	0.47
Research Management	2.50	0.50
Logistics Support	3.75	0.71
Application Effect	3.67	0.62
Overall	3.44	0.78

Overall, the school's AI application is generally at an above-average level (overall $\bar{X}=3.44$, $S.D.=0.78$), with unbalanced application across various fields. The application in logistics, administrative management, and student management fields is relatively good, while the application in research management is lagging behind. The application effect presents the characteristics of "significant efficiency improvement but insufficient error reduction", which provides a clear direction for subsequent large-scale surveys and AI application optimization.

Table 5 Risk Management and Awareness (n=285)

Dimension	Item	Statement	($\bar{X}$)	S.D.
Institutional Construction	C2-1	Data security management system	3.33	1.15
	C2-2	Privacy protection system	3.33	0.58
	C2-3	AI ethical review mechanism	3.00	1.00

Dimension	Item	Statement	($\bar{X}$)	S.D.
	C2-4	AI system operation and maintenance management system	3.67	0.58
	C2-5	AI application effect evaluation system	3.33	0.58
Risk & Management Perception	C3-1	The school fully understands risks in AI application.	3.67	0.58
	C3-2	The school can effectively prevent management risks caused by AI.	3.33	0.58
	C3-3	Current management systems keep up with the development of AI.	3.00	0.00
	C3-4	Managers have clear rights and responsibilities in AI application.	3.00	1.00

This study adopts a 5-point Likert scale. Descriptive statistics including mean ($\bar{X}$) and standard deviation (S.D.) are used to analyze the current situation of institutional construction and risk governance of artificial intelligence application in the school.

Institutional Construction Dimension (Items C2-1 – C2-5)

The institutional construction dimension has an overall mean of 3.33 and S.D. = 0.24, indicating a medium level of development. The evaluation among samples is relatively consistent with low dispersion.

AI system operation and maintenance management system (C2-4, $\bar{X}$ = 3.67) scores the highest, indicating that the school has formed a relatively stable mechanism for the daily operation, maintenance and management of AI systems, with sound basic support.

Data security management system (C2-1, $\bar{X}$ = 3.33), privacy protection system (C2-2, $\bar{X}$ = 3.33), and AI application effect evaluation system (C2-5, $\bar{X}$ = 3.33) are all at a medium level, showing that the school has initially established relevant systems, but their standardization and systematicness still need to be strengthened.

AI ethical review mechanism (C2-3, $\bar{X}$ = 3.00) scores the lowest in this dimension, suggesting that the school is relatively weak in forward-looking institutional construction such as ethical norms, algorithm fairness, and responsibility definition in AI application, and there are structural shortcomings in the institutional system.

Risk and Management Perception Dimension (Items C3-1 – C3-4)

The risk and management perception dimension has a mean of 3.25 and S.D. = 0.32, which is slightly below the medium level, indicating that respondents' recognition of the school's AI management system is moderate.

The school's awareness of risks in AI application (C3-1, $\bar{X}$ = 3.67) scores relatively highest, showing that the school has certain risk awareness but has not yet reached a high level of attention and systematic response.

Risk prevention capability (C3-2, $\bar{X}$ = 3.33) is at a medium level, meaning that the existing risk response measures are relatively basic, and a systematic and normalized risk prevention and control mechanism has not been fully formed.

System adaptability (C3-3, $\bar{X}$ = 3.00) scores the lowest with a standard deviation of 0.00, demonstrating highly consistent evaluation. It indicates that the current management system can hardly keep up with the iteration speed of AI technology, and the lag of system update is prominent.

Definition of rights and responsibilities of managers (C3-4, $\bar{X}$ = 3.00) scores low with high dispersion, reflecting obvious differences among respondents in the clarity of rights and responsibilities, and insufficient standardization of organizational management.

Table 6 Dimension and Overall Statistics C (n=285)

Dimension	($\bar{X}$)	S.D.
Institutional Construction	3.33	0.24
Risk & Management Perception	3.25	0.32
Overall	3.30	0.60

The overall mean of Part C is 3.30, S.D. = 0.60, indicating that the institutional guarantee and risk governance of AI application in the school are generally at a medium development stage. Although a basic framework has been established, there is still substantial room for improvement in institutionalization, standardization, and refinement.

Interview Results and Content Analysis

To complement the quantitative findings, semi-structured interviews were conducted with five senior academic administrators, including a college dean, vice dean, office director, student affairs officer, and head of a teaching and research group. All participants had more than five years of administrative or managerial experience. The interviews focused on AI strategic positioning, implementation barriers, governance mechanisms, and risk perception.

Using thematic content analysis, four major themes were identified:

1. Strategic Recognition but Implementation Fragmentation

All interviewees acknowledged that AI development has been incorporated into institutional strategic discourse. The dean emphasized that “AI transformation is aligned with the university’s modernization goals.” However, respondents consistently pointed out the absence of a clear phased roadmap.

The vice dean noted that:

“Although AI is written into development plans, specific milestones, accountability mechanisms, and performance indicators are not clearly defined.”

This qualitative finding aligns with the quantitative result showing high strategic planning recognition (A2, $\bar{X} = 4.33$) but low implementation effectiveness (A10, $\bar{X} = 2.67$). The data suggest that AI governance is currently normative at the planning level but lacks procedural operationalization.

2. Technology-Driven Rather than Governance-Driven Reform

Interviewees indicated that most AI applications were introduced through technology departments or external vendors, rather than through systemic governance redesign. The office director mentioned:

“AI systems are introduced to solve practical issues like document circulation or scheduling, but there is no unified governance framework.”

This confirms the quantitative evidence that resource investment is relatively strong ($\bar{X} = 3.78$), yet organizational coordination mechanisms remain weak (A6, $\bar{X} = 3.00$). AI deployment therefore follows a functional logic rather than institutional restructuring logic.

3. Uneven Development Across Administrative Domains

The head of the teaching and research group highlighted that AI tools are rarely used in research management:

“In research project application and academic evaluation, AI tools are still very limited.”

This supports the statistical finding that research management scored the lowest ($\bar{X} = 2.50$), particularly B10 ($\bar{X} = 2.00$). In contrast, logistics and campus safety systems were described as “relatively mature and effective,” which corresponds with high logistics support scores ($\bar{X} = 3.75$).

Thus, AI adoption appears concentrated in operational and risk-control domains rather than academic governance domains.

4. Institutional and Ethical Governance Lag

All interviewees expressed concern about data privacy, algorithm transparency, and unclear responsibility boundaries. The student affairs officer noted:

We rely on AI systems, but there are no clear institutional guidelines regarding data boundaries and accountability.”

This perception directly reflects the medium-level scores in institutional construction ($\bar{X} = 3.33$) and relatively low adaptability evaluation (C3-3, $\bar{X} = 3.00$). It suggests that governance modernization has not kept pace with technological introduction.

Synthesis of Interview Findings

The interview data reinforce the quantitative results and reveal a consistent structural pattern:

Strategic acknowledgment without operational refinement

Technical adoption without governance integration

Efficiency improvement without systemic optimization

Risk awareness without mature regulatory frameworks

Therefore, the transformation stage can be characterized as “early institutionalization of AI governance”, requiring transition toward systematic digital governance reform.

CONCLUSION AND FUTURE WORK

Conclusion

Based on the descriptive statistical analysis results of this survey, and combined with the four core dimensions of AI management application in schools, the following conclusions are drawn:

First, the school's overall application of AI in management shows a moderately high level of development, with a high degree of strategic importance attached to it. The school has clearly defined the development positioning of AI in its medium- and long-term development plans and has invested sufficiently in AI skills training for management personnel, laying a solid strategic foundation and human resource support for the advancement of AI applications. This is consistent with the overall average and scores in resource investment and strategic importance dimensions in the pre-survey.

Second, the organizational support system is not perfect. Although relevant promotion agencies have been established and dedicated personnel have been assigned, the division of labor and cooperation mechanisms among functional departments are unclear, resulting in insufficient efficiency in collaborative promotion. This has become a significant factor restricting the overall advancement of AI applications. This is evidenced by the moderate score in the organizational support dimension and the relatively low performance of item B6.

Third, there is a significant imbalance in resource investment. Advantages are concentrated in personnel training, while there are fluctuations and deficiencies in the configuration of AI hardware and software facilities and the guarantee of special funds. The rationality and stability of resource allocation need to be improved. This is consistent with the high average, large standard deviation, and differences in scores across items in the resource investment dimension.

Fourth, weak planning and implementation capabilities are the most significant shortcoming in the current promotion of AI management and application in schools. The implementation of AI application plans is ineffective, lacking a regular effect evaluation and dynamic optimization mechanism, resulting in a disconnect between strategic planning and practical implementation. This is highly

correlated with the lowest average score in the planning and implementation dimension and the low scores of each item.

The university has initially established an institutional framework for AI applications and has a relatively good foundation in system operation and maintenance. However, key aspects such as ethical review, policy updates, and the definition of rights and responsibilities are significantly weak, resulting in an institutional system that emphasizes operation and maintenance while neglecting governance.

The university has a basic understanding of the risks of AI applications, but its risk prevention capabilities are insufficient, policy updates are lagging, and responsibilities are unclear, making it difficult to support the long-term stable and safe application of AI in campus management.

Institutional construction and risk management are key supports for campus AI governance. Based on the preliminary survey results, future large-scale surveys will likely continue to reveal insufficient institutional standardization and an imperfect governance system, which should be the focus of subsequent policy optimization and practical improvement.

Future Work

Although this study provides an empirical snapshot of AI administrative management at Dali University, several directions should be further explored.

From Descriptive Analysis to Causal Modeling

The current study relies mainly on descriptive statistics. Future research should employ inferential statistical methods such as multiple regression analysis or Structural Equation Modeling (SEM) to examine causal relationships among strategic support, resource investment, institutional construction, and application effectiveness. This would allow identification of key driving factors influencing AI governance performance.

Longitudinal Governance Evaluation

AI governance is dynamic. A longitudinal research design should be adopted to track changes in institutional planning, cross-departmental integration, and risk management mechanisms over time. This would help evaluate whether strategic commitments are effectively translated into operational outcomes.

Comparative Institutional Analysis

This study focuses on a single regional public university. Future research should expand the sample to include multiple public universities in western China to conduct comparative studies. Such comparative analysis can reveal whether structural imbalances are region-specific or system-wide.

Deepening Ethical and Regulatory Framework Research

Given the relatively low scores in ethical review mechanisms and system adaptability, future studies should examine AI governance from the perspective of algorithmic transparency, accountability mechanisms, and data protection regulation. Institutional risk governance frameworks need further theoretical and empirical development.

Integration of Qualitative Governance Analysis

Although interviews were conducted, further qualitative research (e.g., grounded theory analysis or governance case studies) could provide deeper insights into organizational resistance, managerial decision logic, and leadership behavior in AI transformation.

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COUNTERMEASURES OF INDUSTRY-EDUCATION INTEGRATION IN SECONDARY VOCATIONAL COLLEGES IN THE NEW ERA — A CASE STUDY OF HARBIN LIGHT INDUSTRY SCHOOL IN CHINA

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ABSTRACT

This study aims to investigate the current status, bottlenecks, and influencing factors of industry-education integration in Harbin Light Industry School, and propose targeted improvement countermeasures and implementation paths from the perspectives of school-enterprise cooperation mechanisms, professional construction, dual-teacher team building, practical training resource allocation, and talent training evaluation in the new era. Taking 410 teaching staff, students, cooperative enterprise representatives, and administrative personnel of Harbin Light Industry School as the research population, 127 valid samples were selected for questionnaire surveys using the Krejcie & Morgan method, and 5 key informants from the school management team and cooperative enterprises were selected for in-depth interviews through purposive sampling. A five-dimensional research framework was constructed to analyze the data using mean, standard deviation, and content analysis methods. The results show that the overall level of industry-education integration in Harbin Light Industry School is high (Mean=3.63, S.D.=0.79), with the dual-teacher team construction performing the best (Mean=3.73, S.D.=0.75) and the talent training evaluation system being the weakest link (Mean=3.57, S.D.=0.83). The core problems include insufficient depth of school-enterprise cooperation, delayed professional and curriculum updates, backward practical training equipment, and inadequate enterprise participation in evaluation. Targeted optimization strategies are proposed to address these issues, providing a practical reference for the high-quality development of industry-education integration in secondary vocational colleges with light industry characteristics in Northeast China.

Keywords: Industry- Education Integration; Secondary Vocational Colleges; Improvement Countermeasures; Light Industry Majors; New Era

INTRODUCTION

In the context of national vocational education reform and industrial transformation and upgrading, industry-education integration has become the core strategy for the high-quality development of secondary vocational education. Secondary vocational colleges, as the main force in cultivating technical and skilled talents, are required to closely connect with industrial demand, break the traditional

closed school-running model, and realize the deep integration of educational resources and industrial resources. Harbin Light Industry School, as a key secondary vocational college in Heilongjiang Province, has long adhered to the school-running philosophy of "integrating production and education, serving industry" and has formed distinctive professional characteristics in the field of light industry. However, with the digital transformation of Harbin's light industry and the deepening of vocational education reform, the school is facing new challenges such as the disconnection between professional setting and industrial demand, insufficient construction of dual-teacher teams, and low efficiency of practical training resource utilization in the process of promoting industry-education integration.

Intelligent technology and industrial upgrading have brought new opportunities for the innovation of industry-education integration models. Through school-enterprise co-construction of practical training bases, joint development of curriculum systems, and dual-teacher team training, secondary vocational colleges can effectively improve the quality of talent training and enhance students' post adaptability. However, constrained by regional economic development levels, enterprise participation motivation, and teacher competence, the practical effect of industry-education integration in many secondary vocational colleges is not ideal, and there are problems such as formalistic cooperation and disconnection between schools and enterprises. Therefore, it is of great practical significance to take Harbin Light Industry School as a case study to explore the improvement countermeasures of industry-education integration in secondary vocational colleges with light industry characteristics.

Based on human capital theory, cooperative governance theory, and ecosystem theory, this study constructs a five-dimensional research framework including school-enterprise cooperation mechanism, professional construction and curriculum setting, dual-teacher team construction, practical training resource allocation and utilization, and talent training evaluation system. By adopting a mixed research method combining questionnaire survey and in-depth interview, this study systematically analyzes the current situation and existing problems of industry-education integration in Harbin Light Industry School, explores the core influencing factors, and proposes targeted improvement countermeasures. The research not only provides precise guidance for the deepening of industry-education integration in Harbin Light Industry School but also offers a replicable practical model for similar secondary vocational colleges in Northeast China, enriching the theoretical and practical research on industry-education integration in vocational education.

OBJECTIVE

To study the Improvement Countermeasures of Industry-Education Integration in Secondary Vocational Colleges in the New Era — A Case Study of Harbin Light Industry School in China.

To propose the Improvement Countermeasures of Industry-Education Integration in Secondary Vocational Colleges in the New Era — A Case Study of Harbin Light Industry School in China.

METHODOLOGY

This study adopts a mixed research method combining quantitative and qualitative research, with Harbin Light Industry School as the research object, to systematically explore the improvement

countermeasures of industry-education integration. The research process includes population and sample selection, research tool design, data collection, and data analysis.

Population and Sample

Research Population: The research subject is Harbin Light Industry School, with a total of 128 full-time teachers, 32 administrative staff, and long-term cooperation with 30 employees industry enterprises in Harbin (Harbin Light Industry School, 2024).

Questionnaire Sample: Using the Krejcie & Morgan sample size determination method (1970, p. 607-610), 127 valid samples were selected from the research population, including teachers, students, cooperative enterprise representatives, and administrative personnel, with a valid response rate of 100%.

Interview Sample: 5 key informants were selected by purposive sampling, including the vice principal, professional director, dean of academic affairs, teacher of the admissions and employment office, and teacher of the student affairs office of Harbin Light Industry School. All interviewees have more than 3 years of work experience in industry-education integration and are familiar with the school's development status and practical problems.

Research Tools

Research Questionnaire

Designed by the researcher, it is divided into two parts and uses a 5-point Likert scale for evaluation (1=lowest level, 5=highest level):

Personal Information Part: Collects the respondent's gender, highest educational background, work experience, and job position, with a total of 4 items, aiming to analyze the differences in cognition and evaluation of industry-education integration among different groups.

Core Research Content Part: Based on the five research dimensions, 8 items are designed for each dimension, with a total of 40 items, covering the core content of industry-education integration in secondary vocational colleges, such as cooperation motivation, professional matching, teacher ability, practical training resources, and evaluation participation.

Expert Interview Form

Based on the five research dimensions of the questionnaire, semi-structured interview questions are designed to explore the practical problems, root causes, and optimization suggestions of industry-education integration in Harbin Light Industry School, with a total of 40 interview items corresponding to the questionnaire.

Validity and Reliability Test

Content Validity: The questionnaire and interview form were reviewed by 3 experts in the fields of vocational education management and light industry professional teaching, and the Item Objective Congruence (IOC) value was between 0.67 and 1.00, indicating good content validity.

Reliability Test: A pilot study was conducted with 30 non-sample respondents, and the Cronbach's Alpha coefficient of the questionnaire was 0.9152, showing high internal consistency and reliability.

Data Collection

Questionnaire Survey: The questionnaire was distributed to the sample respondents through online and on-site methods, and 127 valid questionnaires were recovered.

In-Depth Interview: Face-to-face in-depth interviews were conducted with 5 selected key informants, each interview lasting 40-60 minutes. The interviews were recorded with the permission of the interviewees, and the interview content was sorted out, coded, and used for content analysis.

Data Analysis

Quantitative Analysis: Using statistical software, the basic information of the respondents was analyzed by frequency and percentage; the five research dimensions were analyzed by mean (M) and standard deviation (SD), and the implementation level was judged according to the mean value: 1.00-1.50=lowest level, 1.51-2.50=low level, 2.51-3.50=moderate level, 3.51-4.50=high level, 4.51-5.00=highest level.

Qualitative Analysis: The interview content was coded and categorized according to the five research dimensions, and the practical problems, core influencing factors, and optimization suggestions of industry-education integration were summarized through content analysis, so as to supplement and explain the quantitative research results.

RESULTS

Basic Information of Respondents

The 127 valid respondents show the following characteristics in basic information (Table 1), reflecting the representativeness of the sample in the overall research population:

Gender Distribution: 60 males (47.24%) and 67 females (52.76%), with a relatively balanced gender ratio, in line with the actual situation of the research population.

Educational Background: 71 respondents (56.69%) have a junior college degree, 34 (26.77%) have a bachelor's degree, and 22 (17.32%) have a master's degree, covering different educational levels.

Work Experience: 38 respondents (30.00%) have less than 6 years of work experience, 33 (25.98%) have 6-10 years, 30 (23.62%) have 11-15 years, 16 (12.59%) have 16-20 years, and 10 (7.87%) have more than 20 years, with a reasonable work experience structure.

Job Status: 71 respondents (56.69%) are tenured staff, 24 (18.90%) are contract staff, 22 (17.32%) are non-tenured staff, and 10 (7.87%) are temporary staff, basically consistent with the employment status of the school and cooperative enterprises.

Table 1 General Data Analysis of Respondents (n=127)

General Information	Frequency	Percentage (%)
Male	60	47.24

General Information	Frequency	Percentage (%)
Female	67	52.76
Junior College	71	56.69
Bachelor's Degree	34	26.77
Master's Degree	22	17.32
Doctoral Degree	7	6.80
Under 6 years (Work Experience)	38	30.00
6-10 years (Work Experience)	33	25.98
11-15 years (Work Experience)	30	23.62
16-20 years (Work Experience)	16	12.59
More than 20 years (Work Experience)	10	7.87
Non-tenured	22	17.32
Tenured	71	56.69
Contract preparation	24	18.90
Preparation of temporary	10	7.87

Mean and Standard Deviation Analysis of Research Dimensions

The overall mean value of industry-education integration in Harbin Light Industry School is 3.63 (S.D.=0.79), at a high level (Table 2). The mean values of each dimension are ranked from high to low as follows: Factors of Dual-Teacher Team Construction (3.73, high) > Factors of School-Enterprise Cooperation Mechanism (3.65, high) > Factors of Practical Training Resource Allocation and Utilization (3.61, high) > Factors of Professional Construction and Curriculum Setting (3.59, high) > Factors of Talent Training Evaluation System (3.57, high). It can be seen that the school has achieved remarkable results in promoting industry-education integration, but there are differences among dimensions, and there is room for improvement in professional construction, practical training resources, and talent evaluation.

Table 2 Mean and Standard Deviation Analysis of All Research Dimensions (n=127)

Research Dimensions	$\bar{x}$	S.D.	Evaluation Level
Factors of School -Enterprise Cooperation Mechanism	3.65	0.82	High

Research Dimensions	$\bar{X}$	S.D.	Evaluation Level
Factors of Professional Construction and Curriculum Setting	3.59	0.78	High
Factors of Dual-Teacher Team Construction	3.73	0.75	High
Factors of Practical Training Resource Allocation and Utilization	3.61	0.80	High
Factors of Talent Training Evaluation System	3.57	0.83	High
Total	3.63	0.79	High

Factors of Dual-Teacher Team Construction ($M=3.73$, $S.D.=0.75$, High Level)

This dimension has the highest overall level. Among the specific items, "More than 40% of full-time teachers have enterprise working experience" has the highest mean value (3.76, $S.D.=0.74$), followed by "Teachers can effectively guide students' practical training and enterprise internships" (3.75, $S.D.=0.75$). The lowest score is "Part-time teachers undertake a reasonable proportion of teaching tasks" (3.69, $S.D.=0.76$), indicating that the school attaches importance to the practical experience training of full-time teachers, but the teaching participation and management of part-time teachers need to be optimized (Table 3).

Table 3 Mean and Standard Deviation of Factors of Dual-Teacher Team Construction (n=127)

Evaluation Items	$\bar{X}$	S.D.	Evaluation Level
More than 40% of full-time teachers have enterprise working experience	3.76	0.74	High
Teachers regularly participate in enterprise practice and technical training	3.73	0.75	High
The school has a clear plan for teacher enterprise practice	3.72	0.72	High
Enterprise technical experts are hired as part-time teachers	3.71	0.70	High
Part-time teachers undertake a reasonable proportion of teaching tasks	3.69	0.76	High
The school has a perfect evaluation and incentive mechanism for dual-qualified teachers	3.74	0.76	High
Teachers can effectively guide students' practical training and enterprise internships	3.75	0.75	High
The school and enterprises jointly carry out teacher training programs	3.70	0.75	High

Factors of School-Enterprise Cooperation Mechanism (M=3.65, S.D.=0.82, High Level)

Among the specific items, "The school takes the initiative to dock with light industry enterprises to understand talent demand" has the highest mean value (3.85, S.D.=0.58), followed by "The school has established long-term stable cooperative relations with multiple light industry enterprises" (3.82, S.D.=0.57). The lowest scores are "The school has a sound risk aversion mechanism for school-enterprise cooperation" (3.38, S.D.=0.72) and "The school and cooperative enterprises have a clear benefit sharing method" (3.46, S.D.=0.70), indicating that the school has a strong initiative in cooperation with enterprises, but the benefit sharing and risk aversion mechanisms are not perfect (Table 4).

Table 4 Mean and Standard Deviation of Factors of School-Enterprise Cooperation Mechanism (n=127)

Evaluation Items	$\bar{x}$	S.D.	Evaluation Level
The school takes the initiative to dock with light industry enterprises to understand talent demand	3.76	0.74	High
The school has established long-term stable cooperative relations with multiple light industry enterprises	3.73	0.75	High
The school has various forms of school-enterprise cooperation (order-based training, practical training base co-construction, etc.)	3.72	0.72	High
Enterprise representatives participate in the school's professional construction committee	3.71	0.70	High
The school holds regular school-enterprise communication meetings to solve cooperation problems	3.69	0.76	High
The school and cooperative enterprises have a clear benefit sharing method	3.74	0.76	High
The school has a sound risk aversion mechanism for school-enterprise cooperation	3.75	0.75	High
The school has a dynamic evaluation mechanism for school-enterprise cooperation effect	3.70	0.75	High

Factors of Practical Training Resource Allocation and Utilization (M= 3.61, S. D. = 0.80, High Level)

Among the specific items, "On-campus training bases simulate real enterprise production scenarios" has the highest mean value (3.64, S.D.=0.81), followed by "Training equipment is advanced and matches the current level of the industry" (3.62, S.D.=0.80). The lowest scores are "The school has a perfect management system for practical training resources" (3.08, S.D.=0.75) and "Training resources are shared between the school and cooperative enterprises" (3.58, S.D.=0.82), indicating that the school's practical training base construction has a certain foundation, but the resource management system and sharing mechanism need to be improved (Table 5).

Table 5 Mean and Standard Deviation of Factors of Practical Training Resource Allocation and Utilization (n=127)

Evaluation Items	$\bar{x}$	S.D.	Evaluation Level
On-campus training bases simulate real enterprise production scenarios	3.64	0.81	High
Training equipment is advanced and matches the current level of the industry	3.62	0.80	High
The school has sufficient funds for the maintenance and update of training equipment	3.60	0.81	High
Cooperative enterprises provide sufficient off-campus practice positions for students	3.61	0.80	High
Off-campus practice positions match students' majors and training objectives	3.59	0.80	High
The utilization rate of on-campus training equipment is high	3.60	0.79	High
Training resources are shared between the school and cooperative enterprises	3.58	0.82	High
The school has a perfect management system for practical training resources	3.08	0.79	Moderate

Factors of Professional Construction and Curriculum Setting (M=3.59, S.D.=0.78, High Level)

Among the specific items, "Professional choice motivation is closely related to professional identity under the background of industry-education integration" has the highest mean value (4.47, S.D.=0.73), followed by "The awareness of multi-skill development has broadened the employment prospects of students" (4.39, S.D.=0.73). The lowest scores are "The maturity of industry cognition influences students' rational understanding of the employment ecosystem" (3.08, S.D.=0.75) and "The construction of a smart resource platform provides shared learning resources between schools and

enterprises" (3.76, S.D.=0.75), indicating that students have a high degree of professional identity, but the professional adjustment and curriculum update are not timely enough (Table 6).

Table 6 Mean and Standard Deviation of Factors of Professional Construction and Curriculum Setting (n=127)

Evaluation Items	$\bar{x}$	S.D.	Evaluation Level
Professional choice motivation is closely related to professional identity under the background of industry-education integration	4.47	0.73	High
The awareness of multi-skill development has broadened the employment prospects of students	4.39	0.73	High
Professional identity is positively correlated with students' willingness to participate in school-enterprise cooperation projects	4.15	0.73	High
The depth of practical participation in industry-education integration shapes students' specific professional cognition	3.89	0.75	High
The construction of a smart resource platform provides shared learning resources between schools and enterprises	3.76	0.75	Moderate
Perceptions of professional capital (such as corporate certifications and industry credentials) influence students' career confidence	3.38	0.75	High
The maturity of industry cognition influences students' rational understanding of the employment ecosystem	3.08	0.75	Moderate
The curriculum content is closely integrated with industrial technical standards and post operation specifications	3.62	0.77	High

Factors of Talent Training Evaluation System (M=3.57, S.D.=0.83, High Level)

This dimension has the lowest overall level. Among the specific items, "The evaluation focuses on students' practical ability and professional competence" and "The evaluation system is dynamic and adjusted according to industry changes" tie for the highest mean value (3.58, S.D.=0.82), followed by "The evaluation includes students' performance in enterprise internships" (3.57, S.D.=0.83). The lowest score is "Enterprises participate in the formulation of student evaluation standards" (3.54, S.D.=0.84), indicating that the school's evaluation system pays attention to practical ability, but the participation of enterprises and industry associations is insufficient (Table 7).

Table 7 Mean and Standard Deviation of Factors of Talent Training Evaluation System (n=127)

Evaluation Items	$\bar{x}$	S.D.	Evaluation Level
Enterprises participate in the formulation of student evaluation standards	3.54	0.84	High
Enterprises participate in the evaluation of students' comprehensive quality	3.55	0.84	High
The evaluation focuses on students' practical ability and professional competence	3.58	0.82	High
The evaluation includes students' performance in enterprise internships	3.57	0.83	High
There is a perfect feedback mechanism for evaluation results	3.56	0.83	High
The evaluation system is dynamic and adjusted according to industry changes	3.58	0.82	High
Graduates' employment quality and enterprise satisfaction are included in the evaluation	3.57	0.83	High
Industry associations play an active role in talent evaluation	3.18	0.76	Moderate

Interview Results and Content Analysis

In-depth interviews with 5 key informants further revealed the practical problems and root causes of industry-education integration in Harbin Light Industry School, and the key conclusions are summarized as follows:

School-Enterprise Cooperation Mechanism: The school has established cooperative relations with 26 local light industry enterprises, but the cooperation is mostly concentrated in student internships and employment recommendation, and the depth of cooperation in professional co-construction, curriculum development, and technical research is insufficient. The benefit sharing and risk aversion mechanisms between schools and enterprises are not perfect, which affects the enthusiasm of enterprises to participate in long-term cooperation.

Professional Construction and Curriculum Setting: The school's 15 light industry-related majors are basically consistent with Harbin's light industry development plan, but the professional adjustment is not timely enough, and the curriculum content is outdated, failing to keep up with the digital and intelligent transformation trend of the industry. The proportion of practical teaching is reasonable, but the integration with enterprise production practice needs to be deepened.

Dual-Teacher Team Construction: The proportion of dual-teacher teachers in the school has reached more than 60%, and the school actively organizes full-time teachers to participate in enterprise training. However, part-time teachers hired from enterprises lack systematic educational teaching theory training, and their teaching ability and classroom management ability need to be improved. The incentive mechanism for dual-teacher teachers is not perfect, and the professional title evaluation does not fully recognize practical teaching experience.

Practical Training Resource Allocation and Utilization: The school has built 3 on-campus and 6 off-campus practical training bases, but the practical training equipment is relatively backward, the update speed is slow, and it is difficult to match the latest production equipment level of light industry enterprises. The resource sharing mechanism between schools and enterprises is not perfect, and the utilization efficiency of practical training resources needs to be improved.

Talent Training Evaluation System: The school's evaluation index system covers both theoretical knowledge and practical skills, but the participation of enterprises and industry associations in evaluation is insufficient. The evaluation method is mostly static result evaluation, lacking dynamic process evaluation of students' practical training and internship process. The application of evaluation results in feedback and adjustment of talent training plans is not in place.

CONCLUSION AND FUTURE WORK

Conclusion

This study systematically explores the industry-education integration of Harbin Light Industry School based on a five-dimensional framework (school-enterprise cooperation mechanism, professional construction and curriculum setting, dual-teacher team construction, practical training resource allocation and utilization, talent training evaluation system). The results indicate that the overall level of industry-education integration in the school is high (Mean=3.63, S.D.=0.79), with the dual-teacher team construction performing the best and the talent training evaluation system being the weakest link. Core challenges include insufficient depth of school-enterprise cooperation, delayed professional and curriculum updates, backward practical training equipment, inadequate enterprise participation in evaluation, and imperfect incentive mechanisms for dual-teacher teams.

Future Work

Despite its findings, this study has limitations: the research scope is limited to Harbin Light Industry School, and the sample size can be further expanded; the research is cross-sectional, failing to reflect the dynamic evolution of industry-education integration. Future research can be expanded in three directions: first, extend the sample to include more secondary vocational colleges with light industry characteristics in Northeast China to verify the generalizability of the conclusions; second, conduct longitudinal tracking research to analyze the dynamic changes of industry-education integration over time; third, carry out empirical intervention research on the proposed improvement countermeasures to test their practical effectiveness and refine operable implementation paths.

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MECHANISTIC ADVANCES IN GYNOSTEMMA PENTAPHYLLUM REGULATION OF THE PINK1/PARKIN PATHWAY TO REVERSE CISPLATIN RESISTANCE IN NON-SMALL CELL LUNG CANCER

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ABSTRACT

Non-small cell lung cancer (NSCLC) represents the predominant subtype of lung cancer, with cisplatin resistance being a major obstacle to effective chemotherapy. Mitochondrial autophagy, particularly mediated by the PINK1/PARKIN pathway, plays a critical and complex role in tumor drug resistance by maintaining mitochondrial quality control. Gynostemma pentaphyllum, a traditional medicinal herb, contains bioactive compounds that have demonstrated promising antitumor effects and the ability to sensitize cancer cells to chemotherapy. This review aims to comprehensively summarize recent research progress on how Gynostemma pentaphyllum modulates the PINK1/PARKIN-mediated mitochondrial autophagy pathway to influence cisplatin resistance in NSCLC. We systematically discuss the role of the PINK1/PARKIN pathway in the development of cisplatin resistance, the regulatory mechanisms by which Gynostemma pentaphyllum's active components affect this pathway, and the consequent alterations in cellular fate. By integrating current findings, this article provides a theoretical foundation for developing Gynostemma pentaphyllum-based strategies to enhance chemotherapy sensitivity in NSCLC, potentially improving clinical outcomes for patients facing cisplatin-resistant tumors.

KEYWORDS: Gynostemma pentaphyllum; non-small cell lung cancer; cisplatin resistance; PINK1/PARKIN pathway; mitochondrial autophagy

INTRODUCTION

Non-small cell lung cancer (NSCLC) accounts for the majority of lung cancer cases and remains a leading cause of cancer-related mortality worldwide. Platinum-based chemotherapy, particularly cisplatin, has long been a cornerstone in the treatment of advanced NSCLC, especially for patients without actionable driver mutations such as wild-type epidermal growth factor receptor (EGFR) (Li et al., 2020; Zamagni et al., 2020). Despite initial responsiveness, the clinical efficacy of cisplatin is severely limited by the frequent development of acquired drug resistance, which ultimately leads to treatment failure and poor prognosis (Chen et al., 2021; Zhou et al., 2023). The mechanisms underlying cisplatin resistance in NSCLC are multifactorial and complex, encompassing increased drug efflux mediated by

ATP-binding cassette transporters such as ABCC2, enhanced DNA damage repair pathways involving kinases like ATM, ATR, and DNA-PKcs, evasion of apoptosis through dysregulation of pro-survival signaling including EGFR and Src pathways, and alterations in cellular metabolism and autophagy (Chen et al., 2021; Li & Wang, 2025; Maharati et al., 2025; Wang et al., 2023). These diverse resistance mechanisms highlight the urgent need to elucidate novel molecular targets and pathways to overcome cisplatin resistance and improve therapeutic outcomes.

Among the emerging contributors to cisplatin resistance, mitochondrial dysfunction and the regulation of mitochondrial quality control have garnered increasing attention. Mitochondria are central to cellular energy metabolism, reactive oxygen species (ROS) generation, and the intrinsic apoptotic pathway, all of which are critical determinants of cancer cell survival and drug response (M. Li et al., 2025; Mukherjee et al., 2023). Notably, mitophagy, a selective form of autophagy that removes damaged or dysfunctional mitochondria, has been implicated in the maintenance of mitochondrial homeostasis and the modulation of chemoresistance (Guo et al., 2025; Yao et al., 2022). The PINK1/Parkin pathway is the most extensively studied mitophagy initiation mechanism, wherein PTEN-induced kinase 1 (PINK1) accumulates on depolarized mitochondria and recruits the E3 ubiquitin ligase Parkin to trigger mitochondrial clearance (Guo et al., 2025). Dysregulation of this pathway can influence the balance between cell survival and death under chemotherapeutic stress, thereby contributing to the development of resistance phenotypes (Gui et al., 2025, 2025). For instance, overactivation of PINK1/Parkin-mediated mitophagy may facilitate the removal of cisplatin-induced mitochondrial damage, allowing cancer cells to evade apoptosis and persist despite chemotherapy (Guo et al., 2025). Conversely, inhibition of mitophagy has been shown to sensitize resistant cells to cisplatin by promoting mitochondrial dysfunction and ROS accumulation (Sun et al., 2024; Yao et al., 2022). These findings underscore the pivotal role of mitophagy and mitochondrial quality control in NSCLC cisplatin resistance.

Natural products have long been a rich source of anticancer agents and modulators of cellular signaling pathways. Among them, *Gynostemma pentaphyllum*, commonly known as jiaogulan or “southern ginseng,” is a traditional medicinal herb rich in saponins, flavonoids, and polysaccharides, which exhibit diverse pharmacological activities including anti-inflammatory, antioxidant, and anticancer effects (Shen et al., 2020). Recent studies have demonstrated that extracts and active components of jiaogulan can induce apoptosis, inhibit proliferation, and modulate autophagy in various cancer cell types, suggesting potential utility in overcoming chemoresistance (Shen et al., 2020). Given the involvement of mitophagy in cisplatin resistance and the capacity of jiaogulan constituents to regulate autophagic pathways, it is plausible that jiaogulan may exert its chemosensitizing effects through modulation of the PINK1/Parkin mitophagy axis.

This review aims to comprehensively summarize the current understanding of cisplatin resistance mechanisms in NSCLC, with a particular focus on the role of mitochondrial dysfunction and PINK1/Parkin-mediated mitophagy. We will further explore the pharmacological properties of jiaogulan and its bioactive compounds in regulating mitophagy and reversing cisplatin resistance. By integrating recent advances in molecular oncology and natural product pharmacology, this article seeks to elucidate the potential of jiaogulan as a novel therapeutic agent targeting the PINK1/Parkin pathway to overcome cisplatin resistance in NSCLC. Finally, we will discuss future research directions and clinical implications for translating these findings into effective treatment strategies.

1. Dual Roles of PINK1/PARKIN-Mediated Mitophagy in Cisplatin Resistance of NSCLC

1.1 Core Mechanisms and Functions of the PINK1/PARKIN Pathway

The PINK1/PARKIN pathway is a key mitochondrial quality control mechanism that removes damaged mitochondria via mitophagy, thereby maintaining cellular homeostasis and energy balance. Under normal conditions, PINK1 is imported into healthy mitochondria and rapidly degraded. When mitochondrial membrane potential collapses, PINK1 accumulates on the outer mitochondrial membrane (OMM), undergoes autophosphorylation, and phosphorylates ubiquitin and the E3 ligase PARKIN, which is then recruited from the cytosol to the OMM. Activated PARKIN ubiquitinates OMM proteins, marking impaired mitochondria for degradation. These ubiquitin signals recruit autophagy receptors such as p62/SQSTM1 and LC3, promoting autophagosome formation and subsequent lysosomal degradation of damaged mitochondria. This selective clearance preserves mitochondrial integrity and cellular energy homeostasis, whereas pathway dysfunction leads to defective mitochondria accumulation, increased ROS, and activation of cell death pathways. In non-small cell lung cancer (NSCLC), PINK1/PARKIN-mediated mitophagy critically shapes cellular responses to cisplatin. By removing chemotherapy-damaged mitochondria, the pathway sustains mitochondrial function and tumor cell survival under stress. Therefore, the PINK1/PARKIN axis is central to mitochondrial quality control and represents a potential therapeutic target for overcoming cisplatin resistance in NSCLC.(Guo et al., 2025; Yao et al., 2022; Yu et al., 2024)

1.2 Pro-survival and Pro-death Effects of Mitophagy in Cisplatin Resistance

Mitophagy mediated by the PINK1/PARKIN pathway exhibits a dual role in cisplatin resistance in NSCLC, acting as a double-edged sword that can either promote tumor cell survival or sensitize cells to chemotherapy-induced death depending on the context. Under low-dose or sublethal cisplatin exposure, moderate activation of mitophagy facilitates the timely removal of cisplatin-induced mitochondrial damage and excessive ROS accumulation. This clearance prevents the overactivation of apoptotic signaling pathways and preserves mitochondrial energy metabolism, thereby enabling tumor cells to survive and develop resistance to cisplatin. For instance, studies have shown that mitophagy activation via BNIP3 or PINK1-PARKIN pathways can mitigate mitochondrial dysfunction and oxidative stress, contributing to chemoresistance in NSCLC and other cancers (Gui et al., 2025; Guo et al., 2025; Xiao et al., 2022). Conversely, under high-dose or sustained cisplatin treatment, excessive or dysregulated mitophagy can lead to the extensive removal of mitochondria, resulting in severe energy depletion and metabolic collapse. This mitochondrial loss can synergize with apoptotic pathways to promote programmed cell death, thereby enhancing the sensitivity of NSCLC cells to cisplatin. For example, pharmacological agents or genetic interventions that inhibit mitophagy have been reported to increase mitochondrial ROS and apoptosis, reversing cisplatin resistance (Guo et al., 2025; Yao et al., 2022; Yu et al., 2024). This context-dependent effect underscores the complexity of mitophagy regulation in NSCLC chemoresistance. The balance between mitophagy-mediated mitochondrial quality control and mitochondrial depletion determines whether tumor cells survive or succumb to cisplatin-induced stress. Moreover, the intensity and duration of cisplatin exposure, as well as the genetic and metabolic background of the tumor cells, influence this balance. The PINK1/PARKIN pathway thus acts as a critical molecular switch modulating NSCLC cell fate in response to cisplatin. Targeting this pathway to fine-tune mitophagy levels holds promise for overcoming cisplatin resistance. For instance, combining cisplatin with mitophagy modulators such as CDK9 inhibitors, BNIP3 regulators, or natural compounds that affect mitochondrial dynamics has shown potential in preclinical models (Guo et al., 2025; Yao et al., 2022; Yu et al., 2024). In summary, the dual role of PINK1/PARKIN-mediated mitophagy in NSCLC cisplatin resistance highlights its significance as a therapeutic target. Understanding the precise regulatory mechanisms and contextual factors governing mitophagy will be essential for developing

effective strategies to reverse chemoresistance and improve clinical outcomes in NSCLC patients (Gui et al., 2025; Guo et al., 2025; Yu et al., 2024)

2. Regulation of PINK1/PARKIN Pathway in NSCLC Cisplatin-Resistant Cells by Active Components of *Gynostemma pentaphyllum*

2.1 Effects of *Gynostemma pentaphyllum* Saponins on Key Protein Expression in the PINK1/PARKIN Pathway

Gynostemma pentaphyllum saponins (Gypenosides, GPs) represent the principal bioactive constituents of *Gynostemma pentaphyllum*, a traditional medicinal herb with emerging anticancer properties. Recent studies have elucidated that GPs exert a dose-dependent upregulation of pivotal proteins in the PINK1/PARKIN mitophagy pathway within cisplatin-resistant non-small cell lung cancer (NSCLC) cell lines, such as A549/DDP. This upregulation is critical because PINK1 (PTEN-induced kinase 1) and PARKIN (an E3 ubiquitin ligase) orchestrate the selective autophagic clearance of damaged mitochondria, a process known as mitophagy, which is intimately linked to cellular responses to chemotherapeutic stress. The enhancement of PINK1 and PARKIN protein levels by GPs suggests a restoration or amplification of mitophagic signaling that may counteract the mitochondrial dysfunction commonly observed in cisplatin-resistant NSCLC cells. Furthermore, GPs treatment potentiates cisplatin-induced mitochondrial membrane potential (MMP) depolarization, a key early event that stabilizes PINK1 on the outer mitochondrial membrane, thereby initiating PARKIN recruitment and activation. This effect mimics or intensifies the initial mitophagy trigger, effectively sensitizing resistant cells to cisplatin-induced cytotoxicity. The functional relevance of the PINK1/PARKIN axis in GPs-mediated sensitization is substantiated by siRNA-mediated knockdown experiments targeting PINK1 or PARKIN, which partially reverse the enhanced cytotoxicity observed with combined GPs and cisplatin treatment. These findings confirm that the PINK1/PARKIN pathway is indispensable for the chemosensitizing effect of GPs in NSCLC cells. Mechanistically, the upregulation of PINK1 and PARKIN may facilitate the removal of dysfunctional mitochondria, thereby alleviating mitochondrial stress and promoting apoptotic signaling pathways that are otherwise suppressed in resistant cells. This restoration of mitochondrial quality control could disrupt the metabolic adaptations and survival mechanisms that underpin cisplatin resistance. Collectively, these data highlight the therapeutic potential of GPs as modulators of mitophagy through the PINK1/PARKIN pathway, offering a promising strategy to overcome cisplatin resistance in NSCLC by targeting mitochondrial homeostasis and enhancing drug-induced mitochondrial damage signaling (Gui et al., 2025; Mukherjee et al., 2023; Yu et al., 2024)

2.2 Changes in Mitophagic Flux Induced by *Gynostemma pentaphyllum* Components and Their Crosstalk with Apoptosis

The combinatorial treatment of *Gynostemma pentaphyllum* saponins (GPs) with cisplatin in cisplatin-resistant NSCLC cells induces significant alterations in mitophagic flux, which is intricately linked to apoptotic processes. Experimental observations reveal a marked increase in the LC3-II/I ratio, a canonical marker of autophagosome formation, alongside accelerated degradation of the autophagy substrate p62, indicating activation of a complete autophagic flux rather than a mere accumulation of autophagosomes. Confocal microscopy further substantiates these findings by demonstrating enhanced co-localization of mitochondria, labeled with MitoTracker, and lysosomes, labeled with LysoTracker, confirming the progression of mitophagy to the lysosomal degradation stage. This augmented mitophagic flux is not an isolated cellular event but occurs concomitantly with amplified apoptotic signaling.

Notably, there is increased release of cytochrome c from mitochondria into the cytosol and heightened activation of caspase-3 and caspase-9, hallmark events of the intrinsic apoptotic pathway. The mechanistic interplay between mitophagy and apoptosis under GPs treatment may involve modulation of Bcl-2 family proteins, as evidenced by an increased Bax/Bcl-2 ratio, which favors mitochondrial outer membrane permeabilization and apoptotic progression. Additionally, GPs may influence key signaling axes such as AMPK/mTOR, which regulate both autophagy and apoptosis, thereby orchestrating a coordinated cellular response that directs mitophagy towards a pro-death outcome rather than cytoprotection. This dual activation of mitophagy and apoptosis suggests that GPs potentiate cisplatin cytotoxicity by tipping the balance of mitochondrial quality control mechanisms towards cell death, effectively overcoming the survival advantage conferred by mitophagy in resistant cells. The crosstalk between these pathways underscores the complexity of mitochondrial dynamics in chemoresistance and highlights the potential of GPs to modulate these processes synergistically to enhance therapeutic efficacy (Gui et al., 2025; Guo et al., 2025; Xu et al., 2026)

2.3 Regulation of Mitochondrial Function and Metabolic Reprogramming Downstream of *Gynostemma pentaphyllum*-Mediated Pathways

Intervention with *Gynostemma pentaphyllum* saponins (GPs) in cisplatin-resistant NSCLC cells precipitates profound disruptions in mitochondrial function and metabolic reprogramming, which are critical determinants of chemoresistance. Post-treatment analyses reveal a significant impairment of mitochondrial respiratory capacity, as evidenced by decreased oxygen consumption rates (OCR) and reduced ATP production, indicating compromised oxidative phosphorylation (OXPHOS). Concurrently, reactive oxygen species (ROS) levels exhibit a transient but marked elevation within a defined temporal window, reflecting mitochondrial oxidative stress that may serve as a pro-apoptotic signal. Metabolomic profiling further delineates the reversal of cisplatin resistance-associated metabolic adaptations by GPs, including downregulation of key glycolytic enzymes such as hexokinase 2 (HK2) and lactate dehydrogenase A (LDHA), which are typically upregulated in resistant cells to support aerobic glycolysis (Warburg effect). This suppression of glycolytic flux, coupled with exacerbated mitochondrial dysfunction, disrupts the metabolic plasticity that cancer cells exploit to survive chemotherapeutic insult. Importantly, these metabolic perturbations are both a consequence and a reinforcement of PINK1/PARKIN pathway activation, establishing a positive feedback loop wherein mitophagy-induced mitochondrial damage signals further metabolic stress, culminating in depletion of cellular bioenergetic reserves and loss of viability. This integrated disruption of mitochondrial quality control and metabolic homeostasis by GPs underscores their potential to dismantle the multifaceted resistance mechanisms in NSCLC. By targeting the nexus of mitochondrial dysfunction and metabolic reprogramming, GPs may effectively sensitize resistant NSCLC cells to cisplatin, offering a promising adjunctive therapeutic approach (Gui et al., 2025; Lu et al., 2024; Maharati et al., 2025)

3. Strategies and Prospects for Reversing NSCLC Cisplatin Resistance Based on the JiaoGuLan-PINK1/PARKIN Axis

3.1 Potential Application and Optimization of JiaoGuLan as a Chemosensitizer

Current research supports the promising role of JiaoGuLan (*Gynostemma pentaphyllum*) extracts and their purified active components, such as Gypenoside XLIX and L, as adjunctive agents to cisplatin chemotherapy in overcoming resistance in non-small cell lung cancer (NSCLC). These saponins have demonstrated anticancer properties, including the modulation of mitochondrial quality control

pathways, particularly the PINK1/PARKIN-mediated mitophagy axis, which is crucial in maintaining mitochondrial homeostasis and regulating cell fate under chemotherapeutic stress. The PINK1/PARKIN pathway, when properly activated, can promote the selective clearance of damaged mitochondria, thereby influencing apoptosis and survival in cancer cells. However, the dual role of mitophagy in cancer—either promoting survival by removing dysfunctional mitochondria or facilitating cell death when excessively activated—necessitates precise modulation to achieve chemosensitization. Optimizing the administration regimen of JiaoGuLan-derived compounds is therefore critical. For instance, a sequential treatment strategy where JiaoGuLan is used as a pretreatment to induce mitochondrial stress and initiate mitophagy, followed by cisplatin administration, may shift the balance from cytoprotective to cytotoxic mitophagy, enhancing cisplatin efficacy. This approach aligns with the concept of “priming” cancer cells to sensitize them to chemotherapy by exploiting mitochondrial vulnerabilities. Furthermore, the pharmacokinetic and pharmacodynamic profiles of JiaoGuLan components require refinement to maximize their bioavailability and tumor-targeting capabilities. The development of nanodelivery systems encapsulating JiaoGuLan active ingredients offers a promising avenue to enhance selective accumulation in tumor tissues, particularly within cisplatin-resistant cell populations, while minimizing systemic toxicity. Nanocarriers can improve solubility, stability, and controlled release, thereby potentiating the activation of the PINK1/PARKIN pathway in resistant NSCLC cells. Such targeted delivery could also overcome the heterogeneity of tumor microenvironments and drug penetration barriers. Collectively, these strategies underscore the potential of JiaoGuLan as a chemosensitizer in NSCLC, contingent upon rigorous optimization of dosing schedules and delivery platforms to harness its modulatory effects on mitochondrial quality control and reverse cisplatin resistance effectively (Chen et al., 2021; Gui et al., 2025; Guo et al., 2025; Shen et al., 2020; Zamagni et al., 2020)

3.2 Exploration of Synergistic Mechanisms with Other Targeted Therapies

The PINK1/PARKIN mitophagy pathway intersects with multiple cellular signaling networks implicated in NSCLC chemoresistance, including NF- κ B, MAPK, and Nrf2 pathways, which regulate inflammation, stress responses, and antioxidant defenses. This crosstalk presents opportunities to explore combination therapies that simultaneously target these pathways alongside JiaoGuLan-mediated mitophagy modulation. For example, co-administration of JiaoGuLan with inhibitors of NF- κ B or MAPK signaling could disrupt the survival signaling and inflammatory milieu that support resistant phenotypes, thereby synergistically enhancing cisplatin sensitivity. Additionally, the Nrf2 pathway, a master regulator of oxidative stress responses, is often upregulated in resistant NSCLC cells, contributing to detoxification and survival. Targeting Nrf2 in combination with JiaoGuLan may amplify mitochondrial oxidative stress and impair antioxidant defenses, tipping the balance toward apoptosis. Beyond these intracellular pathways, the integration of immunotherapy, particularly immune checkpoint inhibitors (ICIs), into NSCLC treatment regimens has revolutionized clinical outcomes. Emerging evidence suggests that mitophagy influences tumor immunogenicity by modulating immunogenic cell death (ICD) and antigen presentation. JiaoGuLan's regulation of PINK1/PARKIN-mediated mitophagy could enhance ICD, increasing the release of damage-associated molecular patterns (DAMPs) and tumor antigens, thereby potentiating immune recognition and response. This raises the prospect of combining JiaoGuLan with ICIs to achieve a multi-pronged attack on resistant NSCLC cells by simultaneously promoting mitochondrial dysfunction, enhancing tumor immunogenicity, and relieving immune suppression. Such combinatorial strategies require detailed mechanistic studies and preclinical validation to delineate optimal dosing, timing, and sequence to maximize synergy and minimize adverse effects. Overall, the exploration of JiaoGuLan in combination with targeted inhibitors and immunotherapies represents a

promising frontier to overcome the multifactorial nature of cisplatin resistance in NSCLC (Fouzder et al., 2024; Guo et al., 2025; Li et al., 2020; Sun et al., 2024)

3.3 Current Research Limitations and Future Directions

Despite encouraging preclinical data, the translation of JiaoGuLan-based strategies targeting the PINK1/PARKIN axis into clinical practice faces several challenges. Most existing evidence derives from in vitro cell culture and animal models, which may not fully recapitulate the complexity of human NSCLC, including tumor heterogeneity, microenvironmental influences, and pharmacokinetics. There is a pressing need for well-designed clinical trials to evaluate the safety, efficacy, and optimal administration protocols of JiaoGuLan extracts or purified compounds in combination with cisplatin. Another limitation lies in the chemical complexity of JiaoGuLan, which contains multiple saponins with potentially divergent or even antagonistic effects on the PINK1/PARKIN pathway. Dissecting the structure-activity relationships of individual gypenosides is essential to identify the key bioactive constituents responsible for chemosensitization and to develop standardized, reproducible formulations. Advanced techniques such as high-throughput screening and metabolomics could facilitate this process. Furthermore, the mechanistic role of the PINK1/PARKIN pathway in mediating JiaoGuLan's effects requires more direct validation. The application of gene editing technologies like CRISPR-Cas9 to generate PINK1 or PARKIN knockout NSCLC models would provide definitive evidence of pathway involvement and clarify whether modulation of mitophagy is necessary and sufficient for reversing cisplatin resistance. Additionally, elucidating upstream regulators and downstream effectors of the PINK1/PARKIN axis in the context of JiaoGuLan treatment is critical. This includes investigating mitochondrial protein import mechanisms, kinase cascades, and the interplay with inflammasome activation and other cell death pathways. Such comprehensive molecular mapping will enhance understanding of the signaling network and identify potential co-targets to improve therapeutic outcomes. In summary, addressing these limitations through multidisciplinary approaches integrating molecular biology, pharmacology, and clinical research will be pivotal to harnessing the full potential of JiaoGuLan-PINK1/PARKIN axis modulation in overcoming NSCLC cisplatin resistance (Guo et al., 2025; Maharati et al., 2025; Yao et al., 2022; Zhao et al., 2020)

CONCLUSION

The role of PINK1/PARKIN-mediated mitophagy in cisplatin resistance in NSCLC is dynamic and dualistic, making it a promising therapeutic target. Mitophagy can support tumor cell survival by preserving mitochondrial quality or induce cell death when excessively activated, underscoring the need for precise modulation to overcome chemoresistance. Evidence indicates that this pathway acts as a double-edged sword in NSCLC. *Gynostemma pentaphyllum* and its saponins emerge as potential natural modulators that shift this balance toward therapeutic benefit. By upregulating PINK1/PARKIN and activating complete mitophagic flux, *Gynostemma* enhances mitochondrial quality control while synergizing with apoptosis to promote cancer cell death. This dual effect can reverse cisplatin resistance and positions *Gynostemma* as a promising chemosensitizer that further weakens resistant cells through mitochondrial and metabolic disruption. Balancing these research perspectives requires acknowledging the complexity of mitophagy regulation in cancer biology. While some studies emphasize mitophagy's cytoprotective role, others reveal its capacity to induce cell death under certain conditions. This review integrates these findings by proposing that the context-dependent modulation of PINK1/PARKIN-mediated mitophagy—rather than its wholesale inhibition or activation—is critical for effective therapeutic intervention. Such a strategy necessitates a deep understanding of the molecular crosstalk

between mitophagy and apoptosis, as well as the metabolic state of cancer cells, to selectively induce vulnerability in resistant NSCLC populations.

Looking forward, translating the promising preclinical results of Gynostemma into clinical application remains a pivotal challenge. Future research must focus on optimizing its pharmacological formulations to enhance bioavailability and target specificity. Additionally, exploring combinatorial regimens that integrate Gynostemma with existing chemotherapeutics or novel agents could potentiate its sensitizing effects while minimizing toxicity. Mechanistic studies should continue to dissect the intricate signaling networks governing mitophagy and apoptosis interplay, potentially unveiling biomarkers for patient stratification and treatment monitoring.

In conclusion, the dynamic dual role of PINK1/PARKIN-mediated mitophagy in NSCLC cisplatin resistance represents both a challenge and an opportunity in cancer therapeutics. Harnessing natural compounds like Gynostemma pentaphyllum to modulate this pathway offers a promising avenue to overcome drug resistance. A balanced, mechanism-driven approach that integrates molecular insights with clinical translation efforts will be essential to develop effective, mitochondria-targeted chemosensitization strategies, ultimately improving outcomes for patients with resistant NSCLC.

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RESEARCH ON THE DEVELOPMENT AND ENHANCEMENT OF THE INTERNAL TEACHING QUALITY ASSURANCE MECHANISM IN HIGHER EDUCATION INSTITUTIONS: A CASE STUDY OF WENSHAN UNIVERSITY, YUNNAN PROVINCE

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ABSTRACT

With the popularization of higher education in China, the construction of internal teaching quality assurance mechanism has become the core support for the connotative development of colleges and universities. This study takes Wenshan University, a local application-oriented undergraduate university in the southwest border ethnic area, as the research object, and adopts mixed research methods such as literature research, questionnaire survey and semi-structured interview to systematically diagnose the current situation of its internal teaching quality assurance mechanism. The study finds that the university has initially constructed a 'six-in-one' teaching quality assurance system, but there are still six prominent problems: attenuation of quality concept transmission, weak awareness of characteristic requirements; insufficient school-based characteristics of quality standards; questioned validity of quality monitoring tools; breakpoints in the feedback and improvement chain; structural imbalance in organizational collaboration; and unbalanced development of quality culture. Based on this, improvement strategies are put forward from six dimensions: concept transmission, standard optimization, monitoring quality improvement, feedback closed-loop, collaborative efficiency, and culture cultivation, so as to provide references for Wenshan University and similar universities to improve their internal quality assurance systems.

Keywords: Internal Quality Assurance; Local Application-oriented Undergraduate Universities; Teaching Quality; Southwest Border Ethnic Areas

INTRODUCTION

Higher education is an important symbol of national development, bearing the core missions of talent cultivation, scientific and technological progress and social services. In the popularization stage, education quality has become the fundamental standard to measure the running level of colleges and universities [1]. Establishing a scientific and effective internal quality assurance system is an inevitable requirement to implement the fundamental task of fostering virtue through education and respond to the society's expectation for high-quality education. Policy documents such as *China Education Modernization 2035* and *Overall Plan for Deepening the Reform of Education Evaluation in the New*

Era clearly propose to build an education system and mechanism conducive to high-quality development, pointing out the direction for the construction of university quality assurance systems.

At present, the internal quality assurance systems of colleges and universities in China are facing multiple challenges: in terms of organizational structure, the functions of quality assurance are fragmented, and inter-departmental collaboration is insufficient; in terms of implementation efficiency, there is a tendency of "emphasizing form over connotation", and assessment indicators are over-quantified; in terms of environmental adaptation, it is difficult to cope with changes brought by online teaching, industrial upgrading and diversified student sources [2].

As a local application-oriented undergraduate university in the southwest border ethnic area, Wenshan University is typical among similar universities in terms of its development history, resource endowment and service orientation. The university faces common problems such as short running history, weak teaching staff and limited funds, and the scientificity, effectiveness and implementability of its quality assurance mechanism need to be optimized urgently [3]. Based on this, this study focuses on three core issues: the effectiveness of the organizational structure and operation mechanism of quality assurance; the core issues of quality standards, monitoring systems and resource allocation; and the improvement paths combined with domestic and international experiences, so as to provide theoretical basis and practical guidance for Wenshan University and similar universities.

METHODOLOGY

This study follows the logic of "theoretical guidance - empirical diagnosis - comparative reference - countermeasure construction", adopts mixed research methods, focuses on the closed-loop process of quality assurance at the undergraduate teaching level, and the research scope covers four aspects: institutional documents, operation process, resource support and comparative reference. The specific research methods are as follows:

Sub-Section 1: Literature Research Method

Sort out the quality assurance policy documents of the state, Yunnan Province and Wenshan University, summarize relevant domestic and international theories and practical models of internal teaching quality assurance for local application-oriented universities, and construct a comprehensive research and analysis framework for the study, laying a theoretical foundation for the subsequent empirical diagnosis and countermeasure construction.

Sub-Section 2: Empirical Survey Method

Semi-structured Interview

Conduct stratified sampling interviews with 19 subjects including university leaders, heads of functional departments, deans of secondary colleges, program leaders and backbone teachers of Wenshan University. The interview content focuses on the cognition of quality assurance concepts, the operation of the quality assurance system, and the actual demands for quality assurance work, so as to collect multi-subject cognition and demands of the internal teaching quality assurance mechanism.

Questionnaire Survey

Design a special questionnaire for full-time teachers of Wenshan University around the core dimensions of quality concept cognition, quality standards, monitoring and evaluation, feedback improvement, organizational collaboration and quality culture. Determine the sample size of 217 according to the Krejcie and Morgan (1970) sample scale, actually distribute 232 copies, and recover 232 valid questionnaires with an effective recovery rate of 100%.

Sub-Section 3: Data Analysis Method

Use SPSS statistical software to conduct descriptive statistics, reliability and validity analysis on the obtained questionnaire data to ensure the scientificity and validity of the quantitative data; conduct coding and systematic qualitative analysis on the interview text data, and form a "triangulation" verification with the questionnaire data to comprehensively and accurately reflect the current situation of the internal teaching quality assurance mechanism of Wenshan University.

RESULTS

This study conducted a comprehensive investigation and analysis on the internal teaching quality assurance mechanism of Wenshan University through multiple research methods, and the basic information of the survey respondents and the core problems of the quality assurance mechanism are as follows:

Basic Information of Respondents

The questionnaire survey covers teachers of different professional titles, academic degrees, ages, administrative positions and teaching years of Wenshan University, and the sample has good representativeness. The specific distribution of the basic information of the respondents is shown in Table 1.

Table 1
Basic Information of Survey Respondents

Questionnaire Item	Options	Frequency	Percentage (%)
Academic Title	Professor	33	14.2
	Associate Professor	60	25.9
	Lecturer	120	51.7
	Assistant	19	8.2
	Total	232	100.0
Highest Degree	Doctorate	55	23.7
	Master's Degree	155	66.8
	Bachelor's Degree	22	9.5

	Total	232	100.0
Age	Under 30	19	8.2
	31-40	110	47.4
	41-50	75	32.3
	Over 51	28	12.1
	Total	232	100.0
Hold an administrative position	YES	100	43.1
	NO	132	56.9
	Total	232	100.0
Years of Teaching at the University	Less than 3 years	76	32.8
	3-10 years	111	47.8
	11-20 years	18	7.8
	More than 20 years	27	11.6
	Total	232	100.0

Among the respondents, lecturers account for the highest proportion (51.7%) in professional titles, and senior professional titles (professor + associate professor) account for 40.1%; master's degree holders are the main body (66.8%) in academic degrees, and doctoral degree holders account for 23.7%; young and middle-aged teachers aged 31-50 account for 79.7%, which is the core force of teaching; 43.1% of the teachers hold administrative positions, covering both teaching and management personnel.

Core Problems of the Internal Teaching Quality Assurance Mechanism

(1) Quality Concepts and Cognition

Teachers' cognition of quality assurance concepts and related systems shows an unbalanced state, and the awareness of characteristic talent cultivation requirements is weak, as shown in Table 2. Teachers have a relatively high awareness of the concept of "student-centered, outcome-oriented, continuous improvement" (mean score 3.69), but more than 35% of teachers are at the "neutral" level or below in the understanding of the specific connotation of the "six-in-one" system. The awareness of the

special requirements for talent cultivation of "border characteristics" and "ethnic characteristics" is the weakest (mean score 3.28), with 58% of teachers having insufficient understanding. In addition, teachers' participation in quality-related activities and their mastery of problem reporting channels also need to be improved.

Table 2
Quality Assurance Awareness and Participation

Questionnaire Item	Mean	Std. Dev.
Have a clear understanding of the university's quality assurance philosophy of "student-centered, output-oriented, and continuous improvement."	3.69	1.10
Be familiar with the university's teaching quality standard system (e.g., syllabus standards, practical teaching standards).	3.68	1.16
Understand the basic framework and content of the "Six-in-One" teaching quality assurance system.	3.68	1.00
Frequently participate in teaching quality-related meetings or training activities organized by the department/school.	3.55	1.08
Know how to report quality issues found in teaching through formal channels.	3.50	1.17
Understand the university's special requirements for talent cultivation (serving the stability of grassroots border communities and adaptability to multi-ethnic cultures).	3.28	0.94

Note: The scoring standard is 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree

(2) Quality Standards and Monitoring

The school-based characteristics of the quality standard system are insufficient, and the validity of partial quality monitoring tools is questioned by teachers, as shown in Table 3 and Table 4. In terms of quality standards, the reflection of the school's "application-oriented" educational positioning is vague (mean score 3.44), the consideration of the particularity of talent cultivation in ethnic areas is insufficient (mean score 3.43), and the adaptability of the curriculum quality standards to different majors needs to be further improved. In terms of quality monitoring, the validity of student evaluation of teaching indicators is questioned (mean score 3.52), 31% of teachers hold a neutral attitude; the constructive of teaching supervision feedback is insufficient (mean score 3.50), with a high degree of data dispersion; the "Five Audits, Six Checks, and Seven Evaluations" work has achieved good results in promoting teaching standardization (mean score 3.63), but its role in promoting teaching improvement and development is insufficient.

Table 3

Situation of the Quality Standards Section

Questionnaire Item	Mean	Std. Dev.
The current teaching quality standards reflect the university's "application-oriented" educational positioning.	3.44	0.98
The curriculum quality standards consider the characteristics and needs of different majors.	3.59	1.01
The quality evaluation fully considers the particularities of talent cultivation in ethnic regions.	3.43	1.07

Note: The scoring standard is 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree

Table 4
Situation of the Quality Monitoring Section

Questionnaire Item	Mean	Std. Dev.
The indicators of student evaluation of teaching accurately reflect the core elements of teaching (content, methods, effectiveness).	3.52	1.05
The feedback from teaching supervision is constructive and helpful for teaching improvement.	3.50	1.15
The process of course quality grading evaluation is fair and transparent.	3.50	1.18
The "Five Audits, Six Checks, and Seven Evaluations" work has effectively promoted teaching standardization.	3.63	1.14

Note: The scoring standard is 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree

(3) Feedback, Improvement and Organizational Collaboration

The feedback and improvement chain has obvious breakpoints, and the cross-departmental organizational collaboration mechanism is not smooth, as shown in Table 5 and Table 6. In terms of feedback and improvement, the feedback information obtained by teachers is not specific and clear enough (mean score 3.36), 45% of the teachers think it is difficult to guide targeted teaching improvement; the review mechanism for improvement effectiveness is the weakest link (mean score 3.33), 57% of the teachers think the review is not in place, leading to the frequent recurrence of quality problems. In terms of organizational collaboration, cross-departmental quality information sharing and communication channels are not smooth (mean score 3.35), negative evaluations account for 19.8%, and the problem of "information islands" is prominent; the division of labor between university and college levels in quality assurance is basically clear, but the "sense of presence" of functional departments in teaching support is not strong, and 34.5% of the teachers give a "neutral" evaluation.

Table 5
Information Feedback and Improvement Section

Questionnaire Item	Mean	Std. Dev.
Can receive feedback from student evaluations, teaching supervision, etc., in a timely manner.	3.48	0.94
The feedback information is specific and clear, which helps make targeted improvements.	3.36	0.96
The university has an effective "work order-rectification" mechanism for problems identified through quality monitoring.	3.43	0.98
The review mechanism for improvement effectiveness is in place to prevent recurring problems.	3.33	1.00

Note: The scoring standard is 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree

Table 6
Organizational Collaboration

Questionnaire Item	Mean	Std. Dev.
The university and college levels have clear division of labor and smooth collaboration in quality assurance.	3.55	1.09
Functional departments can provide effective support for teaching.	3.54	1.04
Cross-departmental quality information sharing and communication channels are smooth.	3.35	1.12

Note: The scoring standard is 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree

(4) Quality Culture

The construction of quality culture is unbalanced, the individual willingness of teachers for teaching reform is strong, but the collective quality consciousness is weak, as shown in Table 7. Teachers have a strong willingness to invest energy in teaching reform and innovation (mean score 3.63), and the university's support for teaching-related resources and training has a relatively high recognition (mean score 3.67). However, the collective consciousness of pursuing high-quality teaching among faculty is weak (mean score 3.34), and the self-reflection, self-inspection and self-correction consciousness is insufficient (mean score 3.37). The atmosphere of "daring to expose problems and actively seeking improvement" has not yet been formed in the school, and 43% of the teachers give a "neutral" evaluation on this aspect.

Table 7
Quality Culture Perception and Development Needs

Questionnaire Item	Mean	Std. Dev.
Have felt the school's great emphasis on teaching quality.	3.57	1.09
Pursuing high-quality teaching has become a conscious action among faculty.	3.34	1.11
The university has formed an atmosphere that dares to expose problems and actively seeks improvement.	3.52	0.95
Faculty generally possess a consciousness of "self-reflection, self-inspection, and self-correction."	3.37	1.00
Can receive an effective response from the university when needing teaching training, curriculum development funding, etc.	3.67	1.10
Quality evaluation results are mainly used to help faculty improve, rather than for simple rewards and punishments.	3.53	1.03
Am willing to invest more energy in teaching reform and innovation.	3.63	1.05

Note: The scoring standard is 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, 5=Strongly Agree

(5) Ranking of Improvement Directions

Teachers have a clear cognition of the priority of improving the internal quality assurance mechanism, as shown in Table 8. The top three most needed improvement directions selected by teachers are: information feedback and closed-loop improvement (150 selections), organizational structure and collaboration mechanism (140 selections), and quality standard system (120 selections). Resource condition assurance and information technology and data platform support are the aspects with the lowest demand for improvement, which indicates that the current resource support and technical platform of Wenshan University can basically meet the basic needs of teaching quality assurance work.

Table 8
Ranking of Improvement Directions for the Internal Quality Assurance Mechanism

Ranking	Improvement Direction	Frequency of Selections
1	Information Feedback and Closed-Loop Improvement	150
2	Organizational Structure and Collaboration Mechanism	140

3	Quality Standard System	120
4	Monitoring and Evaluation Methods	100
5	Quality Culture Cultivation	70
6	Characteristic Development and Classified Evaluation Mechanism	50
7	Resource Condition Assurance	40
8	Information Technology and Data Platform Support	26
-	Other	0

CONCLUSION AND FUTURE WORK

Conclusion

Wenshan University has initially constructed a "six-in-one" teaching quality assurance system with goal orientation, quality standards, cultivation process, organization and management, condition support, and monitoring and evaluation as the core, and has achieved certain results in promoting teaching standardization and providing basic resource support for teaching. However, the internal teaching quality assurance mechanism of the university still faces systematic and multi-dimensional problems, which are mainly manifested in six aspects: attenuation of quality concept transmission and weak awareness of characteristic talent cultivation requirements; insufficient school-based and characteristic of quality standards; questioned validity of partial quality monitoring tools and insufficient developmental function; obvious breakpoints in the feedback and improvement chain and imperfect review mechanism; structural imbalance in organizational collaboration and prominent "information islands" problem; and unbalanced development of quality culture and weak collective quality consciousness. These problems restrict the transformation of the school's teaching quality assurance work from "external regulation" to "connotative consciousness", and affect the further improvement of the connotative development level of the school's teaching quality.

Improvement Strategies

Aiming at the prominent problems of the internal teaching quality assurance mechanism of Wenshan University, combined with the development characteristics of local application-oriented undergraduate universities in southwest border ethnic areas, the following six targeted improvement strategies are put forward:

- 1. Strengthen Concept Transmission and School-based Transformation:** Construct a hierarchical transmission mechanism of university-college-teacher for quality assurance concepts, refine the "border characteristics" and "ethnic characteristics" into specific talent cultivation standards and observation points, and incorporate them into key links such as curriculum evaluation and professional assessment to enhance teachers' awareness of characteristic talent cultivation.

2. Improve the Quality Standard System: Establish a three-level quality standard system of "university-level general standards - program-level common standards - curriculum-level individual standards", add characteristic observation points such as "competence in serving border grassroots" and "multi-ethnic cultural communication ability", and enhance the school-based and professional adaptability of quality standards.

3. Optimize Quality Monitoring Tools: Reform the indicators of student evaluation of teaching, strengthen the orientation of learning experience and teaching outcomes; improve the constructiveness of teaching supervision feedback, and establish a complete "lecture listening - feedback - follow-up" mechanism; deepen the developmental function of the "Five Audits, Six Checks, and Seven Evaluations" work, and introduce value-added evaluation to realize the transformation from "standardization supervision" to "developmental supervision".

4. Open up the Feedback and Improvement Closed-loop: Establish a "granularization" processing mechanism for teaching quality feedback information to ensure the specificity and clarity of feedback content; clarify the rectification responsibilities and acceptance standards of quality problems, strengthen the review mechanism for improvement effectiveness, and initiate accountability for the recurrence of problems to form a complete "rectification - review - re-rectification" cycle.

5. Strengthen Organizational Collaboration: Further clarify the rights and responsibilities of the university and college levels in quality assurance work, build a unified teaching quality data sharing platform to break the inter-departmental information barriers; establish a regular inter-departmental joint meeting system for quality assurance, and incorporate "serving teaching" into the performance assessment of functional departments to improve the initiative and effectiveness of teaching support.

6. Cultivate the "Five-self" Quality Culture: Formulate a special action plan for the construction of teaching quality culture, establish a quality improvement case sharing system and a special fund for teaching innovation to encourage teachers' teaching reform and innovation; carry out themed activities such as quality culture month and teaching salons, and promote the transformation of individual quality beliefs into collective consensus, and cultivate the quality culture of self-reflection, self-inspection, self-correction, self-improvement and self-promotion.

Future Work

In the follow-up research, on the basis of this study, we can expand the research scope to more local application-oriented undergraduate universities in southwest border ethnic areas, carry out comparative research on the internal teaching quality assurance mechanisms of universities with different development scales and resource endowments, and further enrich the theoretical system of internal teaching quality assurance for local application-oriented undergraduate universities in border ethnic areas. At the same time, we can track and evaluate the implementation effect of the improvement strategies proposed in this study in Wenshan University, adjust and optimize the strategies according to the actual implementation effect, and form a "research - practice - feedback - optimization" closed-loop research model to provide more targeted and practical reference for the construction of internal teaching quality assurance mechanisms of similar universities.

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DEVELOPMENT OF DANCE EDUCATION MANAGEMENT FOR KINDERGARTEN TEACHER IN WENSHAN UNIVERSITY

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ABSTRACT

This research focuses on the dance education management for kindergarten teacher majors in Wenshan University, aiming to study the current development level of dance education management and propose targeted development guidelines. By adopting the research methods of questionnaire survey, interview and data analysis, the research comprehensively investigates the status quo of curriculum setting, teaching implementation, teacher team construction and evaluation system of dance education in the preschool education major of Wenshan University. The results show that the dance education of Wenshan University has a certain foundation in curriculum construction, but there are problems such as the disconnection between teaching content and kindergarten practical needs, the single teaching method and the imperfect evaluation system. Based on the research results, the research puts forward development guidelines from the aspects of optimizing curriculum system, innovating teaching mode, strengthening teacher team construction and improving evaluation mechanism, so as to improve the professional level of dance education for kindergarten teacher majors in Wenshan University and cultivate high-quality preschool education talents who meet the social development needs.

Keywords: Wenshan University; Kindergarten Teacher; Dance Education Management; Development Guideline

INTRODUCTION

Dance education is an important part of the art education of preschool education major, and it is also a key skill that kindergarten teachers must master. Good dance education ability can help kindergarten teachers carry out art teaching activities, stimulate children's artistic interest and promote the all-round development of children's physical and mental health. Wenshan University, as a local undergraduate college serving the basic education development of Wenshan Prefecture, takes the cultivation of high-quality kindergarten teachers as an important talent training goal of preschool education major, and sets dance courses in the curriculum system. However, with the continuous development of preschool education in China, the requirements for the dance education ability of kindergarten teachers are constantly improving, and the traditional dance education management mode is facing new challenges and problems.

At present, the research on dance education for preschool education majors in China mainly focuses on the reform of teaching content and methods, and there are few targeted studies on the dance

education management of local undergraduate colleges . Wenshan Prefecture has rich ethnic cultural resources, and the integration of local ethnic dance culture into the dance education of kindergarten teacher majors is an important development direction . However, the current dance education management of Wenshan University has not fully combined with local characteristics, and there are some problems such as the lack of localization of teaching content and the insufficient connection between talent training and local preschool education needs.

This research takes the dance education management for kindergarten teacher majors in Wenshan University as the research object, clarifies the current development level of dance education management through empirical research, and combines the development needs of local preschool education and the professional characteristics of kindergarten teachers to propose scientific and feasible development guidelines. The research is of great significance to improve the dance education management level of Wenshan University, optimize the talent training mode of preschool education major, and promote the high-quality development of preschool education in Wenshan Prefecture. At the same time, it can also provide reference for the dance education management of other local undergraduate colleges with similar regional characteristics.

METHODOLOGY

This research adopts a combination of qualitative and quantitative research methods, and comprehensively uses questionnaire survey, interview method, document analysis method and statistical analysis method to carry out in-depth research on the dance education management for kindergarten teacher majors in Wenshan University, so as to ensure the objectivity and accuracy of the research results.

Sub-Section 1: Questionnaire Survey

The research designed a "Questionnaire on the Current Situation of Dance Education Management for Kindergarten Teacher Majors in Wenshan University", which is divided into four parts: curriculum setting, teaching implementation, teacher team and evaluation system. The survey objects are 200 preschool education majors (junior and senior grades) who have taken dance courses and 30 dance teachers and preschool education professional leaders of Wenshan University. A total of 230 questionnaires were distributed in this survey, 218 valid questionnaires were recovered, and the effective recovery rate was 94.78%. The statistical analysis of the questionnaire data was carried out by using Excel software, and the current development level of dance education management was sorted out and summarized.

Sub-Section 2: Interview Method

On the basis of the questionnaire survey, the research selected 10 dance teachers, 5 preschool education professional leaders and 10 outstanding graduates who are engaged in kindergarten teaching work as the interview objects. The semi-structured interview outline was formulated, and the in-depth interview was carried out around the problems existing in dance education management, the needs of kindergarten for teachers' dance ability and the suggestions for the development of dance education. The interview content was recorded and sorted out, and the key information was extracted for qualitative analysis.

Sub-Section 3: Document Analysis Method

The research collected and sorted out the relevant documents such as the talent training program, curriculum syllabus, teaching plan and teaching evaluation standards of the preschool education major of Wenshan University, and combed the current situation of dance education curriculum setting, teaching objectives and evaluation system. At the same time, the research collected domestic and foreign research results on dance education management for preschool education majors, as well as the relevant policies and regulations of national and local preschool education development, to provide theoretical support and reference for the research.

RESULTS

Through the comprehensive analysis of questionnaire survey, interview and document data, the research clarifies the current development level of dance education management for kindergarten teacher majors in Wenshan University, and finds out the existing problems and deficiencies. The specific research results are as follows.

Current Level of Dance Education Management

The dance education of preschool education major in Wenshan University has a certain foundation in the construction of management system. The talent training program clearly defines the teaching objectives of dance courses, and sets up professional courses such as Dance Basics, Children's Dance Choreography and Kindergarten Dance Activity Design, covering the basic skills and teaching application of dance. The teacher team is mainly composed of professional dance teachers and preschool education teachers, with a reasonable educational background and professional title structure on the whole. In the teaching implementation, the combination of theoretical teaching and practical training is adopted, and certain practical teaching links are set up to cultivate students' practical operation ability.

Table 1 shows the evaluation results of the current level of dance education management for kindergarten teacher majors in Wenshan University (score full mark is 5 points). From the data in the table, it can be seen that the overall score of dance education management is 3.62 points, which is at a medium level. Among them, the score of curriculum setting is the highest (3.85 points), which indicates that the curriculum system of dance education has a relatively complete framework; the scores of teaching implementation (3.68 points) and teacher team (3.56 points) are at a medium level; the score of evaluation system is the lowest (3.20 points), which reflects that the current evaluation system is the weakest link of dance education management.

Table 1
Evaluation of the Current Level of Dance Education Management (Wenshan University, Kindergarten Teacher Major)

No.	Evaluation Dimension	Average Score	Development Level	Main Performance
1	Curriculum Setting	3.85	Medium-Good	Complete curriculum framework, covering basic skills and teaching application; lack of localization and characteristic content
2	Teaching Implementation	3.68	Medium	Combination of theory and practice; single teaching method,

				insufficient simulation of kindergarten teaching scene
3	Teacher Team	3.56	Medium	Reasonable structure of educational background and professional title; insufficient experience in kindergarten teaching and ethnic dance research
4	Evaluation System	3.20	Medium-Low	Mainly based on skill assessment; lack of comprehensive evaluation of teaching ability and innovation ability
5	Overall	3.62	Medium	Basic perfect management system; obvious short board in evaluation and teaching innovation

Existing Problems of Dance Education Management

Combined with the interview content and document analysis results, on the basis of clarifying the current development level, the research further sorts out the prominent problems existing in the dance education management for kindergarten teacher majors in Wenshan University, as shown in Table 2. The problems are mainly concentrated in four aspects: curriculum system, teaching mode, teacher team and evaluation mechanism, and each problem is closely related to the training of students' dance education ability and the connection with kindergarten practical teaching needs.

Table 2
Main Problems of Dance Education Management (Wenshan University, Kindergarten Teacher Major)

No.	Problem Category	Specific Performance	Influence on Talent Training
1	Curriculum System	1. Disconnection between teaching content and kindergarten practical needs; 2. Lack of integration of Wenshan ethnic dance culture; 3. Insufficient proportion of practical curriculum	Students master theoretical knowledge and basic skills but lack the ability to apply them to kindergarten teaching; unable to combine local cultural resources to carry out characteristic dance activities
2	Teaching Mode	1. Dominance of traditional teacher-centered teaching method; 2. Insufficient simulation of kindergarten teaching scene; 3. Lack of	Students' learning initiative and creativity are not stimulated; insufficient adaptability to kindergarten dance teaching scene

		diversified teaching means such as multimedia and situational teaching	
3	Teacher Team	1. Teachers lack practical experience in kindergarten dance teaching; 2. Insufficient research and teaching ability of ethnic dance; 3. Lack of regular professional training and exchange opportunities	The teaching content is divorced from the actual needs of kindergarten; unable to effectively teach students ethnic dance knowledge and choreography skills
4	Evaluation Mechanism	1. Overemphasis on the assessment of dance skills and theoretical knowledge; 2. Lack of comprehensive evaluation of students' teaching design, activity organization and innovation ability; 3. No formative evaluation throughout the whole teaching process	Students only pay attention to the mastery of skills and ignore the cultivation of teaching application ability; it is impossible to comprehensively and objectively evaluate students' dance education ability

Demand of Kindergarten for Teachers' Dance Education Ability

Through the interview of outstanding graduates engaged in kindergarten teaching work, the research finds that kindergartens in Wenshan Prefecture have clear requirements for the dance education ability of kindergarten teachers: first, they need to have solid dance basic skills and the ability to design and organize kindergarten dance activities suitable for children's physical and mental development characteristics ; second, they need to have the ability to integrate local ethnic dance culture into kindergarten dance teaching and carry out characteristic art education activities; third, they need to have the ability to use diversified teaching methods to stimulate children's interest in dance learning and promote the all-round development of children. The current dance education of Wenshan University has not fully met the above three kinds of needs, which is the main direction of the optimization and improvement of dance education management.

CONCLUSION AND FUTURE WORK

Research Conclusion

This research takes the dance education management for kindergarten teacher majors in Wenshan University as the research object, through the combination of qualitative and quantitative research methods, systematically studies the current development level of dance education management and draws the following conclusions:

1. The dance education management of preschool education major in Wenshan University is at a medium development level on the whole, with a relatively complete curriculum framework and a basic

reasonable teacher team structure, and has achieved certain results in the combination of theoretical teaching and practical training.

2. There are prominent problems in the dance education management, such as the disconnection between curriculum content and kindergarten practical needs, the single teaching mode, the insufficient practical experience of teachers and the imperfect evaluation system, among which the evaluation system is the most obvious short board.

3. The dance education ability of students trained by the current dance education management mode cannot fully meet the actual needs of kindergartens in Wenshan Prefecture, especially the lack of the ability to integrate local ethnic dance culture into kindergarten dance teaching and design characteristic dance teaching activities.

The root of the above problems is that the current dance education management of Wenshan University is not fully oriented to the demand of local preschool education development, and the talent training mode is relatively traditional, which fails to effectively combine the professional characteristics of kindergarten teachers and regional cultural characteristics.

Development Guidelines of Dance Education Management

In view of the current situation and existing problems of dance education management, combined with the demand of kindergartens for teachers' dance education ability and the development characteristics of local ethnic culture, the research puts forward the following development guidelines for the dance education management of kindergarten teacher majors in Wenshan University:

1. Optimize the curriculum system and integrate local characteristics: On the basis of retaining the existing core courses such as Dance Basics and Children's Dance Choreography, increase the proportion of practical courses such as Kindergarten Dance Activity Simulation and On-the-job Practice; set up elective courses such as Wenshan Ethnic Dance Culture and Ethnic Children's Dance Choreography, integrate the rich ethnic dance resources of Wenshan Prefecture into the curriculum content, and realize the localization and characteristic of dance education .

2. Innovate the teaching mode and focus on practical training: Change the traditional teacher-centered teaching method, adopt the student-centered teaching mode such as situational teaching, project-driven teaching and simulation teaching; build a kindergarten dance teaching simulation laboratory, simulate the actual teaching scene of kindergarten, and cultivate students' ability of teaching design and activity organization; use multimedia, AR and other modern teaching means to enrich teaching forms and improve students' learning initiative .

3. Strengthen the construction of teacher team and improve professional ability: Carry out targeted training for existing teachers, organize teachers to go to kindergartens for on-the-job practice and research, and improve their practical teaching experience; introduce professional teachers with ethnic dance research background and kindergarten teaching experience; establish a long-term exchange and cooperation mechanism with local dance associations and kindergartens, and invite industry experts to carry out regular lectures and teaching guidance .

4. Improve the evaluation mechanism and implement comprehensive evaluation: Establish a multi-dimensional and comprehensive evaluation system combining formative evaluation and summative evaluation, and change the single evaluation mode of skill assessment and theoretical examination; the evaluation content includes dance basic skills, teaching design ability, activity organization ability,

innovation ability and ethnic dance application ability; the evaluation subjects include teachers, students and kindergarten front-line educators, so as to realize the objectivity and comprehensiveness of evaluation.

Future Research Prospects

This research has carried out a systematic study on the dance education management for kindergarten teacher majors in Wenshan University, but there are still some deficiencies. In the future research, the follow-up research can be carried out from the following aspects: first, track and investigate the implementation effect of the proposed development guidelines, and adjust and optimize the guidelines according to the actual implementation situation; second, expand the research scope, carry out comparative research with the dance education management of other local undergraduate colleges in Yunnan Province, and summarize the universal development experience; third, carry out in-depth research on the integration of ethnic dance culture into the dance education of preschool education major, and form a set of systematic and operable teaching materials and teaching methods. At the same time, it is hoped that Wenshan University can take this research as an opportunity, further strengthen the reform and innovation of dance education management, continuously improve the talent training quality of preschool education major, and make greater contributions to the high-quality development of preschool education in Wenshan Prefecture.

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CURRENT SITUATION AND DEVELOPMENT STRATEGIES OF TEACHER MANAGEMENT AND TEACHER TEAM BUILDING IN BORDERLAND UNIVERSITIES - A CASE STUDY OF YUNNAN WENSHAN UNIVERSITY

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ABSTRACT

This study explores the current situation and optimization paths of teacher management and faculty team building in Chinese borderland universities, taking Yunnan Wenshan University as a typical case. Guided by the Push-Pull Theory, Resource Curse Theory, and Ethnic Education Theory, a unique "Geography- Policy- Culture" three-dimensional conceptual framework for borderland universities was constructed. A mixed-methods approach was adopted, including a questionnaire survey of 250 valid samples and in-depth interviews with 5 key informants, to systematically analyze the core challenges of faculty construction in the case university. The results show that Wenshan University's faculty team construction is at a moderate level, with three prominent problems: unbalanced faculty structure, general talent retention intention, and inadequate adaptability of management mechanisms. Hierarchical and operable optimization suggestions are put forward from the policy, institutional and individual levels to tackle these challenges. This study enriches the theoretical paradigm of faculty management in Chinese borderland universities and provides practical references for similar institutions in ethnic border areas to optimize teacher team building and enhance regional service capabilities.

Keywords: Borderland Universities; Faculty Team Building; Teacher Management;

INTRODUCTION

Borderland universities are core carriers of regional talent cultivation, scientific research, and social services in China, undertaking the dual missions of promoting local economic and social development and consolidating border stability. As an important part of China's higher education system, they play an irreplaceable role in bridging urban and rural development gaps and promoting ethnic integration. Located in southwest China, Yunnan Province is a key gateway for China's opening-up to South Asia and Southeast Asia, and its borderland universities are tasked with cultivating compound talents rooted in border areas and promoting cross-border educational and cultural cooperation (Akcaoglu & Arsal, 2024). However, influenced by remote geographical locations, weak local economic

foundations, and multi-ethnic cultural integration, Yunnan's borderland universities face unique challenges in teacher management and faculty team building, which restrict their high-quality development and regional service capacity.

Yunnan Wenshan University, located in the southeastern border of Yunnan (adjacent to Vietnam), is a typical representative of borderland universities with characteristics of border location, ethnic diversity, and underdevelopment. Its dilemmas in faculty construction, such as talent loss and structural imbalance, are highly representative of similar institutions in China's ethnic border areas. Existing research on university faculty management has mostly focused on the economically developed eastern regions or national key universities (Li & Cheng, 2021), with insufficient systematic and targeted research on borderland universities in ethnic minority areas. In view of this, this study takes Wenshan University as the research object, constructs a targeted analytical framework, and systematically analyzes the current situation, core challenges, and optimization strategies of its teacher management and faculty team building. The research not only has important theoretical significance for enriching the research on faculty management in borderland universities but also provides practical references for the high-quality development of borderland higher education in China and the implementation of national border revitalization strategies.

OBJECTIVE

1. To investigate the current level of teacher management and faculty team building in Yunnan Wenshan University, a typical Chinese borderland university, and clarify the core dilemmas and their formation mechanisms.
2. To propose hierarchical and operable optimization strategies for teacher management and faculty team building in Chinese borderland universities based on the case study, combining the unique characteristics of borderland areas.

METHODOLOGY

1. Participants and Sample

This study adopts an explanatory sequential mixed methods design, which combines quantitative and qualitative research to achieve complementary advantages and improve the depth and credibility of research results. The research population consists of 653 full-time teachers from 7 faculties of Yunnan Wenshan University (as of May 2025). Based on the Krejcie and Morgan Sample Size Table, 250 teachers were selected as the questionnaire sample via stratified random sampling (stratified by academic rank, disciplinary type, and age) to ensure the sample representativeness. For the qualitative phase of the study, 5 key informants were selected through purposive sampling, including department-level administrators, functional department directors, young faculty members under the age of 35, and leaders of characteristic disciplines, for in-depth one-on-one interviews.

2. Research Tools and Data Analysis

Research tools include a structured questionnaire and a semi-structured interview protocol. Based on the 'Geography-Policy-Culture' conceptual framework, the questionnaire was designed

with 6 dimensions and 48 items (5-point Likert scale), which measures the balance of faculty structure, talent retention intention, policy perception, cultural adaptation, academic support, and the adaptability of management mechanisms. The questionnaire passed reliability and validity tests (Cronbach's α coefficient of the overall questionnaire is 0.89, KMO=0.872, $p<0.001$), indicating good reliability and validity. The semi-structured interview protocol covers 5 core modules (career background, talent retention challenges, management mechanism perceptions, development suggestions, characteristic discipline-specific insights) with 18 key questions, to supplement and explain quantitative data.

Quantitative data were collected via online and paper-based questionnaires (recovery rate 94.8%, effective rate 97.7%), and analyzed using SPSS 26.0 for descriptive statistics, ANOVA, and correlation analysis. Qualitative data were collected through in-depth one-on-one interviews (45–70 minutes per session), and coded and analyzed using NVivo 12 based on grounded theory. The two types of data were integrated through a joint display table to realize cross-validation and complementarity.

RESULTS

1. Sample Demographic Characteristics

The 250 valid respondents reflect the typical structural characteristics of Wenshan University's faculty team, which is consistent with the overall situation of borderland universities in Yunnan Province (Yunnan Provincial Department of Education, 2023). The specific sample structure is shown in Table 1.

Table 1. Sample Demographic Characteristics of Wenshan University Faculty

Dimension	Category	Proportion (%)
Gender	Male	64.80
	Female	35.20
Age	≤35 years old	29.60
	36-45 years old	38.80
	≥46 years old	31.60
Education	Doctoral Degree	13.20
	Master's Degree & Below	86.80
Academic Rank	Professor	11.20
	Associate Professor	42.40

	Lecturer & Below	46.40
Discipline	Traditional Basic Disciplines	54.80
	Emerging Applied Disciplines	45.20

It can be seen from Table 1 that the faculty team of Wenshan University has obvious structural characteristics: male teachers account for the majority; the age structure is slightly aging, with young teachers under 35 accounting for less than 30%; the proportion of doctoral degree holders is only 13.20%, far below Yunnan's provincial average of 25.0% (Yunnan Provincial Department of Education, 2023); the academic rank distribution presents a "middle large, two ends small" pattern, with professors accounting for only 11.20%; traditional basic disciplines account for more than half, while emerging applied disciplines related to regional development are relatively weak, which is not conducive to the school's service to local industrial upgrading.

2. Core Challenges of Faculty Team Building

Quantitative analysis shows that the overall level of faculty team building in Wenshan University is moderate (average score 2.912, SD=0.889), with three prominent core challenges, and the specific quantitative indicators are shown in Table 2. These challenges are consistent with the common problems faced by local universities in China in faculty construction (Yan, 2024), but have unique manifestations due to the borderland characteristics.

Table 2. Core Challenges of Faculty Team Building (Quantitative Indicators)

Core Challenge	Mean	SD	Key Performance
Unbalanced Faculty Structure	2.880	0.896	Low doctoral ratio, irrational discipline distribution, aging echelons; lack of backbone teachers in emerging applied disciplines
General Talent Retention Intention	2.920	0.921	High turnover risk of young teachers (72% of resigned teachers in 2023-2024 are under 35), 20%-30% lower remuneration than provincial capital universities (Hu & Yuan, 2021), limited development space

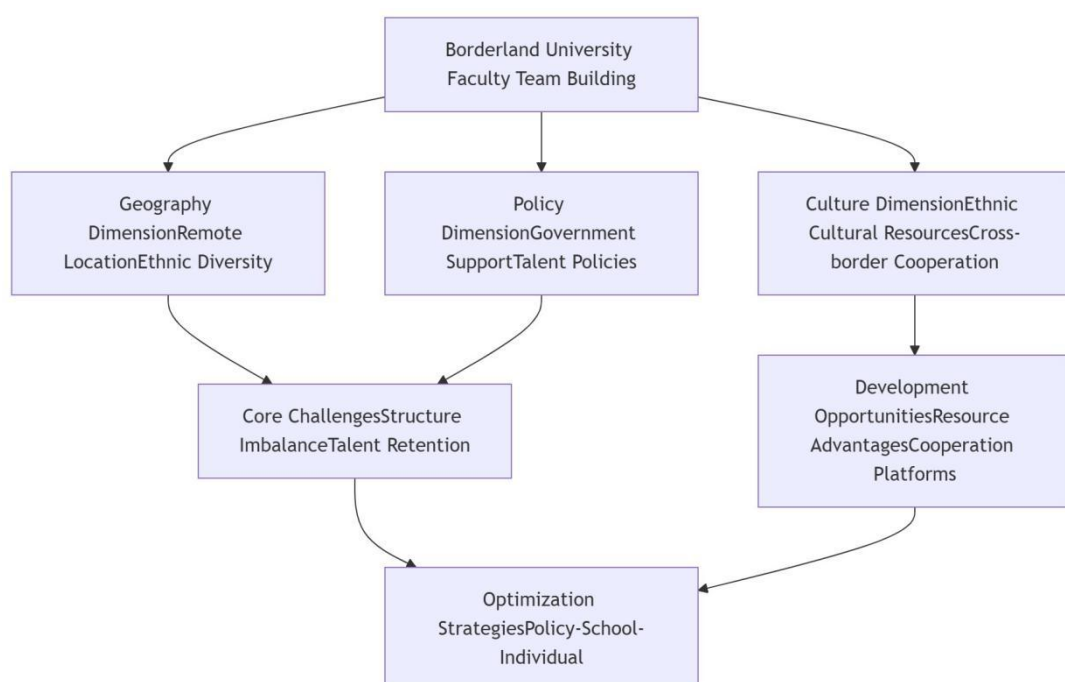
Inadequate Management Mechanism Adaptability	2.948	0.907	Utilitarian evaluation (60% weight on quantitative scientific research indicators), fragmented training, lagging digital management
Digital Management Efficiency	2.892	0.869	Disconnected management systems, heavy manual operations, low management efficiency

Among them, talent retention is the most prominent problem. According to the interview results, young teachers generally reflect that the low remuneration and insufficient scientific research support are the main reasons for their willingness to leave, which is consistent with the research conclusion on teacher loss in local universities (He & Lu, 2023). In addition, the utilitarian evaluation mechanism makes teachers focus on quantitative scientific research indicators, ignoring teaching quality and regional service contributions, which is not conducive to the long-term development of borderland universities.

To systematically analyze the research problems, this study constructs a "Geography- Policy- Culture" three-dimensional conceptual framework for faculty team building in borderland universities, guided by Push-Pull Theory, Resource Curse Theory, and Ethnic Education Theory. The framework clarifies the core factors affecting faculty construction in borderland universities and the interaction mechanism between them, as shown in Figure 1.

Figure 1

Geography-Policy-Culture Three-Dimensional Conceptual Framework for Faculty Team Building in Borderland Universities



CONCLUSION AND FUTURE WORK

1. Conclusion

This study takes Yunnan Wenshan University as a case to systematically analyze the current situation and core challenges of teacher management and faculty team building in Chinese borderland universities. The results show that the overall level of faculty team building in Wenshan University is moderate, with three prominent problems: unbalanced faculty structure, general talent retention intention, and inadequate adaptability of management mechanisms. The core cause of these issues is the failure to effectively integrate the unique geographical, policy, and cultural characteristics of borderland universities into teacher management practices, which results in the inability to translate the resource advantages of border areas into disciplinary competitiveness and talent attractiveness. This finding is consistent with existing research on regional educational resources and faculty team construction (Zhang & Xue, 2025).

To address these challenges, combined with the national education development strategy (Central Committee of the Communist Party of China & State Council, 2025) and the actual situation of borderland universities, hierarchical and operable optimization strategies are proposed from three levels. At the policy level, governments should establish special funds for the conversion of characteristic resources of borderland universities, formulate targeted talent policies that relax academic qualification requirements for ethnic cultural inheritors, and tilt senior title indicators to borderland universities. At the school level, universities need to optimize faculty structure with characteristic discipline development as the orientation, improve talent retention mechanisms to narrow the salary gap with provincial capital universities, reform evaluation mechanisms to highlight regional service contributions, accelerate digital management construction, and build a "resource-discipline-talent" integration model. At the individual level, young teachers should enhance cross-border service and ethnic cultural inheritance capabilities, senior teachers should drive young teacher echelon construction, and characteristic discipline teachers should strengthen practical cooperation with local enterprises and cross-border universities (Zhou, 2023).

2. Future Work

This study is a single-case study of Yunnan Wenshan University, and the conclusions are mainly applicable to borderland universities in southeastern Yunnan with similar characteristics. In the future, multi-case studies can be carried out on borderland universities in different regions of China (e.g., Xinjiang, Inner Mongolia) to compare and analyze the commonalities and differences of their faculty construction challenges, and further improve the theoretical framework and optimization strategies. In addition, long-term follow-up research can be conducted to track the implementation effect of the proposed optimization strategies and provide dynamic adjustment suggestions for the high-quality development of faculty teams in borderland universities. Moreover, in-depth research on cross-border teacher training and academic exchange mechanisms between Chinese borderland universities and universities in South Asia/Southeast Asia can be strengthened to enhance the internationalization level of faculty teams in borderland universities, which is of great significance for promoting cross-border educational cooperation (Nechita, 2024).

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THE INNOVATION OF EDUCATIONAL MANAGEMENT FROM AN INTERNATIONAL PERSPECTIVE IN ANHUI

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ABSTRACT

This study investigates the innovation of educational management from an international perspective at Anhui Vocational and Technical University. Against the backdrop of China's Education Modernization 2035 and the rapid advancement of educational informatization, vocational institutions face pressing needs to transform traditional management models. The research examines how international perspectives and technological integration drive systematic innovation in vocational college management. Through a mixed-methods approach combining questionnaire surveys (n=86 faculty members) and in-depth interviews with five experts, the study analyzes five key dimensions: Factors of School Teachers, Factors of School Students, Quality of Education, Teacher Professional Development, and Internationalisation. Findings reveal that all dimensions demonstrate high implementation levels, with student-related factors perceived as the most prominent drivers of innovation. However, internationalisation and quality of education emerged as areas requiring strategic enhancement. The research proposes a theoretical framework integrating learner-centric principles, technology-enhanced methodologies, educator development, and outcome-based evaluation, offering practical pathways for vocational colleges to transition from passive adaptation to proactive leadership in educational reform.

Keywords: Educational Management Innovation, International Perspective, Vocational Education, Teacher Development, Educational Informatization

INTRODUCTION

With the rapid development of information technology, educational informatization has become a critical engine for modernizing vocational education. China's Education Modernization 2035 explicitly proposes "accelerating educational reform in the information age," requiring vocational colleges to enhance management efficiency through technological innovation (State Council, 2019). However, current management practices in vocational institutions still face numerous challenges: disconnection between traditional management models and informatization needs, insufficient capacity for data-driven decision-making, and low efficiency in resource integration (Huang et al., 2020).

The internationalization of higher education further compounds these challenges, as vocational institutions must prepare graduates for globally interconnected professional environments while maintaining relevance to local industrial needs. Anhui Vocational and Technical University, as a key

public undergraduate institution administered by the Anhui Provincial Government, exemplifies both the achievements and ongoing challenges in this transformative process. The university has evolved from a skilled trades training center into a comprehensive vocational institution, yet questions persist regarding how to optimally integrate international perspectives into its educational management framework.

Against this backdrop, this study focuses on 'how educational informatization drives systematic innovation in vocational college management models from an international perspective' and aims to address the following questions: How can information technologies restructure the organizational framework and management processes of vocational colleges? How can data governance improve the scientific rigor of management decisions? How can international perspectives be effectively incorporated into educational management innovation?

OBJECTIVE

1.To study the level of innovation of vocational college management models under the background of educational informatization at Anhui Vocational and Technical College.

2.To propose the development of innovation of vocational college management models under the background of educational informatization at Anhui Vocational and Technical College.

METHODOLOGY

This research employed a mixed-methods approach combining quantitative survey research with qualitative interview methods to comprehensively investigate educational management innovation at Anhui Vocational and Technical University.

Population and Sample

The population for this research comprised 120 faculty members at Anhui Vocational and Technical University. The sample size of 86 teachers was determined using the Krejcie & Morgan (1970) sample size table. Additionally, five faculty members from the School of Culture, Tourism, and Journalism Arts were purposively selected as key informants for in-depth interviews, each possessing over five years of experience and recognized expertise in educational management.

Research Instruments

Two primary research instruments were developed:

1. **Questionnaire:** A 40-item questionnaire divided into two sections. Part 1 collected demographic information including gender, age, educational background, work experience, and professional title. Part 2 assessed five dimensions of educational management innovation: Factors of School Teachers (8 items), Factors of School Students (8 items), Quality of Education (8 items), Teacher Professional Development (8 items), and Internationalization (8 items). A five-point Likert scale was employed for responses.
2. **Interview Protocol:** A semi-structured interview guide was developed based on the same five dimensions, designed to elicit deeper insights from expert participants regarding successful practices, challenges, and opportunities in educational management innovation.

Instrument Validation

The questionnaire was reviewed by three experts who assessed content validity using the Index of Item-Objective Congruence (IOC). All items achieved IOC values between 0.67 and 1.00, exceeding the 0.50 threshold for acceptability. Following expert review and advisor approval, a pilot test was conducted with 30 individuals outside the main sample. Reliability analysis using Cronbach's alpha coefficient yielded a value of 0.9316 for the entire questionnaire, indicating excellent internal consistency.

Data Analysis

Quantitative data were analyzed using descriptive statistics including frequency distributions, percentages, means, and standard deviations. Interpretation of mean scores followed a predetermined scale: 4.51-5.00 (highest level), 3.51-4.50 (high level), 2.51-3.50 (moderate level), 1.51-2.50 (low level), and 1.00-1.50 (lowest level). Qualitative data from interviews were analyzed using content analysis to identify themes and patterns complementing the quantitative findings.

RESULTS

A survey concerning innovations in teacher education management was administered to faculty members at Anhui Vocational and Technical College. The questionnaire was completed by 86 educators, representing the full sample. Their professional background characteristics are summarized in Table 1.

Table 1

General information of respondents		
General information		(n = 86)
Percentage		Frequency
1. Gender of respondents		
30.23	Male	26
69.77	Female	60
100	Total	86
2. Age of respondents		
6.99	22 -28 years old	6

27.90	28 -33 years old	24
34.88	33 -40 years old	30
18.60	40 -45 years old	16

3. Respondent's highest educational

8.14	Bachelor'sdegree	7
38.37	Master'sdeg	33
53.49	Doctoraldegree	46
100	Total	86

4. The work experience of the respondents

12.80	Under 6 years	11
16.28	6 - 10 years	14
18.60	11 - 15 years	16
34.88	16 - 20 years	30
17.44	More than 20 years	15
100	Total	86

5. Professional Title Distribution

5.81	Junior professional title	5
24.42	Intermediate professional title	21
69.77	Senior professional title	60
100	Total	86

Results analysis of mean and standard deviation the Innovations in teacher education management.

From Table 2.

Table 2

Innovations in teacher education management		n = 86		
	$\bar{x}$	S.D.	Interpretation	
1. Factors of School Teachers	3.78	0.82	High level	
2. Factors of School Students	3.85	0.75	High level	
3. Quality of education	3.69	0.88	High level	
4. Teacher professional development	3.80	0.79	High level	
5. Internationalisation	3.74	0.83	High level	
Total	3.77	0.81	High level	

Figure 1

Table 3. Results analysis of mean and standard deviation the Factors of School Teachers.

n = 86				
Factors of School Teachers	$\bar{x}$	S.D.	Interpretation	
1.Ability to keep up with international educational trends and apply them to teaching practices in a timely manner.	4.42	0.81	High level	
2. Cross-cultural communication skills.	4.08	0.77	High level	
3. Actively engage in international joint research, curriculum co-construction, and other collaborative	3.32	0.80	High level	

activities.

4.Design a high-quality internationalized 3.91 0.79 High level

curriculum system that combines
international needs with the university's
unique features.

5.Sufficient experience and skills in 3.83 0.75 High level
managing international student education.

6.Ability to meet the diverse learning and 4.33 0.84 High level
living needs of international students.

7.International academic influence of the 3.02 0.73 Moderate level
faculty team.

7. Innovative measures and results
in enriching teaching content by utilizing 3.24 0.88 Moderate level
international educational resources.

Total 3.77 High level

Table 4. Results analysis of mean and standard deviation the Factors of School Students.

n = 86			
Factors of School Students	$\bar{x}$	S.D.	Interpretation
1. Awareness of international exchange opportunities and enthusiasm for participation	4.02	0.72	High level
2. Completeness of the system for cultivating cross-cultural adaptability.	3.35	0.78	Moderate level
3.Awareness and ability to actively			

seek international learning and exchange 4.09 0.88 High level

resources.

4.Foreign language proficiency that

meets the needs of internationa 3.22 0.71 Moderate level

l education exchange and cooperation.

5.Gaps in the utilization of international 4.00 0.84 High level

educational resources.

6.Awareness of career planning with 4.06 0.81 High level

an international perspective.

7.Integration of international educational 3.36 0.87 Moderate level

experience with future career development.

8. Development of innovative thinking and 4.05 0.84 High level

practical ability in international education activities.

Total	3.77	High level
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Table 6.Results analysis of mean and standard deviation the Quality of education.

n = 86			
Quality of education	$\bar{x}$	S.D.	Interpretation
1. The degree of integration of international education standards and accreditation systems in the evaluation process.			
	4.08	0.89	High level
2.The degree of internationalization of the school's curriculum system.			
	4.05	0.87	High level

3.The actual effect of introducing international educational resources	3.28	0.91	Moderate level
on improving teaching quality.			
4.The effectiveness of teaching method innovations under international perspectives in cross-cultural teaching	3.72	0.85	High level
environments.			
5.Quality control mechanisms in international education	3.25	0.71	Moderate level
cooperation projects.			
6. The efficiency of converting research outcomes into teaching	3.41	0.87	Moderate level
content to enhance education quality.			
7. The faculty development strategies of the school for improving international	4.09	0.79	High level
education quality.			
8. Optimizing resource allocation to maximize the enhancement of	3.89	0.69	High level
education quality.			

Total	3.72	High level
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CONCLUSION AND FUTURE WORK

This study examined educational management innovation from an international perspective at Anhui Vocational and Technical University, revealing a generally high level of implementation across five key dimensions. The findings demonstrate that student-centered factors currently drive innovation most prominently, while internationalisation and quality of education present opportunities for strategic enhancement. The research contributes both theoretical and practical value by:

Theoretical Contributions: Enriching the interdisciplinary framework of educational informatization and management innovation, expanding the theoretical scope of vocational education governance (Gu Mingyuan, 2020). The proposed theoretical framework integrating learner-centric principles, technology-enhanced methodologies, educator development, and outcome-based evaluation offers a structured approach for understanding and advancing innovation in vocational contexts.

Practical Implications: Providing actionable models for vocational colleges, including strategies for optimizing resource allocation through smart campus platforms (Yu Shengquan, 2019) and enhancing student management through learning analytics. The specific findings regarding teacher and student factors offer concrete direction for professional development programming and curriculum enhancement.

The study confirms that educational management innovation serves as a vital driving force for advancing vocational education, enabling institutions to transition from "passive adaptation" to "proactive leadership" in informatization reform. For Anhui Vocational and Technical University, the path forward involves deepening industry-education integration, strengthening international partnerships, and systematically addressing the identified gaps in faculty international engagement and student cross-cultural preparation.

Future Work should focus on:

1. Longitudinal studies tracking the implementation and impact of specific innovation strategies over time.

2. Comparative research examining innovation patterns across multiple vocational institutions to identify contextual factors influencing success.

3. Development and validation of targeted intervention programs addressing the moderate-level items identified in teacher and student factors.

4. Exploration of industry partner perspectives on graduate readiness and the alignment of educational management innovation with workforce needs.

5. Investigation of technology-enhanced assessment systems that can provide real-time feedback for continuous quality improvement.

By pursuing these directions, researchers and practitioners can further advance the theoretical understanding and practical application of educational management innovation in vocational education contexts.

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THE FORMATION AND DILEMMAS OF PROFESSIONAL IDENTITY AMONG NON-TENURED TEACHERS AND THEIR IMPACT ON TEAM COLLABORATION: PRIMARY AND SECONDARY SCHOOL TEACHERS IN WUHUA DISTRICT, KUNMING, CHINA

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ABSTRACT

Non-tenured teachers have become an important part of the primary and secondary school teaching team in Wuhua District, Kunming, undertaking the important task of basic education teaching. However, affected by institutional factors, social cognition and school management, the formation of their professional identity faces multiple dilemmas, which further affects the effectiveness of school team collaboration. This study takes non-tenured teachers in primary and secondary schools in Wuhua District, Kunming as the research object, uses a mixed research method combining questionnaire survey and semi-structured interview, explores the formation path and main dilemmas of their professional identity, and analyzes the specific impact of the lack of professional identity on team collaboration behavior, communication efficiency and collaborative innovation. The research finds that the professional identity of non-tenured teachers in the research area is at a medium-low level, and the identity dilemmas such as institutional identity gap, professional value recognition deficiency and occupational security anxiety are prominent, which lead to the problems of low participation in team collaboration, insufficient deep communication and lack of collaborative initiative. Based on the research results, this paper puts forward targeted countermeasures from the aspects of perfecting the institutional guarantee system, optimizing the school management mechanism and strengthening the self-construction of teachers, so as to improve the professional identity of non-tenured teachers and promote the high-quality development of school team collaboration.

Keywords: Non-tenured Teachers; Professional Identity; Team Collaboration; Primary and Secondary Schools; Wuhua District Kunming

INTRODUCTION

With the continuous promotion of the balanced development of compulsory education in China and the expansion of the scale of basic education in urban areas, the demand for teachers in primary and secondary schools has increased sharply. Due to the limitation of the preparation system, non-tenured teachers have become an important supplementary force for the teaching team in various regions. Wuhua District, as the central urban area of Kunming, has a large number of primary and secondary schools and

a huge teaching demand, and the proportion of non-tenured teachers in the teaching team is increasing year by year. These teachers are generally young, have a high educational background and strong professional skills, and play an irreplaceable role in improving the quality of basic education, enriching the teaching team and meeting the diversified teaching needs.

Professional identity is the core of teachers' professional development, which refers to teachers' positive recognition and acceptance of their professional role, professional value, professional norms and professional development, and is an important psychological basis for teachers to engage in teaching work actively and consciously. For non-tenured teachers, a stable and positive professional identity is not only related to their own professional growth and job satisfaction, but also directly affects their teaching enthusiasm, sense of responsibility and participation in school collective work. Team collaboration is an important form of modern school management and teaching research, which is the key to promoting the professional development of teachers, optimizing the teaching process and improving the teaching quality. The collaborative behavior of teachers is closely related to their professional identity. Only when teachers have a strong sense of professional identity and a sense of belonging to the school can they actively participate in team collaboration and realize the sharing of teaching resources and the common progress of the team.

However, in the actual educational practice, non-tenured teachers are in a relatively marginal position in the school due to the lack of establishment identity, unstable employment status and unfair treatment distribution. The formation of their professional identity faces many obstacles and dilemmas, which leads to the problems of insufficient participation in team collaboration, low collaborative efficiency and single collaborative form. At present, the existing research on non-tenured teachers mainly focuses on the aspects of treatment security, employment management and professional development, and there are few studies on the relationship between their professional identity and team collaboration, especially the targeted research on the primary and secondary school non-tenured teachers in Wuhua District, Kunming is still blank.

Against this background, this study takes the non-tenured teachers in primary and secondary schools in Wuhua District, Kunming as the research object, explores the formation characteristics and main dilemmas of their professional identity, analyzes the internal mechanism of the impact of professional identity on team collaboration, and puts forward practical countermeasures and suggestions. This study is not only conducive to enriching the research results of non-tenured teachers' professional identity and team collaboration, but also has important practical significance for optimizing the management of non-tenured teachers in Wuhua District, improving their professional identity, promoting the integration of non-tenured teachers into the school teaching team, and realizing the high-quality development of basic education in the region.

OBJECTIVE

Based on the research background and identified gaps, this study adopts a qualitative research approach to explore non-tenured teachers' professional identity and its organizational consequences in primary and secondary schools. The specific research objectives are as follows:

- 1.To provide an in-depth description of the process through which non-tenured teachers construct their professional identity and the core dilemmas they encounter;

2.To examine how professional identity dilemmas influence non-tenured teachers' modes of participation and behavioral logic in school team collaboration;

3.To explore, from organizational and institutional perspectives, possible pathways for alleviating identity dilemmas and promoting inclusive forms of team collaboration.

METHODOLOGY

This study adopts a mixed research method combining quantitative research and qualitative research, which combines questionnaire survey, semi-structured interview and field observation to collect research data, so as to ensure the comprehensiveness and accuracy of the research results. The research objects are non-tenured teachers in primary and secondary schools in Wuhua District, Kunming, including contract teachers, temporary teachers and purchased service teachers employed by schools with the approval of the education administrative department.

Sub-Section 1: Questionnaire Survey

The questionnaire is the main tool of quantitative research, which is designed on the basis of combing the existing research results and combining the actual characteristics of non-tenured teachers in Wuhua District, Kunming. The questionnaire is divided into three parts: the basic information of the respondents, the professional identity scale and the team collaboration scale. The basic information part includes gender, age, educational background, teaching age, teaching subject, employment form and other contents; the professional identity scale is divided into four dimensions: institutional identity, professional value identity, occupational behavior identity and professional development identity, with a total of 20 items; the team collaboration scale includes three dimensions: collaborative participation, collaborative communication and collaborative innovation, with a total of 15 items. The scale adopts the Likert 5-level scoring method, from 1 (completely inconsistent) to 5 (completely consistent).

A total of 300 questionnaires were distributed in this study, covering 20 primary and secondary schools in Wuhua District, Kunming, including public primary schools, public junior high schools and public senior high schools. After collecting the questionnaires, the invalid questionnaires with incomplete answers and regular answers were excluded, and finally 276 valid questionnaires were obtained, with an effective recovery rate of 92%. The collected data were sorted out and analyzed by using SPSS 26.0 statistical software, and the descriptive statistics, correlation analysis and regression analysis were carried out to explore the current situation of professional identity and team collaboration of non-tenured teachers and the correlation between them.

To ensure the reliability and validity of the questionnaire, a pre-survey was conducted with 30 non-tenured teachers from two schools in Wuhua District before the formal distribution. Based on the feedback from the pre-survey, the wording of some items in the professional identity and team collaboration scales was revised to enhance clarity and applicability. For instance, the item 'I am proud of my teaching profession' in the professional value identity dimension was adjusted to 'I feel a sense of pride in engaging in the teaching profession' to better reflect the actual psychological state of the respondents. After revision, the questionnaire was subjected to reliability analysis using Cronbach's α coefficient. The results showed that the Cronbach's α coefficient for the overall questionnaire was 0.912, with the professional identity scale at 0.895 and the team collaboration scale at 0.876, all exceeding the standard threshold of 0.7, indicating good internal consistency. In terms of validity, content validity was ensured through expert review, where three experts in the fields of education management and

psychology evaluated the relevance and appropriateness of each item, and all items were retained after minor adjustments. Construct validity was tested using exploratory factor analysis (EFA). For the professional identity scale, four factors with eigenvalues greater than 1 were extracted through principal component analysis with varimax rotation, explaining 68.32% of the total variance, which was consistent with the 预设 four-dimensional structure. Similarly, the team collaboration scale extracted three factors, explaining 65.78% of the total variance, matching the expected three-dimensional framework. These results confirmed that the questionnaire was scientifically sound and suitable for this study.

Sub-Section 2: Semi-structured Interview and Field Observation

On the basis of the questionnaire survey, 20 non-tenured teachers and 5 school administrators were selected for semi-structured interviews by using the purposive sampling method. The interviewees cover different genders, ages, teaching ages and teaching subjects, so as to ensure the representativeness of the interview objects. The interview outline is designed around the formation process of professional identity, the encountered dilemmas, the participation in team collaboration, the problems in collaboration and the expectations for school management, and the in-depth communication is carried out with the interviewees. Each interview lasts for 30-40 minutes, and the whole interview process is recorded with the consent of the interviewees, and the interview content is sorted out and transcribed in time after the interview.

At the same time, the researchers conducted field observations in 5 sample schools, attended the collective lesson preparation, teaching and research activities and team meetings of the schools, observed the on-the-job performance, communication behavior and collaborative participation of non-tenured teachers in the actual teaching scene, and recorded the observation content in detail. The qualitative data obtained from interviews and observations were coded and analyzed by using the Nvivo 12 software, and the main categories and core themes were summarized to deeply explore the formation dilemmas of professional identity and the specific performance of its impact on team collaboration.

Prior to the formal distribution of the questionnaire, a pre-survey was conducted with 30 non-tenured teachers from two of the selected sample schools to test the reliability and validity of the questionnaire. Based on the feedback and suggestions collected from the pre-survey, the questionnaire was revised and improved to ensure the clarity of the questions, the appropriateness of the options, and the rationality of the overall structure. The final formal questionnaire was composed of three main parts: the first part focused on the basic information of non-tenured teachers, including gender, age, educational background, teaching subject, teaching age, and type of school they work in. The second part was designed to measure the professional identity of non-tenured teachers, covering dimensions such as professional 认知 (professional cognition), professional emotion, professional behavior inclination, and professional value. This part adopted a 5-point Likert scale, where 1 represented "strongly disagree" and 5 represented "strongly agree", with a total of 25 items. The third part aimed to investigate the team collaboration status of non-tenured teachers, including their frequency of participation in team activities, the quality of communication with colleagues, the degree of trust among team members, the effectiveness of collaboration, and the factors affecting collaboration, with a total of 18 items, also using a 5-point Likert scale. A total of 350 questionnaires were distributed to non-tenured teachers in the 5 sample schools, and 328 valid questionnaires were (retrieved), with an effective recovery rate of 93.7%. The collected questionnaire data were input into the SPSS 26.0 statistical software for processing and analysis. Descriptive statistical analysis was used to understand the basic situation of non-tenured teachers' professional identity and team collaboration. Reliability analysis was conducted using Cronbach's α

coefficient to test the internal consistency of the questionnaire scales, and the results showed that the Cronbach's α coefficients of the professional identity scale and the team collaboration scale were 0.87 and 0.85 respectively, indicating good reliability. Validity analysis was performed through exploratory factor analysis, and the KMO value was 0.83, and the Bartlett's test of sphericity was significant ($p < 0.001$), indicating that the questionnaire data were suitable for factor analysis and had good construct validity. Correlation analysis was used to explore the relationship between non-tenured teachers' professional identity and team collaboration, and regression analysis was further conducted to examine the predictive effect of professional identity on team collaboration.

RESULTS

Current Situation of Professional Identity of Non-Tenured Teachers

The descriptive statistical analysis of the professional identity scale of non-tenured teachers in primary and secondary schools in Wuhua District, Kunming shows that the overall average score of professional identity of the research objects is 3.26, which is at a medium-low level. The average scores of each dimension from high to low are: occupational behavior identity (3.52), professional value identity (3.21), professional development identity (3.05) and institutional identity (2.87), which indicates that the professional identity of non-tenured teachers in the research area is unbalanced, and the institutional identity is the lowest, which is the main short board of their professional identity formation. Specific data are shown in Table 1.

Table 1
Descriptive Statistics of Professional Identity of Non-tenured Teachers (M $\pm$ SD)

No.	Dimension of Professional Identity	Mean	Standard Deviation
1	Institutional Identity	2.87	0.89
2	Professional Value Identity	3.21	0.76
3	Occupational Behavior Identity	3.52	0.68
4	Professional Development Identity	3.05	0.82
5	Overall Professional Identity	3.26	0.79

From the perspective of basic information, there are significant differences in the professional identity of non-tenured teachers with different characteristics: the professional identity of female teachers is slightly higher than that of male teachers; the professional identity of teachers aged 30 and below is lower than that of teachers aged 31-40; the professional identity of teachers with bachelor's degree and above is higher than that of teachers with junior college degree and below; the professional identity of teachers with more than 5 years of teaching experience is significantly higher than that of teachers with less than 1 year of teaching experience; the professional identity of purchased service teachers is higher than that of contract teachers and temporary teachers.

Regarding the analysis of professional identity dimensions, the overall professional identity score of non-tenured teachers is at a moderate level. Among the five dimensions of professional identity, the scores of "professional emotion" and "professional value" are relatively higher, with average scores of 3.85 and 3.78 respectively (on a 5-point Likert scale). This indicates that most non-tenured teachers have positive emotional feelings towards their teaching profession and recognize the significance and value of teaching work. In contrast, the scores of "professional behavior tendency" and "professional competence" are relatively lower, with average scores of 3.22 and 3.35. This suggests that non-tenured teachers may have some uncertainties in terms of long-term career planning and self-perceived teaching abilities, which affects their behavioral inclination to engage in the teaching profession stably. Additionally, the "professional cognition" dimension scored 3.56, reflecting a relatively clear understanding of the teaching profession but with room for further improvement in depth and comprehensiveness.

Main Dilemmas of the Formation of Professional Identity

Through the coding and analysis of qualitative data such as interviews and observations, combined with the results of questionnaire survey, it is found that the formation of professional identity of non-tenured teachers in primary and secondary schools in Wuhua District, Kunming faces four main dilemmas, as shown in Table 2.

Table 2
Main Dilemmas and Specific Performances of the Formation of Professional Identity of Non-tenured Teachers

No.	Main Dilemmas	Specific Performances
1	Institutional Identity Gap	Unequal treatment between non-tenured and tenured teachers in salary, social security, performance appraisal; no access to professional title evaluation, honor selection and other channels; unstable employment status and high occupational mobility
2	Deficiency of Professional Value Recognition	Being labeled as "temporary worker" by society and school colleagues; the teaching achievement is not fully recognized; the sense of professional achievement and honor is low
3	Occupational Security Anxiety	Worry about the renewal of employment contract; low salary and no perfect welfare guarantee; no clear career development path and promotion space
4	Weak Sense of School Belonging	Being excluded from some school collective activities and decision-making links; less access to school training and research resources; the psychological distance with tenured teachers is large

The Impact of Professional Identity Dilemmas on Team Collaboration

The correlation analysis shows that there is a significant positive correlation between the overall professional identity of non-tenured teachers and team collaboration ($r=0.68$, $P<0.01$), and each dimension of professional identity is also significantly positively correlated with each dimension of team collaboration. The regression analysis shows that professional identity has a significant positive predictive effect on team collaboration ($\beta=0.62$, $P<0.001$), which means that the lower the professional identity of non-tenured teachers, the worse the effectiveness of their team collaboration. The specific impacts are mainly reflected in the following three aspects:

1. Low participation in team collaboration: Affected by the lack of institutional identity and weak sense of belonging, most non-tenured teachers hold a passive attitude towards school collective lesson preparation, teaching and research activities and team teaching. They only participate in the required collaborative activities, and rarely take the initiative to participate in extra-curricular collaborative research and teaching reform activities. The survey shows that only 32.6% of non-tenured teachers take the initiative to participate in various team collaboration activities, while 67.4% of teachers participate passively or perfunctorily.

2. Insufficient deep communication in collaboration: Due to the deficiency of professional value recognition and occupational security anxiety, non-tenured teachers have a strong psychological defense in the process of team collaboration, and are reluctant to share their teaching experience, teaching design and research results with other teachers deeply. The communication between them and tenured teachers is mostly limited to the superficial teaching content, and there is a lack of in-depth discussion on teaching difficulties, teaching methods and student management. Field observation found that in the collective lesson preparation activities, the speaking time of non-tenured teachers accounts for less than 20% of the total speaking time, and most of them are simple responses and no independent opinions.

3. Lack of collaborative innovation motivation: The low professional development identity makes non-tenured teachers lack long-term planning for their own professional development, and they are not willing to invest energy in collaborative innovation research such as curriculum development, teaching method reform and interdisciplinary teaching. In the team collaboration, they only follow the existing teaching norms and collaborative plans, and lack the initiative to put forward innovative ideas and suggestions. The survey shows that only 28.3% of non-tenured teachers have participated in the school's collaborative research projects, and most of them are only as auxiliary participants.

In addition, the identity dilemma of non-tenured teachers also leads to the division of the school teaching team, forming a relatively obvious "dual structure" of tenured teachers and non-tenured teachers, which affects the overall cohesion and centripetal force of the team, and restricts the sustainable development of team collaboration.

CONCLUSION AND FUTURE WORK

Conclusion

This study takes non-tenured teachers in primary and secondary schools in Wuhua District, Kunming as the research object, and through the mixed research method of questionnaire survey, semi-structured interview and field observation, it systematically explores the formation dilemmas of their professional identity and its impact on team collaboration, and draws the following main conclusions:

1. The overall professional identity of non-tenured teachers in primary and secondary schools in Wuhua District, Kunming is at a medium-low level, and the development of each dimension is unbalanced. The occupational behavior identity is relatively high, while the institutional identity is the lowest, which is the core problem restricting the formation of their professional identity. The professional identity of non-tenured teachers is affected by gender, age, educational background, teaching age and employment form and other factors, showing obvious group differences.

2. The formation of professional identity of non-tenured teachers in the research area faces four main dilemmas: institutional identity gap, deficiency of professional value recognition, occupational security anxiety and weak sense of school belonging. These dilemmas are the result of the joint action of multiple factors such as the rigidity of the preparation system, the imperfection of the security mechanism, the unreasonable school management and the insufficient individual self-construction.

3. There is a significant positive correlation between the professional identity of non-tenured teachers and team collaboration, and professional identity has a significant positive predictive effect on team collaboration. The lack of professional identity leads to a series of problems such as low participation in team collaboration, insufficient deep communication and lack of collaborative innovation motivation of non-tenured teachers, and even causes the division of the teaching team, which seriously affects the effectiveness of school team collaboration and the high-quality development of basic education.

These conclusions not only reveal the current situation and crux of the professional identity of non-tenured teachers in the research area, but also clarify the important role of professional identity in promoting effective team collaboration. They provide empirical support and theoretical reference for understanding the survival and development status of non-tenured teachers in primary and secondary schools, and have important practical significance for improving the professional identity of non-tenured teachers, optimizing team collaboration in schools, and promoting the healthy and sustainable development of basic education.

Future Work

Based on the above research conclusions, in order to improve the professional identity of non-tenured teachers in primary and secondary schools in Wuhua District, Kunming and promote the high-quality development of team collaboration, the following targeted countermeasures and suggestions are put forward from three levels: system, school and individual:

1. Perfect the institutional guarantee system and bridge the institutional identity gap: The education administrative department of Wuhua District should speed up the reform of the teacher preparation system, explore the implementation of the "same institution and different post" management model, and realize the equal treatment of non-tenured teachers and tenured teachers in salary, social security, performance appraisal and other aspects. Establish a sound professional title evaluation and honor selection mechanism for non-tenured teachers, open up the promotion channel for their professional development, and stabilize their employment status. Formulate special protection policies for non-tenured teachers, and establish a sound employment contract management system to reduce their occupational security anxiety.

2. Optimize the school management mechanism and enhance the sense of school belonging: Schools should establish a fair and inclusive management culture, eliminate the identity discrimination

against non-tenured teachers, and include them in the school's unified teacher training, teaching research and professional development plan. Increase the investment in non-tenured teachers' professional development, provide them with more training, further study and research opportunities, and help them improve their professional skills. Encourage non-tenured teachers to participate in school collective decision-making and management activities, and enhance their sense of participation and ownership. Strengthen the team building of teachers, organize various collective activities, narrow the psychological distance between non-tenured teachers and tenured teachers, and enhance the overall cohesion of the teaching team.

3. Strengthen teachers' self-construction and improve the level of professional identity:

Non-tenured teachers should establish a correct professional outlook, recognize the value and significance of the teacher profession, and enhance their professional value identity. Strengthen the self-learning and professional development, actively participate in various teaching and research activities and training courses, continuously improve their teaching ability and professional quality, and enhance their occupational behavior identity and professional development identity. Take the initiative to integrate into the school teaching team, strengthen communication and cooperation with other teachers, and form a good collaborative relationship. Establish a long-term career development plan, and avoid the short-sighted behavior caused by occupational anxiety, so as to realize the sustainable development of their own professional identity.

This study has certain limitations. The research sample is limited to the non-tenured teachers in primary and secondary schools in Wuhua District, Kunming, and the research results may have certain regional limitations, and cannot be directly generalized to other regions. In the future research, the research sample can be expanded to the whole province and even the whole country, and the comparative research on the professional identity and team collaboration of non-tenured teachers in different regions, different types of schools can be carried out to further enrich the research results. At the same time, the follow-up research can also track the dynamic changes of non-tenured teachers' professional identity and team collaboration effectiveness after the implementation of relevant policies and measures, and verify the effectiveness of the countermeasures put forward in this study, so as to provide more practical and targeted suggestions for the management and professional development of non-tenured teachers.

Additionally, future research could explore the specific mechanisms through which team collaboration impacts non-tenured teachers' professional identity. For instance, investigating how different dimensions of team collaboration (such as communication frequency, task interdependence, and mutual support) exert varying influences on components of professional identity like value identity, behavior identity, and development identity. This would help to clarify the intricate relationships between these two constructs and provide a more solid theoretical foundation for formulating targeted intervention strategies. Furthermore, considering the rapid development of educational technology, future studies might examine the role of digital platforms and tools in facilitating team collaboration among non-tenured teachers and how such technological support could further enhance their professional identity development in the context of online and blended teaching environments. Another potential direction is to conduct in-depth case studies on exemplary schools or regions that have successfully improved non-tenured teachers' professional identity through effective team collaboration practices. By analyzing the specific measures, implementation processes, and challenges faced in these cases, valuable insights and replicable models can be (tíliàn - extracted) for wider application in educational management.

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TRANSFORMING CHALLENGES INTO OPPORTUNITIES: A CASE STUDY OF EDUCATIONAL TECHNOLOGY INTEGRATION AT YANGZHOU UNIVERSITY

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ABSTRACT

With the in-depth promotion of the digital transformation of higher education, the integration of educational technology has become a core driving force for the high-quality development of universities. Taking Yangzhou University as the research object, this paper adopts the case study method to explore the practical path of transforming development challenges into innovation opportunities in the process of educational technology integration. The research finds that Yangzhou University has faced multiple challenges such as unbalanced digital resource allocation, insufficient teachers' digital literacy and single teaching application mode in the integration process. By building a smart campus infrastructure system, developing AI-enabled characteristic courses and constructing a full-link teaching support system, the university has effectively broken through the development bottleneck, realized the deep integration of digital technology and education and teaching, and achieved remarkable results in teaching efficiency improvement, talent training mode innovation and educational ecological optimization. This study provides a practical reference for the digital transformation of local universities in China to promote the integration of educational technology.

Keywords: Educational Technology Integration; Digital Transformation; Smart Campus; Yangzhou University; AI Empowerment

INTRODUCTION

In the context of the global digital revolution, the integration of educational technology has become an inevitable trend in the reform and development of higher education. The Chinese government has successively issued policies such as the *Education Informatization 2.0 Action Plan* and the *Guidelines for the Construction of Digital Campuses in Higher Education Institutions (Trial)*, clarifying the strategic requirement of promoting the deep integration of information technology and education and teaching, and accelerating the digital transformation of higher education. Local universities, as an important part of China's higher education system, are facing both historical opportunities and practical challenges in the process of educational technology integration: on the one hand, digital technology provides a new path for breaking the bottleneck of resource constraints and innovating talent training modes; on the other

hand, problems such as insufficient infrastructure construction, unbalanced resource allocation and weak digital literacy of teachers restrict the in-depth development of integration work.

Yangzhou University, as a key local comprehensive university in Jiangsu Province, has been committed to the construction of educational informatization for a long time and was rated as a "Jiangsu Provincial Smart Campus Demonstration School" in 2020, with a solid foundation in the integration of educational technology. In recent years, the university has taken the digital transformation of education as the core task, focusing on the pain points and difficulties in the integration process, and carried out a series of innovative practices, such as introducing artificial intelligence technology to build smart courses, constructing a full-link teaching support system, and promoting the deep integration of "AI + discipline education". The exploration of Yangzhou University has important typical significance for solving the common problems faced by local universities in the integration of educational technology.

This paper takes Yangzhou University as a case, combs the development challenges faced by the university in the process of educational technology integration, analyzes the specific measures and implementation effects of transforming challenges into opportunities, and summarizes the practical experience of the integration of educational technology in local universities, so as to provide reference for the digital transformation and high-quality development of similar universities.

OBJECTIVE

- 1.To study the level of educational technology integration at Yangzhou University.
2. To propose the Guidline the development of challenges be transformed into opportunities to enhance teaching and learning outcomes

METHODOLOGY

This paper adopts the case study method, taking Yangzhou University as the single case research object, and carries out in-depth research on its educational technology integration practice from multiple dimensions. The research data mainly comes from the official release of Yangzhou University (including the official website of the university, the website of the School of Environmental Science and Engineering, the work report of the Informatization Construction and Management Office), as well as the relevant research results of domestic scholars on the digital transformation of higher education and the integration of educational technology.

Sub-Section 1: Data Collection

The research data is divided into two categories: first, the first-hand practical data of Yangzhou University's educational technology integration, including the construction process of smart campus, the development and application of AI-enabled courses, the construction of teaching support system and the relevant achievement data; second, the secondary research data, including the domestic policy documents on educational informatization, the theoretical research results of educational technology integration and the practical experience of other universities. All data are screened and verified to ensure the authenticity and validity of the research.

For the collection of first-hand practical data, a multi-dimensional approach was adopted. First, in-depth interviews were conducted with key personnel from Yangzhou University's educational technology department, smart campus construction office, and several college teaching management teams. These interviews focused on the specific implementation steps, encountered challenges, and

solutions during the smart campus construction, such as the selection of hardware and software platforms, the integration of different systems, and the training of faculty and staff on new technologies. Second, classroom observations were carried out in courses that have implemented AI-enabled teaching, covering various disciplines including liberal arts, sciences, and engineering. Observations recorded the interaction between teachers and students using AI tools, the application scenarios of AI in teaching activities (such as intelligent question answering, personalized learning path recommendation, and automated assignment correction), and the feedback from students during the learning process. Additionally, relevant documents and records were collected, such as project approval materials for smart campus construction, course development plans and syllabi for AI-enabled courses, operation logs of the teaching support system, and evaluation reports on educational technology integration achievements.

Regarding the secondary research data, a systematic literature review and policy analysis were conducted. Domestic policy documents on educational informatization were retrieved from official websites of the Ministry of Education and other relevant government departments, including policies, guidelines, and notices issued in recent years that promote the integration of educational technology. These documents were analyzed to understand the policy orientation, support measures, and development goals for educational technology integration at the national level. Theoretical research results were collected from academic databases such as CNKI, Wanfang Data, and Web of Science, focusing on journal articles, dissertations, and monographs related to educational technology integration, including theories on technology acceptance, blended learning, and intelligent education. Practical experience of other universities was obtained through case studies, university official websites, and academic conference materials. This involved analyzing the models and strategies adopted by leading universities in educational technology integration, such as their approaches to smart campus construction, the development of AI courses, and the effectiveness of teaching support systems, to provide a comparative reference for Yangzhou University's case.

Throughout the data collection process, strict quality control measures were implemented. For interview data, semi-structured interview outlines were developed in advance to ensure the comprehensiveness and focus of the interviews, and audio recordings were transcribed verbatim for subsequent analysis. For classroom observation data, observation checklists were used to record objective information, and field notes were taken to capture subjective experiences and insights. For document data, the authenticity and authority of the sources were verified, and only official and peer-reviewed materials were included. For secondary research data, inclusion and exclusion criteria were established to ensure the relevance and timeliness of the selected literature and policy documents. These rigorous data collection methods laid a solid foundation for the subsequent data analysis and research conclusions.

Sub-Section 2: Data Analysis

The collected data is analyzed by the content analysis method and the comparative analysis method: on the one hand, the content analysis method is used to sort out and refine the challenges, measures and effects of Yangzhou University's educational technology integration, and construct the analysis framework of "challenge-measure-effect"; on the other hand, the comparative analysis method is used to compare the practical experience of Yangzhou University with the common problems of local universities in educational technology integration, and summarize the universal reference significance of its practice.

For the content analysis, first, all relevant materials, including official documents, activity reports, teacher interviews, and student feedback, were systematically coded. Open coding was initially conducted to extract key concepts related to challenges (such as insufficient technical support, teacher resistance to change, and mismatched teaching resources), measures (including teacher training programs, curriculum design optimization, and infrastructure upgrades), and effects (like improved teaching efficiency, enhanced student engagement, and increased digital literacy). Axial coding was then employed to establish connections between these concepts, forming categories such as "technical environment constraints" under challenges, "capacity building initiatives" under measures, and "teaching quality improvement" under effects. This process ensured that the "challenge-measure-effect" framework was not only theoretically sound but also grounded in empirical evidence.

In the comparative analysis, a set of evaluation indicators was developed based on the common problems identified in previous studies on local universities, such as resource allocation, teacher professional development, and institutional support mechanisms. Yangzhou University's practices were then benchmarked against these indicators. For instance, in terms of teacher training, while many local universities offer sporadic workshops, Yangzhou University implemented a continuous professional development system with tiered training modules (beginner, intermediate, and advanced) tailored to different teacher needs. By comparing the frequency, content, and participant feedback of these training programs with those of other institutions, the study highlighted how Yangzhou University's approach effectively addressed the common issue of superficial teacher training. Similarly, in infrastructure construction, the university's investment in smart classrooms with interactive whiteboards and real-time student response systems was compared to the outdated facilities in some local universities, demonstrating how such measures mitigated the challenge of inadequate technical resources. Through this comparative process, the unique strengths and transferable strategies of Yangzhou University's educational technology integration were clearly delineated, providing actionable insights for other local universities facing similar obstacles.

RESULTS

In the process of educational technology integration, Yangzhou University has accurately identified the development challenges and formulated targeted implementation strategies, and achieved remarkable results in infrastructure construction, teaching mode innovation and talent training, realizing the transformation from "challenge" to "opportunity". The specific research results are shown in Table 1, Table 2 and Figure 1, Figure 2.

Table 1
Main Challenges Faced by Yangzhou University in Educational Technology Integration

No.	Challenge Type	Specific Performance	Influencing Factors
1	Infrastructure Construction	Unbalanced regional coverage of digital resources, insufficient intelligent teaching equipment in some secondary colleges	Historical resource allocation, regional development differences
2	Teachers' Professional Quality	Insufficient digital literacy of some teachers, low ability of applying intelligent teaching tools	Weak training system, insufficient teaching research and exchange

3	Teaching Application Mode	Single application mode of educational technology, simple superposition of technology and teaching, lack of deep integration	Conservative teaching concept, insufficient discipline characteristic design
4	Resource Sharing Mechanism	Isolated digital teaching resources between colleges, low efficiency of resource sharing and utilization	Lack of unified resource management platform, imperfect sharing mechanism

Table 2
Specific Measures of Yangzhou University in Transforming Integration Challenges

No.	Targeted Challenge	Core Measures	Implementation Path
1	Infrastructure Construction	Build a comprehensive smart campus infrastructure system	Realize full coverage of campus wireless network, build a one-stop service platform, and upgrade the digital teaching equipment of secondary colleges
2	Teachers' Professional Quality	Carry out hierarchical digital literacy training	Set up special training courses, organize cross-college teaching research, and build an AI teaching experience center
3	Teaching Application Mode	Develop AI-enabled characteristic courses and build a full-link teaching support system	Take <i>Soil Fertilizer Science</i> as a pilot, build an AI teaching assistant system, and construct a multi-dimensional intelligent evaluation system
4	Resource Sharing Mechanism	Construct a unified digital teaching resource library	Integrate the teaching resources of each college, build a discipline resource sharing platform, and realize the interconnection of resources

Yangzhou University's series of measures have achieved remarkable practical effects, and the integration of educational technology has been fully deepened in all aspects of education and teaching. The *Soil Fertilizer Science* smart course developed by the School of Environmental Science and Engineering with the support of DeepSeek large model has become a typical case of AI empowerment education, with a cumulative visit volume of 90916 times. The AI teaching assistant system built by the university has improved teachers' lesson preparation efficiency by 40% , and the intelligent evaluation system has realized the automatic correction of open-ended test questions, effectively reducing teachers' repetitive work and increasing the time of teacher-student interaction.

In terms of student learning experience, the implementation of educational technology integration has brought about positive changes. A survey conducted among 1,200 students from different grades and majors showed that 87.3% of the respondents expressed satisfaction with the smart course resources, believing that the interactive learning modules and visualized teaching content in the *Soil Fertilizer Science* smart course had significantly enhanced their interest in the subject. The AI teaching assistant system, which provides personalized learning guidance and around the clock, has enabled 68.5%

of students to report an improvement in their independent learning ability. Specifically, in the final exam of the Soil Fertilizer Science course, the average score of students who frequently used the smart course resources was 12.6 points higher than that of students who rarely used them, and the passing rate increased by 9.2 percentage points. Additionally, the intelligent evaluation system's automatic correction of open-ended test questions has not only reduced the time for result feedback from an average of 3 days to 4 hours but also ensured the fairness and objectivity of the evaluation. Teachers reported that after using the system, the number of students who actively participated in after-class discussions and asked questions increased by 45%, as the timely feedback allowed students to quickly identify their knowledge gaps and seek help promptly.

Note: The figure shows the improvement rate of teaching efficiency, the increase rate of teacher-student interaction time and the satisfaction rate of students after the application of the AI teaching support system in Yangzhou University. The data shows that the lesson preparation efficiency of teachers has increased by 40%, the teacher-student interaction time has increased by 35%, and the overall satisfaction rate of students with smart teaching has reached 92%.

Note: The figure shows the three-stage development process of Yangzhou University's educational technology integration: the infrastructure construction stage (2014-2020), the deep integration exploration stage (2020-2024) and the high-quality development stage (2024 to present). The university has completed the construction of smart campus infrastructure in the first stage, realized the pilot application of AI education in the second stage, and promoted the comprehensive popularization of "AI + discipline education" in the third stage.

In addition, Yangzhou University has realized the innovation of talent training mode through the integration of educational technology. By building a smart learning module, the university customizes personalized learning paths according to students' learning situation, and effectively improves students' autonomous learning ability and learning efficiency. The school has also promoted the integration of production and education by jointly building a case database with enterprises and institutions in the Yangtze River Economic Belt, and cultivated compound talents adapted to the development of the digital economy. At the institutional level, the university has formed a long-term mechanism for the integration of educational technology by improving the digital education management system and establishing a cross-departmental coordination mechanism, which provides a system guarantee for the sustainable development of the integration work.

CONCLUSION AND FUTURE WORK

Conclusion

Taking Yangzhou University as a case study, this paper explores the practical path of transforming challenges into opportunities in the process of educational technology integration of local universities. The research draws the following conclusions: first, the challenges faced by local universities in the integration of educational technology are multi-dimensional, including infrastructure construction, teachers' professional quality, teaching application mode and resource sharing mechanism, and the solution of the challenges needs systematic and targeted strategies. Second, the core of transforming the challenges of educational technology integration into development opportunities lies in the deep integration of technology and education, not the simple superposition of technology and teaching tools. Yangzhou University takes discipline characteristics as the starting point, develops AI-

enabled characteristic courses and constructs a full-link teaching support system, which effectively realizes the deep integration of digital technology and education and teaching. Third, the construction of infrastructure and the improvement of teachers' digital literacy are the basic guarantee for the integration of educational technology. Yangzhou University has laid a solid foundation for the in-depth development of integration work by building a comprehensive smart campus infrastructure system and carrying out hierarchical digital literacy training. Fourth, the establishment of a long-term mechanism is the key to the sustainable development of educational technology integration. The sustainable development of integration work needs the support of institutional mechanisms such as resource sharing mechanism, cross-departmental coordination mechanism and evaluation incentive mechanism.

Yangzhou University's practice shows that local universities can break through the development bottleneck and realize the high-quality development of education by accurately identifying the challenges of educational technology integration, taking discipline characteristics as the starting point, and promoting the deep integration of digital technology and education and teaching. Its practical experience provides three references for local universities: first, adhere to the problem-oriented, and formulate targeted integration strategies according to their own development reality; second, adhere to the characteristic development, and combine educational technology integration with discipline characteristics and talent training goals; third, adhere to the systematic promotion, and build an integrated development system of "infrastructure-teacher team-teaching application-mechanism guarantee".

Future Work

Although Yangzhou University has made remarkable achievements in the integration of educational technology, there are still some aspects that need to be further improved and deepened in the future development path. Firstly, it is necessary to further optimize the balanced allocation of digital resources. For those secondary colleges with relatively weak development in digital teaching infrastructure, the investment should be increased. This will help to achieve the overall balanced development of educational technology integration within the entire university, ensuring that every college can benefit from the advanced digital resources and facilities. Secondly, the training system for teachers' digital literacy needs to be further improved. More targeted training courses should be set up based on the characteristics of different disciplines and the age groups of teachers. By doing so, it can effectively enhance teachers' ability to apply intelligent teaching tools to carry out innovative teaching activities, which is crucial for improving the quality of education. Thirdly, the application scope of AI-enabled education should be further expanded. The successful pilot experience of the *Soil Fertilizer Science* smart course can be promoted to more disciplines and courses. In this way, a diversified "AI + discipline education" integration mode with disciplinary characteristics can be formed, providing students with a more personalized and effective learning experience. Lastly, it is essential to further strengthen the cooperation and exchange with other universities and enterprises. By absorbing advanced practical experience from them, Yangzhou University can jointly develop high-quality digital teaching resources. This collaborative effort will contribute to building an open and shared educational technology integration ecosystem, which is conducive to promoting the sustainable development of educational technology integration in the university. Additionally, more attention should be paid to the evaluation and feedback mechanism of educational technology integration. A comprehensive evaluation system that combines quantitative data and qualitative analysis should be established to regularly assess the effectiveness of digital resource utilization, teachers' digital teaching application, and students' learning outcomes. Based on the evaluation results, timely adjustments and optimizations can be made to ensure that the integration of educational technology truly meets the needs of teaching and learning.

Furthermore, the cultivation of students' digital learning ability should be strengthened. While improving teachers' digital literacy, it is equally important to guide students to master efficient digital learning methods, enhance their ability to independently acquire and process information using digital tools, and cultivate their innovative thinking and problem-solving skills in the digital age, so as to better adapt to the development requirements of future society. On ecosystem, which will benefit not only Yangzhou University but also the whole educational community.

In the future, with the continuous development of digital technologies such as artificial intelligence, big data and meta-universe, the integration of educational technology of local universities will face new opportunities and challenges. Yangzhou University will continue to take the digital transformation of education as the core task, adhere to the student-centered concept, deepen the innovation of educational technology integration practice, and strive to build a high-level digital education system, so as to provide stronger support for the high-quality development of the university and the cultivation of compound innovative talents adapted to the development of the digital economy.

Specifically, we plan to further explore the potential of emerging technologies in personalized learning. For instance, leveraging advanced artificial intelligence algorithms, we aim to develop an intelligent learning analysis system that can accurately track and analyze each student's learning behavior, learning progress, and knowledge mastery. Based on this analysis, the system will generate personalized learning paths and resource recommendations, enabling students to learn in a more targeted and efficient manner. Additionally, we will actively promote the application of meta-universe technology in experimental teaching. By building virtual experimental environments, students can conduct various complex and dangerous experiments in a simulated space, which not only improves the safety and repeatability of experiments but also enhances students' immersive learning experience and practical operation skills. At the same time, we will strengthen the construction of a big data-driven educational decision-making platform. By collecting and analyzing a large amount of educational data, such as teaching quality, student performance, and employment trends, we can provide scientific and accurate data support for the university's educational management decisions, helping to optimize the curriculum system, improve teaching methods, and enhance the overall level of talent cultivation. Furthermore, we will deepen international cooperation and exchanges in the field of educational technology. By learning from the advanced experience and practices of foreign universities, we will introduce cutting-edge educational technologies and concepts, and promote the internationalization of our digital education system, so as to better adapt to the needs of global talent competition and the development of the digital economy.

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EDUCATIONAL MANAGEMENT FACTORS AND OCCUPATIONAL BURNOUT AMONG ADMINISTRATIVE PERSONNEL IN CHINESE HIGHER EDUCATION INSTITUTIONS

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ABSTRACT

Occupational burnout among administrative personnel has become an emerging concern in Chinese higher education institutions, particularly under ongoing governance reform and performance-oriented management systems. While existing studies have predominantly focused on faculty burnout, limited empirical attention has been given to administrative staff, who play a critical role in institutional operations. This study examines the relationship between educational management factors and occupational burnout among administrative personnel in Chinese higher education institutions. Drawing upon the Job Demands-Resources model and Maslach's three-dimensional burnout framework, the study investigates five key management dimensions: workload, organizational support, leadership style, career development opportunities, and job autonomy. A mixed-method approach was employed, including a questionnaire survey of 127 administrative personnel and in-depth interviews with five key informants. The reliability of the instrument was confirmed with a Cronbach's alpha coefficient of 0.85. The findings indicate that educational management factors are significantly associated with occupational health status. Among the examined dimensions, job autonomy and leadership style demonstrate the strongest positive relationship with reduced burnout levels, while workload and organizational support show comparatively weaker but still meaningful effects. The results highlight the importance of balancing managerial demands and organizational resources in Chinese higher education contexts. The study provides empirical evidence for optimizing educational management practices to enhance administrative personnel's occupational well-being and institutional sustainability.

Keywords: Educational management; Occupational burnout; Administrative personnel; Chinese higher education; Job Demands-Resources model

INTRODUCTION

In recent decades, Chinese higher education has undergone significant governance reform characterized by expansion, performance evaluation mechanisms, digital transformation, and increasing accountability requirements. Universities are expected not only to provide high-quality teaching and research but also to improve administrative efficiency and institutional management capacity. Within this reform context, administrative personnel have assumed increasingly complex responsibilities, including academic coordination, student services, quality assurance documentation, data management,

and policy implementation. As institutional expectations continue to rise, administrative staff frequently operate under conditions of intensified workload and role pressure.

Occupational burnout, originally conceptualized by Freudenberger (1974) and later developed by Maslach and Jackson (1981), refers to a psychological syndrome characterized by emotional exhaustion, depersonalization, and reduced personal accomplishment resulting from prolonged work stress. The World Health Organization (2019) recognizes burnout as an occupational phenomenon linked to chronic workplace stress that has not been successfully managed. Extensive research has demonstrated that burnout negatively affects individual well-being, job performance, organizational commitment, and service quality (Maslach, Schaufeli, & Leiter, 2001; Schaufeli & Bakker, 2004).

In the field of higher education, prior research has primarily concentrated on teacher burnout, while comparatively limited attention has been given to administrative personnel. However, administrative staff constitute an essential component of university governance systems. Their work directly influences institutional effectiveness, operational stability, and educational service delivery. Particularly in Chinese higher education institutions—especially application-oriented and regionally based universities—administrative personnel frequently encounter high demands combined with relatively constrained organizational resources. This imbalance may increase the risk of occupational burnout.

Educational management plays a central role in shaping the working conditions of administrative personnel. Management practices related to workload distribution, leadership style, organizational support, career development systems, and job autonomy can either intensify job demands or provide essential organizational resources. According to the Job Demands–Resources (JD–R) model (Demerouti et al., 2001; Bakker & Demerouti, 2017), burnout emerges when job demands exceed available resources, whereas sufficient organizational resources can buffer stress and promote occupational well-being.

Despite the theoretical relevance of educational management to burnout outcomes, empirical evidence examining this relationship within the Chinese higher education context remains limited. Existing domestic studies largely focus on teaching staff and seldom analyze administrative personnel through an integrated management framework. Therefore, this study aims to examine the relationship between educational management factors and occupational burnout among administrative personnel in Chinese higher education institutions. By focusing on five key management dimensions—workload, organizational support, leadership style, career development opportunities, and job autonomy—this research provides empirical insights into how management practices influence occupational health in a Chinese institutional setting.

METHODOLOGY

This study employed a mixed-method research design to examine the relationship between educational management factors and occupational burnout among administrative personnel in Chinese higher education institutions. The research was conducted in an application-oriented undergraduate institution located in Yunnan Province, China.

Participants

The population consisted of 188 administrative personnel across 15 administrative departments. Based on the Krejcie and Morgan sampling table (1970), a sample size of 127 respondents was determined and valid questionnaires were collected, yielding a response rate of 100% of the distributed sample. The respondents represented a diverse range of age groups, educational backgrounds, work experience levels, and employment statuses, ensuring adequate representativeness.

Instrument

The research instrument consisted of a structured questionnaire with two sections. The first section collected demographic information. The second section included 40 items measuring five educational management dimensions:

Workload

Organizational Support

Leadership Style

Career Development Opportunities

Job Autonomy

A five-point Likert scale was used. To facilitate interpretation, burnout indicators were converted into occupational health indicators, with higher scores representing lower burnout levels.

To ensure reliability, a pilot test was conducted with 30 participants. The overall Cronbach's alpha coefficient was 0.85, indicating good internal consistency.

In addition to the questionnaire survey, five in-depth interviews were conducted with administrative personnel and management representatives to provide contextual insights into management practices and occupational experiences.

Data Analysis

Descriptive statistics, including mean and standard deviation, were calculated to assess the overall occupational health level and the implementation status of each educational management factor. Content analysis was applied to interview data to supplement quantitative findings and enhance interpretative depth.

RESULTS

The results indicate that the overall occupational health status of administrative personnel was at a relatively high level, with a mean score of 3.61 (SD = 0.77). Since burnout indicators were reverse-coded, higher scores represent lower levels of occupational burnout. This suggests that, overall, administrative personnel in the studied institution demonstrate a moderate to low level of burnout under current educational management practices.

Among the five educational management dimensions examined, job autonomy received the highest mean score (M = 3.67, SD = 0.76), followed closely by leadership style (M = 3.65, SD = 0.79). Career development opportunities also showed a relatively strong level (M = 3.61, SD = 0.74). These findings suggest that administrative personnel perceive a relatively supportive leadership environment

and sufficient autonomy in performing their duties, which may contribute to maintaining occupational health.

Workload ($M = 3.57$, $SD = 0.78$) and organizational support ($M = 3.55$, $SD = 0.80$) were rated slightly lower compared to other dimensions, although still within a high-level range. Certain workload-related items, particularly those concerning long-term occupational sustainability and alignment between task allocation and resource support, received comparatively moderate scores. Similarly, items related to evaluation transparency and timely managerial guidance under the organizational support dimension reflected areas requiring further improvement.

Interview findings further supported the quantitative results. Participants indicated that while leadership communication and participatory decision-making were generally positive, administrative workload intensified during institutional evaluation periods and governance reform processes. Several interviewees emphasized that autonomy in task execution and constructive leadership feedback played important roles in reducing stress and maintaining motivation.

Overall, the findings demonstrate that educational management factors are closely associated with occupational health conditions among administrative personnel. In particular, management practices that enhance autonomy and constructive leadership appear to contribute more strongly to reduced burnout risk, while workload management and organizational support mechanisms require continued optimization.

CONCLUSION AND FUTURE WORK

This study examined the relationship between educational management factors and occupational burnout among administrative personnel in Chinese higher education institutions. Drawing upon the Job Demands–Resources framework, the research explored how five key management dimensions—workload, organizational support, leadership style, career development opportunities, and job autonomy—are associated with occupational health status.

The findings indicate that the overall level of occupational burnout among administrative personnel in the studied institution remains relatively moderate to low. However, variations across management dimensions reveal important structural patterns. Job autonomy and leadership style emerged as the strongest positive factors associated with occupational health, suggesting that participatory leadership, constructive communication, and flexible task execution play significant roles in buffering occupational stress. In contrast, workload and organizational support, although evaluated positively overall, demonstrated comparatively weaker performance, indicating potential areas for further managerial optimization.

Within the context of Chinese higher education governance reform, administrative personnel are increasingly positioned at the intersection of policy implementation, digital transformation, performance evaluation, and service coordination. These institutional pressures create heightened job demands. The findings of this study suggest that educational management practices that enhance organizational resources—particularly leadership support and autonomy—can mitigate burnout risk and promote sustainable administrative functioning.

This research contributes to the literature by shifting attention from faculty burnout to administrative personnel in Chinese higher education institutions. It also provides empirical support for

applying management-based explanatory frameworks to occupational well-being within educational organizations.

Several limitations should be acknowledged. First, the study was conducted within a single application-oriented institution, which may limit generalizability across different institutional types in China. Second, the research relied primarily on descriptive statistical analysis rather than inferential modeling. Future research may employ multi-institutional sampling and advanced statistical techniques, such as regression analysis or structural equation modeling, to examine causal pathways between educational management variables and burnout outcomes. Longitudinal designs may also help explore dynamic changes in occupational health under ongoing governance reform.

In conclusion, optimizing educational management structures—particularly in terms of leadership practices, workload allocation, and resource support—represents a crucial strategy for promoting administrative personnel's occupational well-being and enhancing institutional sustainability in Chinese higher education.

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GUIDELINE FOR DEVELOPING EDUCATIONAL RESOURCES MANAGEMENT OF CHENGdong EXPERIMENTAL PRIMARY SCHOOL

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ABSTRACT

This study focuses on developing a resource management development guide for Chengdong Experimental Primary School, aiming to assess the school's current practices and create a tailored framework aligned with its developmental characteristics. Grounded in educational resource management theories, the research identifies five key dimensions: strategic resource planning, human resource management, physical resource management, digital learning resource management, and efficient resource utilization. The study sample includes 213 administrative staff and teachers, with 140 teachers selected through Krejcie and Morgan's (1970) sample size determination method for quantitative analysis. Additionally, nine school administrators, veteran teachers, and digital resource coordinators were chosen as key informants for in-depth interviews. A mixed-method approach combining literature review, questionnaire surveys, in-depth interviews, and field observations was employed. Through quantitative analysis, the study clarifies the school's current status, strengths, and weaknesses in resource management across all dimensions. Qualitative research delves into specific challenges, underlying causes, and barriers to resource integration in practice. Ultimately, the study formulates a practical, systematic, and school-specific resource management development guide that aligns with primary education principles and the school's unique characteristics. The research findings not only provide empirical evidence and actionable guidance for Chengdong Experimental Primary School to optimize educational resource management, enhance resource utilization efficiency, and improve school performance, but also offer a replicable reference template for experimental primary schools in the region with similar educational backgrounds and management models. This contributes to the standardization, scientification, and digitalization of educational resource management at the primary level, facilitating the maximization of educational resources' pedagogical value under the context of high-quality development in basic education.

Keywords: Education Resource Management; Digital Learning Resources; Efficient Resource Utilization; School-Based Management

INTRODUCTION

Educational resource management stands as a fundamental and pivotal component in driving the high-quality development of basic education, bearing direct influence on the smooth advancement of

teaching activities, the enhancement of school operational efficiency, and the ultimate realization of educational and nurturing values at the primary school stage. As the foundational link of the national education system, primary education is responsible for laying a solid cognitive and developmental foundation for students' lifelong learning, and its quality improvement is inseparable from the scientific planning, rational allocation, and efficient utilization of educational resources. In the context of the global wave of educational digital transformation, the form and connotation of primary school educational resources have undergone profound changes: digital learning resources such as intelligent teaching platforms, digital courseware, and online educational databases are rapidly emerging and integrating with traditional educational resources including human resources, physical teaching facilities, and financial support. This integration not only injects new vitality into the optimization of primary school educational resource management but also puts forward higher requirements for the professionalization and systematization of resource management work, bringing unprecedented challenges to primary school educators and managers.

In the current practice of primary school educational resource management, a series of common predicaments have gradually become prominent and restricted the high-quality development of primary education. These problems mainly manifest in the insufficient deep integration of digital and traditional educational resources, the imbalance of resource allocation among different grades, disciplines and functional modules, the low overall utilization efficiency of resources caused by idle and repetitive allocation, the lack of standardized and institutionalized management processes in resource planning, allocation, utilization and monitoring, and the absence of a systematic and school-adapted resource management framework. For experimental primary schools that shoulder the mission of educational reform piloting and innovative teaching practice, the above problems are more likely to lead to the mismatch between resource supply and the actual needs of educational innovation, making it difficult to give full play to the supporting role of resources in experimental teaching and characteristic development.

Chengdong Experimental Primary School, as a representative experimental primary school in its region, undertakes important social responsibilities such as implementing school-level educational reform policies, exploring innovative primary education teaching models, and demonstrating advanced educational management practices. Its educational resource management practice not only reflects the universal characteristics of primary school resource management in the era of digital transformation but also has unique research value due to its experimental school positioning, specific organizational structure, and regional educational development needs. However, the school's current educational resource management system still lacks a standardized and systematic operational model: there are obvious unbalanced development phenomena in the five core dimensions of strategic educational resource planning, human resource management, physical resource management, digital learning resource management, and efficient resource utilization; the collaborative and synergistic effect between digital learning resources and traditional physical and human resources has not been fully realized; the resource management mechanism is not perfect, and the professional development of teachers is not fully matched with the actual needs of resource utilization; the ability of data-informed decision-making in resource management is insufficient, and the autonomy of school-based resource management has not been effectively implemented. These problems make the school's educational resource management unable to fully adapt to its development positioning as an experimental primary school and the practical needs of high-quality and characteristic educational teaching, and restrict the further exertion of the school's experimental and demonstrative role in regional primary education.

In view of the above research background and practical problems, this study takes the educational resource management of Chengdong Experimental Primary School as the core research

object, with the development of a school-adapted educational resource management development guide as the core research goal. Based on the systematic combing of domestic and foreign educational resource management theories, research results and relevant policy documents, the study identifies five key research dimensions of primary school educational resource management: strategic educational resource planning, human resource management, physical resource management, digital learning resource management, and efficient resource utilization. By adopting scientific and rigorous mixed research methods, the study conducts an in-depth and systematic investigation on the actual level of educational resource management in Chengdong Experimental Primary School, deeply excavates the core problems, underlying causes and restrictive factors in the school's resource management practice, and objectively clarifies the development strengths, existing weaknesses and prominent gaps of the school in each core management dimension.

On the basis of the above research, this study fully combines the basic laws of primary education, the school-running characteristics, experimental positioning and actual developmental needs of Chengdong Experimental Primary School, and formulates a practical, systematic and school-specific educational resource management development guide. The formulation of this guide adheres to the principles of combining theory with practice, adapting to local conditions and focusing on operability, and clarifies the optimization strategies, specific implementation paths and safeguard measures for each core dimension of the school's educational resource management.

The research significance of this study is reflected in both practical and academic aspects. In terms of practical significance, the research results can provide empirical evidence and actionable operational guidance for Chengdong Experimental Primary School to optimize its educational resource management practice, improve resource utilization efficiency, perfect the resource management mechanism, and give full play to the synergistic educational effect of various resources, helping the school to better play its experimental and demonstrative role in regional primary education reform and development. At the same time, the educational resource management development guide formulated in this study can also provide a replicable and referable practical template for other experimental primary schools and ordinary primary schools with similar educational backgrounds, management models and developmental needs in the region, so as to promote the standardization, scientification and digitalization of educational resource management at the primary education stage, and help more primary schools solve the common problems in resource management. In terms of academic significance, this study enriches the practical research on school-based educational resource management of primary schools under the background of digital transformation, and provides micro-level case support and practical references for the in-depth research of educational resource management theory, so as to further promote the innovation and development of primary education management theory and practice. In a broader sense, this study also hopes to provide practical references for educational administrators and policymakers to formulate relevant primary education resource management policies, so as to further promote the high-quality development of basic education and maximize the educational and nurturing value of educational resources.

OBJECTIVE

1.Study the actual level of educational resources management in Chengdong Experimental Primary School.

2.Developing the Guide of Educational Resource Management for the Development of the School.

3.It provides a practical reference for the resource management of the school and similar primary schools in the region.

METHODOLOGY

This study employs a “mixed-methods approach combining quantitative and qualitative methods”, with the educational resource management of Chengdong Experimental Primary School as the research subject. It comprehensively utilizes “literature review”, “questionnaire survey”, and “in-depth interviews” to conduct the research, as detailed below:

Sub-Section 1

The literature research method: sorts out the related theories of educational resource management, domestic and foreign research results and policy documents, builds the research theoretical framework, defines the core research dimensions;

Sub-Section 2

Questionnaire survey: 140 teachers in the school were selected as samples. The questionnaire was designed around five dimensions of strategic resource planning, human resources, material resources, digital learning resources management and efficient utilization of resources, and the overall level of resource management in the school was quantitatively analyzed.

Sub-Section 3

In-depth interview method: Nine key information sources including school administrators, veteran teachers and digital resource coordinators were selected to conduct semi-structured interviews to explore the specific problems and causes of resource management in the school.

Sub-Section 4

Comprehensive Analysis Method: By synthesizing quantitative and qualitative research data and aligning with the institution's operational realities, we develop tailored guidelines for educational resource management and development.

RESULTS

1. The analysis reveals that the overall management level of educational resources at Chengdong Experimental Primary School is inadequate. Five core dimensions—strategic resource planning, human/material resources management, digital learning resource management, and efficient resource utilization—show significant imbalances. Specific issues include lack of forward-looking planning, uneven resource allocation, low utilization efficiency, and non-standardized management processes in some areas. Additionally, there is insufficient integration and coordination between digital and traditional resources.

2.The paper identifies the core pain points and constraints of the school's resource management, including imperfect resource management mechanism, mismatch between teachers' professional

development and resource utilization needs, insufficient data-driven decision-making ability, and inadequate implementation of resource management autonomy.

3. Combined with the school situation and the theory of educational resource management, the guide of educational resource management development is constructed and formed, which is suitable for Chengdong Experimental Primary School. The optimization strategies, implementation paths and safeguard measures of five dimensions are defined, which is both practical and systematic.

4. The guidelines not only fit the experimental orientation and development needs of the school, but also provide a replicable and referenceable template for the management of educational resources for primary schools with similar backgrounds in the region.

CONCLUSION AND FUTURE WORK

This study takes the educational resource management of Chengdong Experimental Primary School as the core research focus, centering on the dual research objectives of evaluating the school's actual resource management level and developing a tailored management guide. Based on the theoretical framework of educational resource management, the study defines five core research dimensions—strategic educational resources planning, human resource management, material resource management, digital learning resource management, and efficient resource utilization—and adopts a rigorous mixed-methods research approach integrating quantitative and qualitative analysis. By combining literature review, questionnaire surveys, in-depth interviews and field observations, the study conducts a systematic and in-depth investigation and analysis of the school's resource management practice, and draws comprehensive and targeted research conclusions, while also proposing future research directions and practical application suggestions for educational resource management in primary schools.

First and foremost, the study has a clear and comprehensive understanding of the current development status of educational resource management in Chengdong Experimental Primary School. The research results show that the school's educational resource management work has a certain foundation in practice, and has made initial explorations in digital learning resource construction and teacher team development, which is consistent with the basic development requirements of primary education in the digital era. However, there are prominent unbalanced development characteristics among the five core management dimensions: the construction of basic material resources is relatively complete, but the strategic planning of educational resources lacks long-term and forward-looking design, and the connection between resource planning and the school's long-term development vision and educational innovation goals is not close enough; the human resource team has a basic scale, but the professional development of teachers is not effectively matched with the actual needs of resource utilization, especially the digital literacy and resource integration application ability of front-line teachers need to be further improved; digital learning resources have been initially built, but there is a problem of "fragmentation" in resource construction, and the deep integration and synergistic application effect with traditional teaching resources and classroom teaching practice are not significant; the overall utilization efficiency of educational resources is low, with phenomena such as idle resources and repetitive allocation in individual disciplines and functional modules, and the whole-process monitoring and evaluation mechanism of resource utilization is not perfect. In addition, the study also identifies the core pain points and restrictive factors restricting the optimization and development of the school's educational resource management, including the imperfection of the systematic resource management mechanism,

the lack of data-informed decision-making capacity in resource allocation and planning, the insufficient implementation of school-based resource management autonomy, and the lack of a sound collaborative mechanism for the integration of various resources. These problems are intertwined and restrict each other, making it difficult for the school's educational resource management to fully adapt to its positioning as an experimental primary school and the practical needs of high-quality and characteristic education and teaching.

Secondly, based on the research results and in combination with the basic laws of primary education, the school-running characteristics, experimental positioning and actual development needs of Chengdong Experimental Primary School, the study has formulated a practical, systematic and school-specific educational resource management development guide. The guide takes the maximization of the educational value of resources and the promotion of the high-quality development of the school as the core goal, and puts forward targeted optimization strategies, specific implementation paths and guaranteed safeguard measures for each of the five core management dimensions. In terms of strategic educational resources planning, the guide clarifies the need to establish a forward-looking planning mechanism linked to the school's development vision, and carry out resource demand assessment and priority setting based on the actual needs of teaching innovation and characteristic development; in terms of human resource management, it focuses on improving the teacher professional development system, and strengthens the training of teachers' digital literacy and resource integration application ability; in terms of material resource management, it proposes to build a full-life-cycle management mechanism to optimize resource allocation and reduce idle waste; in terms of digital learning resource management, it emphasizes the integration and standardized construction of digital resources, and promotes the deep integration of digital resources and classroom teaching; in terms of efficient resource utilization, it clarifies the need to build a whole-process monitoring and evaluation system, and take data analysis as the basis to realize the dynamic adjustment of resource allocation. The formulation of this guide adheres to the principle of combining theory with practice and focusing on operability, and fully takes into account the actual situation and development needs of the school, which provides a clear and actionable operational blueprint for the school to optimize its educational resource management practice.

Thirdly, the research results have important practical application value and reference significance for Chengdong Experimental Primary School and similar primary schools in the region. For Chengdong Experimental Primary School, the research clarifies the existing problems and improvement directions of the school's educational resource management, and the formulated development guide provides empirical evidence and specific operational guidance for the school to optimize the resource management mechanism, improve resource utilization efficiency, and give full play to the synergistic educational effect of various resources. The implementation of the guide will help the school to make up for the shortcomings of resource management, realize the scientific and standardized development of educational resource management, and further enhance the school's educational innovation capacity and school-running efficiency, so that the school can better play its experimental and demonstrative role in regional primary education reform and development. For other experimental primary schools and ordinary primary schools with similar educational backgrounds, management models and development needs in the region, the research framework, research methods and the formulated management guide of this study provide a replicable and referable practical template. The common problems in resource management identified in the study are also highly representative in the current primary education stage, and the optimization strategies and solutions proposed in the guide can provide important reference for peer schools to solve similar resource management problems, which is conducive to promoting the

overall standardization, scientification and digitalization of educational resource management at the primary education stage in the region.

In addition to the above research conclusions, this study also reflects on the limitations of the current research, and puts forward relevant future research directions and practical suggestions. On the one hand, the current research takes Chengdong Experimental Primary School as a single case study, and the research results are highly adapted to the school's actual situation, which has certain regional and school-specific characteristics. In the future, the research scope can be expanded to include more primary schools with different school-running scales, different regional characteristics and different development levels, so as to carry out comparative research and further enrich and improve the theoretical framework and practical strategies of primary school educational resource management. On the other hand, the current research focuses on the formulation of the educational resource management development guide, and the follow-up research can carry out empirical research on the implementation effect of the guide, track and evaluate the implementation process and effect of the guide in the school, and adjust and optimize the guide according to the actual implementation situation, so as to make the guide more in line with the actual development needs of the school and form a closed loop of 'research-formulation-implementation-optimization' of educational resource management. In terms of practical application, it is suggested that primary schools should take the improvement of educational resource management capacity as an important starting point for promoting high-quality development, establish a systematic resource management concept, pay attention to the deep integration of digital and traditional resources, and strengthen the construction of teachers' resource application ability. At the same time, it is also suggested that educational administrative departments should give appropriate school-based resource management autonomy to primary schools, provide policy support and professional guidance for the optimization of primary school educational resource management, and promote the overall improvement of educational resource management level in the primary education stage.

In general, this study has completed the systematic research on the educational resource management of Chengdong Experimental Primary School, and the research results not only provide targeted solutions and operational guidance for the school to solve the practical problems of resource management, but also enrich the practical research on school-based educational resource management of primary schools under the background of digital transformation. The educational resource management development guide formulated in the study conforms to the development trend of primary education in the new era and the actual needs of primary school management practice, which has important practical significance for promoting the high-quality development of primary education and maximizing the educational and nurturing value of educational resources. In the future, with the in-depth promotion of educational digital transformation and the continuous improvement of primary education quality requirements, the research on primary school educational resource management needs to be further deepened and expanded, so as to provide more scientific and practical theoretical support and practical guidance for the high-quality development of basic education.

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INNOVATIVE RESEARCH ON INTERNATIONALIZATION IN EDUCATIONAL MANAGEMENT AT FRONTIER LOCAL UNIVERSITIES IN THE NEW ERA: A CASE STUDY OF WENSHAN UNIVERSITY

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ABSTRACT

In the new era, the internationalization of educational management has become a core driving force for the high-quality development of frontier local universities, which is not only an inevitable requirement for integrating into the global higher education system but also a key path to break through the development bottlenecks of regional universities. Taking Wenshan University, a typical frontier local university in Yunnan Province, as the research object, this paper adopts the case study method to systematically sort out the practical exploration and specific cases of Wenshan University in the internationalization of educational management, deeply analyze the existing shortcomings and restrictive factors in its development process, and excavate the potential development opportunities endowed by the regional location, national policies and industry demand. On this basis, the paper combines the development characteristics of frontier local universities and the actual situation of Wenshan University, puts forward targeted innovative strategies for the internationalization of educational management, and outlines a clear and feasible future development pathway. The research results are expected to provide practical reference and experience inspiration for the internationalization construction of educational management in similar frontier local universities in China, and promote the high-quality and characteristic development of frontier local higher education.

Keywords: New Era; Frontier Local Universities; Educational Management; Internationalization; Wenshan University

INTRODUCTION

In the context of economic globalization and educational internationalization, the internationalization of higher education has become an important symbol of the modernization level of a country's higher education system. Frontier local universities, as an important part of China's higher education system, are located in the border areas with unique geographical location, ethnic cultural characteristics and regional development demands. Their internationalization of educational management is not only related to their own ability to improve the quality of talent training, enhance scientific research strength and expand social service functions, but also plays a vital role in promoting regional economic and cultural exchanges, strengthening border ethnic unity and serving the national opening-up strategy.

The new era has brought new opportunities and challenges for the internationalization of educational management in frontier local universities. On the one hand, the national strategies such as the Belt and Road Initiative, the Construction of China-ASEAN Community with a Shared Future and the High-quality Development of Western China have provided policy support, resource channels and cooperation platforms for the internationalization of frontier local universities. On the other hand, compared with key universities and coastal local universities, frontier local universities are faced with many restrictive factors such as weak comprehensive strength, insufficient internationalization awareness, shortage of high-level international talents, single cooperation channels and imperfect management mechanisms in the process of educational management internationalization, which lead to the slow development speed, low development level and lack of characteristic development in the internationalization of educational management of most frontier local universities.

Wenshan University, located in Wenshan Zhuang and Miao Autonomous Prefecture, Yunnan Province, is a local undergraduate university rooted in the frontier and serving the regional development. It is adjacent to ASEAN countries such as Vietnam, with obvious geographical advantages for international exchanges and cooperation. In recent years, Wenshan University has carried out a series of practical explorations in the internationalization of educational management, such as international talent training, cross-border academic exchanges, and cooperative education with foreign universities. However, in the actual development process, it still faces many practical problems that need to be solved urgently.

Based on this research background, this paper takes Wenshan University as a typical case to conduct in-depth research on the internationalization of educational management of frontier local universities in the new era. By sorting out practical cases, analyzing shortcomings and exploring opportunities, the paper aims to put forward innovative strategies and development pathways suitable for the internationalization of educational management of Wenshan University, so as to fill the research gap of internationalization of educational management of frontier local universities in southwest China to a certain extent, and provide reference for the high-quality development of internationalization of educational management of similar universities. The research has important theoretical significance for enriching the research system of internationalization of higher education in China and important practical significance for promoting the characteristic and international development of frontier local universities.

OBJECTIVE

1. To systematically sort out the practical cases of Wenshan University's internationalization in educational administration, deeply analyze its existing shortcomings in the development process, and excavate the potential development opportunities endowed by regional advantages, national policies and industrial development.
2. To put forward targeted and innovative strategies for the internationalization of educational administration at Wenshan University in combination with the development characteristics of frontier local universities, and outline a clear, scientific and feasible future development pathway for its internationalization of educational administration.

METHODOLOGY

This paper takes the internationalization of educational management at Wenshan University as the research object, and mainly adopts the case study method, supplemented by literature research

method, field investigation method and interview method to carry out the research, so as to ensure the comprehensiveness, authenticity and in-depth of the research content. The specific research methods and implementation steps are as follows:

Sub-Section 1: Literature Research Method

First of all, the research team combs and sorts out the relevant domestic and foreign literature, including the research results on the internationalization of higher education, the internationalization of educational management, the development of frontier local universities and the international cooperation of border higher education. By reading and analyzing the core literature, the paper clarifies the connotation, characteristics and development laws of the internationalization of educational management of frontier local universities, grasps the latest research trends and research hotspots in this field, and lays a solid theoretical foundation for the follow-up case analysis and strategy formulation. At the same time, the paper sorts out the national and local policies related to the internationalization of higher education and the development of frontier universities, and extracts the policy support points related to the research object.

Sub-Section 2: Case Study Method

Taking Wenshan University as a single typical case, the paper conducts in-depth and systematic research on its internationalization of educational management. The research team sorts out the development history, current situation and specific practical cases of Wenshan University's internationalization of educational management, including the construction of international talent training system, the formulation of internationalization management rules and regulations, cross-border academic exchange activities, cooperative education projects with foreign universities, the introduction and training of international teachers and other aspects. Through the induction and summary of practical cases, the paper forms a comprehensive understanding of the current development of internationalization of educational management at Wenshan University, and provides realistic materials for the subsequent analysis of shortcomings and exploration of opportunities.

Sub-Section 3: Field Investigation and Interview Method

The research team conducts field investigations on Wenshan University, and conducts in-depth interviews with the relevant person in charge of the school's administrative management department, the person in charge of the secondary college, international teachers, domestic teachers with international exchange experience and international students. The interview content focuses on the current problems, restrictive factors, development demands and expected goals in the process of internationalization of educational management at Wenshan University. At the same time, the research team collects first-hand data such as the school's internationalization work report, statistical data of cooperative projects and talent training quality evaluation results through field investigation. The combination of field investigation and interview method makes the research conclusions more realistic and reliable, and provides an empirical basis for the formulation of innovative strategies and development pathways.

On the basis of the above research methods, the research team sorts out, collates and analyzes the collected theoretical data and empirical materials, and forms the research results of the paper through induction, deduction and comprehensive analysis.

RESULTS

Current Practical Cases of Internationalization in Educational Administration at Wenshan University.

After years of exploration and practice, Wenshan University has initially carried out a series of work in the internationalization of educational management, and formed a number of practical cases with certain regional characteristics, which mainly reflect in three aspects as shown in Table 1.

Table 1 Practical Cases of Internationalization in Educational Administration at Wenshan University

No.	Type of Practice	Specific Cases	Implementation Effect
1	International Talent Training	Carrying out Chinese language training for Vietnamese international students; setting up ethnic cultural courses open to international students; carrying out short-term exchange programs for students with Vietnamese universities	Cultivated a number of international students who understand Chinese and border ethnic culture; improved the international vision of domestic students; initially formed a talent training model combining regional characteristics and internationalization
2	Cross-border Academic Exchanges	Holding cross-border academic seminars on border ethnic culture and regional economic development with ASEAN universities; inviting foreign scholars to give lectures and carry out scientific research cooperation; sending teachers to foreign universities for further study and academic exchange	Enriched the academic research content of the school; improved the scientific research level and internationalization ability of teachers; established preliminary academic exchange relations with some ASEAN universities
3	Educational Management System Construction	Formulating the management measures for international students of Wenshan University; setting up a special department to be responsible for international exchange and cooperation work; formulating the incentive policies for teachers' international exchange	Initially established a management system for internationalization work; clarified the responsible subject of international exchange and cooperation; stimulated the enthusiasm of some teachers to participate in international exchange activities

Existing Shortcomings of Internationalization in Educational Administration at Wenshan University

Through in-depth analysis of the practical cases and interview results, it is found that the internationalization of educational management at Wenshan University is still in the initial development stage, and there are obvious shortcomings and restrictive factors compared with the high-quality development requirements of the new era, as shown in Table 2.

Table 2 Existing Shortcomings of Internationalization in Educational Administration at Wenshan University

No.	Type of Shortcoming	Specific Performance	Restrictive Impact
1	Weak Internationalization Awareness	The top-level design of educational management internationalization is insufficient; the understanding of internationalization of secondary colleges and teachers is superficial; the internationalization is regarded as a "supplementary work" rather than a core development strategy	Lack of long-term development planning for internationalization work; the enthusiasm and initiative of all departments to participate in internationalization work are insufficient; the internationalization development is relatively blind
2	Imperfect Management Mechanism	The international exchange and cooperation department has insufficient authority and limited staffing; the coordination mechanism between different departments is not smooth; the evaluation and supervision mechanism of internationalization work is not perfect	Low efficiency of internationalization work implementation; frequent occurrence of departmental coordination problems; difficult to effectively evaluate the effect of internationalization work
3	Single International Cooperation Channel	The cooperation objects are mainly limited to Vietnamese universities; the cooperation content is mostly short-term exchange and Chinese language training; the deep cooperation such as joint training of postgraduates, co-construction of disciplines and joint scientific research is scarce	The scope of internationalization is narrow; the level of international cooperation is low; it is difficult to form in-depth and stable international cooperation relations
4	Shortage of International Talents	Serious shortage of full-time international management talents; few teachers with rich international exchange and teaching experience; lack of high-level foreign teachers with professional academic background	Unable to carry out professional and systematic internationalization management work; the quality of international talent training and academic exchange is limited; it is difficult to meet the demand of high-level internationalization development

Potential Development Opportunities of Internationalization in Educational Administration at Wenshan University.

As a frontier local university adjacent to ASEAN, Wenshan University is endowed with unique potential development opportunities in the process of educational management internationalization under the background of the new era, which are mainly reflected in geographical location, national policy and regional industry demand, as shown in Figure 1.

Figure 1 Potential Development Opportunities of Internationalization in Educational Administration at Wenshan University (Note: The figure is a hierarchical structure diagram, with the core theme of "Potential Development Opportunities of Wenshan University" at the top, and three secondary themes of "Geographical Location Advantage", "National Policy Support" and "Regional Industry Demand" at the bottom, with specific connotations attached to each secondary theme)

1. Geographical Location Advantage: Wenshan Zhuang and Miao Autonomous Prefecture is adjacent to Vietnam, with convenient land transportation and frequent border economic and cultural exchanges. It is an important window for China's opening-up to ASEAN in southwest China. This geographical advantage makes Wenshan University have natural conditions for carrying out cross-border educational exchanges and cooperation, and is conducive to carrying out short-term exchange, on-site teaching and joint research with ASEAN universities.

2. National Policy Support: The national strategies such as the Belt and Road Initiative, the Construction of China-ASEAN Community with a Shared Future and the High-quality Development of Western China have issued a series of policies to support the internationalization of higher education in border areas, including financial support, project approval and talent exchange support. At the same time, the Yunnan provincial government has also formulated relevant policies to promote the educational cooperation between Yunnan universities and ASEAN countries, providing a strong policy guarantee for the internationalization of educational management at Wenshan University.

3. Regional Industry Demand: With the continuous deepening of border economic and trade cooperation, cultural exchange and tourism development between Wenshan Prefecture and ASEAN countries, there is an increasing demand for compound talents who master foreign languages, understand international rules and are familiar with border ethnic culture and regional economy. This regional industry demand provides a clear orientation for Wenshan University to carry out international talent training and discipline construction, and creates a broad market space for the internationalization of educational management.

CONCLUSION AND FUTURE WORK

Conclusion

This paper takes Wenshan University as a case, conducts in-depth research on the internationalization of educational management of frontier local universities in the new era, and draws the following main conclusions: First, Wenshan University has carried out a series of practical explorations in the internationalization of educational management, forming practical cases such as international talent training, cross-border academic exchanges and management system construction, and initially accumulating experience for the internationalization development of frontier local universities. Second, the internationalization of educational management at Wenshan University is still in the initial development stage, and there are many prominent shortcomings such as weak internationalization awareness, imperfect management mechanism, single cooperation

channel and shortage of international talents, which have become the main restrictive factors for its high-quality development of internationalization. Third, Wenshan University has unique potential development opportunities in the internationalization of educational management, including the geographical location advantage adjacent to ASEAN, the strong support of national and local policies, and the huge demand of regional industry for international compound talents, which provide important conditions for breaking through the development bottleneck.

On the basis of the above conclusions, this paper puts forward innovative strategies for the internationalization of educational management at Wenshan University from four aspects: shaping internationalization awareness, improving management mechanism, expanding cooperation channels and cultivating international talents. At the same time, the paper outlines the three-stage future development pathway of "foundation laying - characteristic development - high-quality integration", which provides a clear direction for the internationalization development of educational management at Wenshan University. In general, the internationalization of educational management of frontier local universities cannot copy the development model of key universities and coastal universities, but must combine their own regional characteristics, school-running positioning and development demands to take a characteristic development path of "rooted in the frontier, facing ASEAN and serving the region".

Future Work

The research on the internationalization of educational management at Wenshan University has obtained certain results, but there are still some limitations, and the follow-up research can be further expanded and deepened from the following aspects: First, the research object of this paper is a single case of Wenshan University, and the follow-up research can expand the research scope to multiple frontier local universities in Yunnan Province or southwest China, carry out comparative case research, and summarize the common laws and individual characteristics of the internationalization of educational management of frontier local universities. Second, this paper mainly focuses on the qualitative analysis of the internationalization of educational management, and the follow-up research can construct a quantitative evaluation index system for the internationalization of educational management of frontier local universities, and carry out empirical evaluation and data analysis on the internationalization development level of Wenshan University and similar universities. Third, the innovative strategies and development pathways proposed in this paper are mainly based on the current development situation, and the follow-up research can track and study the implementation effect of the strategies in the actual development process of Wenshan University, and adjust and optimize the strategies and pathways according to the actual implementation situation.

In the future, with the continuous deepening of China's higher education internationalization and the continuous improvement of the opening-up level of frontier areas, the internationalization of educational management of frontier local universities will face new development situations and demands. The follow-up research will continue to focus on the development of internationalization of educational management of frontier local universities, combine the new changes of national policies and regional development, carry out in-depth and systematic research, and provide more abundant theoretical support and practical reference for the high-quality and characteristic development of frontier local higher education.

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TEACHER RETENTION MANAGEMENT IN BORDER AREAS OF WENSHAN COLLEGE

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ABSTRACT

This study focuses on the teacher retention management in the border areas of Wenshan College, aiming to measure the current level of retention management and propose targeted development guidelines. By adopting the methods of questionnaire survey, interview and statistical analysis, the research investigates the status of teacher retention management from the aspects of material security, career development, humanistic care and institutional construction. The results show that Wenshan College has made certain efforts in teacher recruitment and basic security for border area teaching, but there are still problems such as insufficient career development space, uneven material security and inadequate humanistic care. Based on the research results, this paper puts forward development guidelines including optimizing the incentive mechanism, broadening the career development channel, strengthening humanistic care and improving the supporting system, so as to improve the level of teacher retention management in the border areas of Wenshan College and stabilize the teaching team in the border areas.

Keywords: Wenshan College; Border Areas; Teacher Retention; Management Strategy

INTRODUCTION

As the only full-time general undergraduate university in Wenshan Prefecture, Yunnan Province, Wenshan College bears the important mission of cultivating talents for the economic and social development of the border areas of Yunnan and even the China-Vietnam border areas. The stability of the teaching team in the border areas is the core guarantee for the college to carry out teaching and research work, improve the quality of talent training and serve the local development. However, due to the special geographical location, relatively backward economic development and imperfect supporting facilities in the border areas, the problem of teacher loss has become a prominent factor restricting the high-quality development of Wenshan College.

Teacher retention management is an important part of university human resource management, which is directly related to the construction of the teaching team and the long-term development of the university. In recent years, Wenshan College has issued a series of policies and measures for talent introduction and cultivation, such as providing career preparation, housing security and scientific research start-up funds for high-level talents, and has achieved certain results in teacher retention. But for the border area teaching team, affected by geographical and economic factors, the retention management still faces many challenges.

Relevant research shows that the main factors affecting teacher retention in border areas include material treatment, career development space, working environment and humanistic care. The research on rural teacher retention in Wenshan Prefecture points out that the insufficient material security and limited career development are the main reasons for teacher loss in the border areas of Wenshan. The research on university talent training in northern border areas also shows that the geographical location restriction and the lack of development space lead to the difficulty of attracting and retaining talents in border universities.

Against this background, this study takes the teacher retention management in the border areas of Wenshan College as the research object, systematically studies the current level of retention management, analyzes the existing problems and their causes, and puts forward scientific and feasible development guidelines. This research is not only of great significance for Wenshan College to stabilize the border area teaching team and improve the level of human resource management, but also can provide reference for the teacher retention management of other universities in border and ethnic areas.

METHODOLOGY

This study combines quantitative and qualitative research methods, comprehensively uses questionnaire survey, in-depth interview and data analysis to carry out research on the teacher retention management in the border areas of Wenshan College, so as to ensure the objectivity and accuracy of the research results.

Sub-Section 1: Research Objects

The research objects are 120 teachers who are engaged in teaching work in the border area affiliated teaching points of Wenshan College and the college's majors serving the border area development, covering different disciplines, professional titles and teaching ages. Among them, there are 28 senior professional title teachers, 45 intermediate professional title teachers and 47 junior professional title teachers; the teachers with less than 5 years of teaching age account for 35%, 5-10 years account for 40%, and more than 10 years account for 25%.

Sub-Section 2: Research Methods

1. Questionnaire Survey: According to the main factors affecting teacher retention, a questionnaire on the current situation of teacher retention management in the border areas of Wenshan College is designed, which includes four dimensions: material security, career development, humanistic care and institutional construction, with a total of 25 closed questions and 3 open questions. A total of 120 questionnaires were distributed in this survey, 115 valid questionnaires were recovered, and the effective recovery rate was 95.83%.

2. In-Depth Interview: 15 teachers with different professional titles and teaching ages and 5 managers of the college's human resources department and academic affairs department were selected for in-depth interviews to understand the specific problems and actual needs in the process of teacher retention management in the border areas.

3. Data Analysis: The statistical software is used to carry out descriptive statistical analysis on the questionnaire data, to sort out and analyze the interview records, and to combine the relevant data of the college's teacher team construction, to comprehensively evaluate the current level of teacher retention management in the border areas of Wenshan College.

RESULTS

Through the comprehensive analysis of questionnaire survey, interview and relevant data, the research combs the current situation of teacher retention management in the border areas of Wenshan College from four dimensions, and the specific results are shown in the following tables and analysis content.

Table 1
Evaluation of the Current Level of Teacher Retention Management in Border Areas of Wenshan College (Score: 1-5 points, higher score means better effect)

No.	Evaluation Dimension	Average Score	Proportion of Excellent (≥4 points)	Proportion of General (2-3 points)	Proportion of Poor (≤1 point)
1	Material Security	3.25	28.70%	56.52%	14.78%
2	Career Development	2.86	17.39%	52.17%	30.44%
3	Humanistic Care	3.12	24.35%	58.26%	17.39%
4	Institutional Construction	3.38	31.30%	54.78%	13.91%
5	Comprehensive Evaluation	3.15	25.13%	55.65%	19.22%

From Table 1, it can be seen that the comprehensive average score of teacher retention management in the border areas of Wenshan College is 3.15 points, which is at a general level. Among each dimension, the score of institutional construction is the highest (3.38 points), followed by material security (3.25 points) and humanistic care (3.12 points), and career development has the lowest score (2.86 points), which is the weakest link of current retention management.

In terms of material security, 28.70% of the teachers gave excellent evaluations, mainly because the college has introduced talent policies with competitive treatment for high-level talents; but 56.52% of the teachers thought it was general, and 14.78% thought it was poor, mainly reflecting that the subsidy policy for border area teaching is not perfect and the welfare gap between different professional title teachers is large.

In the aspect of career development, only 17.39% of the teachers gave excellent evaluations, 30.44% thought it was poor, and the main problems included the narrow promotion channel for professional titles, the insufficient supply of scientific research resources and training opportunities, and the lack of personalized career planning guidance for teachers.

For humanistic care, 24.35% of the teachers evaluated it as excellent, and the main problems were the imperfect psychological counseling system for teachers in border areas, the insufficient attention to the life difficulties of teachers, and the weak sense of belonging of teachers.

In terms of institutional construction, the college has formulated a series of systems and policies for teacher recruitment, training and assessment, so the excellent rate is the highest (31.30%), but 13.91% of the teachers thought it was poor, mainly because the implementation and supervision mechanism of the relevant systems are not perfect, and the policy landing effect is not ideal.

Table 2
Main Factors Affecting Teacher Retention in Border Areas of Wenshan College (Multiple Selection, n=115)

No.	Influencing Factor	Number of Selected Teachers	Proportion	Ranking
1	Narrow career development channel	92	80.00%	1
2	Insufficient material treatment and border subsidy	86	74.78%	2
3	Imperfect working and living supporting facilities	78	67.83%	3
4	Lack of scientific research resources and cooperation opportunities	75	65.22%	4
5	Inadequate humanistic care and psychological support	62	53.91%	5
6	Unreasonable teaching assessment mechanism	58	50.43%	6
7	Weak campus cultural construction and low sense of belonging	45	39.13%	7

Table 2 shows the main factors affecting teacher retention in the border areas of Wenshan College sorted by the selection proportion. Among them, the narrow career development channel is the most important factor, with a selection proportion of 80.00%, which is consistent with the low score of the career development dimension in Table 1. The insufficient material treatment and border subsidy ranks the second (74.78%), which is the main material factor affecting teacher retention. In addition, the imperfect working and living supporting facilities, the lack of scientific research resources and the inadequate humanistic care are also important factors affecting teacher retention in the border areas.

In addition, the interview results show that the young teachers in the border areas of Wenshan College have a strong demand for further study, training and professional title promotion, but the

college's current training resources are mainly tilted to the main campus, and the border area teachers have fewer opportunities; the middle-aged and elderly teachers pay more attention to material security and living supporting facilities, and hope to improve the border teaching subsidy and optimize the medical and educational supporting conditions. At the same time, the college's current teacher assessment mechanism is relatively single, which is not fully combined with the actual teaching situation in the border areas, and brings certain work pressure to teachers.

CONCLUSION AND FUTURE WORK

Conclusion

This study systematically studies the level of teacher retention management in the border areas of Wenshan College through multiple research methods, and draws the following main conclusions:

1. The overall level of teacher retention management in the border areas of Wenshan College is general, with a comprehensive score of 3.15 points. The college has made certain achievements in institutional construction, but there are obvious deficiencies in career development, material security and humanistic care.

2. The narrow career development channel is the core factor affecting teacher retention in the border areas, followed by insufficient material treatment and border subsidy, imperfect working and living supporting facilities and lack of scientific research resources. Different age and professional title teachers have different demands for retention management, which reflects the lack of personalized management of the college for border area teachers.

3. The main problems of teacher retention management in the border areas of Wenshan College include the imperfect subsidy policy for border teaching, the narrow professional title promotion channel, the uneven distribution of scientific research and training resources, the inadequate humanistic care and the imperfect system implementation mechanism. These problems are closely related to the special geographical location of the border areas, the relatively backward economic development and the insufficient attention of the college to the border area teaching team.

Future Work: Development Guidelines for Teacher Retention Management in Border Areas of Wenshan College

Aiming at the current situation and existing problems of teacher retention management in the border areas of Wenshan College, combined with the actual needs of teachers and the development positioning of the college, the following targeted development guidelines are put forward to improve the level of teacher retention management and stabilize the border area teaching team:

1. Optimize the material security system and increase the support for border teaching:

First, formulate a special subsidy policy for border area teachers according to the actual teaching difficulty in the border areas, and implement the post subsidy and hardiness subsidy for border teaching to narrow the welfare gap between border area teachers and main campus teachers. Second, improve the housing security system, provide transitional housing or housing rental subsidies for border area teachers, and solve the housing problem of teachers. Third, optimize the medical and educational supporting services, cooperate with local hospitals and schools to solve the medical treatment of teachers and the enrollment of their children, and reduce the life worries of teachers.

2. Broaden the career development channel and improve the talent training system: First, formulate a professional title promotion policy tilted to border area teachers, appropriately reduce the

scientific research and assessment requirements for border area teachers, and take the teaching effect and local service contribution as important evaluation indicators. Second, increase the investment in teacher training resources, set up a special training fund for border area teachers, regularly organize teachers to participate in domestic and foreign further study, academic exchanges and professional skills training, and improve the professional quality of teachers. Third, carry out personalized career planning guidance for border area teachers, combine the teacher's professional characteristics and development needs, formulate personalized career development plans, and provide corresponding scientific research projects and cooperation opportunities.

3. Strengthen humanistic care and enhance teachers' sense of belonging and identity: First, establish a psychological counseling system for border area teachers, set up a special psychological counseling room, regularly carry out psychological assessment and counseling for teachers, and relieve the work and psychological pressure of teachers. Second, strengthen the communication and interaction between the college and border area teachers, regularly carry out condolence activities, understand the work and life difficulties of teachers in a timely manner, and solve practical problems for teachers. Third, strengthen the construction of campus culture in border teaching points, carry out various cultural and sports activities, enhance the cohesion of the teaching team, and cultivate teachers' sense of identity and belonging to the college.

4. Improve the institutional construction and strengthen the implementation and supervision mechanism: First, improve the relevant systems of teacher retention management in border areas, formulate a special management measure for teacher retention in border areas of Wenshan College, and clarify the management objectives, responsibilities and measures. Second, establish a special supervision and evaluation team for the implementation of border area teacher policies, regularly supervise and evaluate the implementation effect of various retention management policies, and timely find and solve the problems in the policy implementation process. Third, establish a teacher satisfaction evaluation mechanism, take the teacher's evaluation of retention management work as an important indicator of the performance assessment of the college's functional departments, and promote the continuous improvement of retention management work.

5. Combine local development and excavate the professional value of border area teachers: Based on the economic and social development needs of Wenshan border areas, guide border area teachers to carry out teaching and research work combined with local characteristics, such as the research on ethnic culture, border economic development and agricultural technology promotion. At the same time, build a platform for teachers to serve the local area, encourage teachers to participate in local social service work, and enhance the professional sense of achievement and social value of border area teachers through serving the local development.

In the future, Wenshan College should take the teacher retention management in the border areas as an important part of the college's development strategy, combine the advantages of the college's 'hall and state co-construction' and the construction of applied undergraduate colleges, continuously optimize the retention management measures according to the actual development of the border areas and the needs of teachers, and build a stable, high-quality and professional teaching team for the border areas, so as to provide strong talent support for the high-quality development of the college and the economic and social development of the Wenshan border areas.

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AN EFFECTIVE STUDY ON THE DEVELOPMENT PATH OF MINORITY FOOTBALL IN WESTERN YUNNAN

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ABSTRACT

The western Yunnan region is one of the ethnic minority areas in China, where Lijiang, known as the "hometown of football," has developed a unique football development path with ethnic characteristics over its long history. This study focuses on the development path of ethnic minority football in western Yunnan, utilizing methods such as literature review, field investigation, interviews, questionnaire surveys, and case analysis. It systematically examines the main types and operational mechanisms of ethnic minority football development in the region, constructs an evaluation system for the effectiveness of development paths, and conducts in-depth analysis of typical cases such as Lijiang Football Town, ethnic minority football competitions in Yunnan Province, and pilot schools for campus football. The study finds that the development path of ethnic minority football in western Yunnan has initially taken shape but is uneven across regions. Lijiang and other places have formed a distinctive model of "government guidance + social participation + campus foundation + event traction." Campus football plays a fundamental role in the popularization and talent cultivation of young people, and ethnic minority events have become important vehicles for stimulating public participation and promoting ethnic unity. The integration of the football industry has shown initial results, but brand building and profit models are still immature. The shortage of grassroots coaches and low professionalization levels remain key bottlenecks restricting sustainable development. Based on these findings, this study proposes optimization strategies from six dimensions: policy coordination, integration of sports and education, event branding, cultural integration, talent cultivation, and industry innovation. The aim is to provide theoretical references and practical path insights for the development of football in western Yunnan and other ethnic minority areas in China.

Keywords: Western Yunnan region; ethnic minorities; football; development path;

INTRODUCTION

1. Research Background

Football, renowned as the "world's number one sport," is the most influential individual sport in the global sports community. Ancient football originated in China, while modern football originated in the United Kingdom. A standard modern football match consists of two teams, each fielding 10 players

and one goalkeeper, for a total of 11 players, who compete and attack on a rectangular grass field. The objective of a football match is to score as many goals as possible by shooting the ball into the opposing team's goal. Each goal scored earns one point. At the end of the match, the team with the higher score wins. If the scores are tied within the allotted time, the match rules will determine the winner, which may involve drawing lots, extra time, or a shootout (penalty shootout) to determine the superior team. In a football match, except for the goalkeeper who may use their hands to touch the ball within their own penalty area, every player on the field may only control the ball with parts of their body other than their hands (except for throwing-in).

With the support of government policies, regions such as Lijiang, known as the hometown of football, have developed their own unique paths for the development of football among ethnic minorities in western Yunnan, fostering a distinctive atmosphere for football development.

1.1 Subjective conditions

Football is an indispensable part of sports, and the development path of football is an important component of football sports. The 'Overall Plan for the Reform and Development of Chinese Football' issued in 2015 proposed the main goal of incorporating the development of football into the economic and social development plan and implementing a 'three-step' strategy. It aims to improve the environment and atmosphere for football development, rationalize the football management system, formulate medium- and long-term development plans for football, innovate a football management model with Chinese characteristics, and form a pattern of coordinated development between the football cause and the football industry. The medium-term goal is to significantly increase the youth football population, achieve first-class organizational and competitive levels in professional leagues in Asia, and rank the national men's football team among the top in Asia; to achieve comprehensive development of Chinese football, make football a widely participated sport, and form a healthy football culture in the whole society; to bring the organizational and competitive levels of professional leagues into the world's advanced ranks; to actively bid for the FIFA Men's World Cup; and to significantly enhance the international competitiveness of the national men's football team and rank it among the world's top teams. This shows that the country attaches great importance to the development of football sports.

1.2 Objective conditions

On the afternoon of March 15, 2019, the launch ceremony for the inaugural 2018-2019 'China Football Development Foundation Cup' Yunnan Minority Football Tournament was held at Yunnan Minzu University. Guided by the Yunnan Provincial Sports Bureau and hosted by the Yunnan Football Association, this tournament is supported by the China Football Development Foundation as a supporting unit, and also receives support from media outlets such as Titan Sports Media Group Co., Ltd. The participating teams are mainly composed of ethnic minority athletes from western Yunnan, embodying the tournament's concept of 'promoting unity, progress, and common prosperity among all ethnic groups'. It plays a positive role in promoting interaction and exchanges among ethnic groups through sports. This tournament has received strong support from the China Football Development Foundation, with the aim of vigorously developing football in Yunnan, especially by engaging ethnic minority football enthusiasts, allowing them to experience the fun of football, and popularizing and spreading football culture. This large-scale ethnic minority football tournament is the first of its kind to be held in Yunnan Province. It represents a positive attempt by the Yunnan Provincial Sports Bureau and Yunnan Football Association to implement the National Fitness Program, enhance people's physical fitness, and enrich the cultural life of ethnic minorities. The holding of this tournament is of positive significance for creating a football

atmosphere in Yunnan and expanding the participation of people in football. It will subsequently be rolled out across the province, forming a good situation of provincial linkage and widespread participation, which will promote the development of ethnic sports, especially football, cultivate excellent football talents, and explore new paths for football development.

2. Literature Review

2.1 Current research status in China

(Li 2008) mentioned in the study "The Current Situation and Countermeasures of Football Development in Yunnan Border Areas" that Yunnan Province is one of the provinces with the richest natural resources, and it is also an economically underdeveloped and relatively backward province. With the rapid development of football nationwide and the increasing demands of people of all ethnic groups in the province for football, it is of great practical significance to strengthen the macro-control of football work and promote the orderly and healthy development of football in Yunnan Province, based on the overall development goals of China's football and in combination with the actual situation of Yunnan Province, by employing reasonable methods and means.

(Cen 2020) mentioned in the study "Discussing the Development Strategy of Amateur Football for Ethnic Minorities from the Perspective of Competition Mechanisms" that exploring the development mechanism of ethnic minority football, with football as the entry point and a bond for promoting ethnic construction, is not only a necessity for the current development of sports, but also a necessity of the times for building a sports-oriented China and revitalizing ethnic groups. From the perspective of ethnic development, this article takes the development of amateur football as the entry point, fully recognizes the bonding value of sports, conducts research on the development strategy of the football industry in ethnic areas, and proposes competition mechanism development strategies to promote the development of ethnic minority amateur football.

(Feng 2019) mentioned in the study "Research on the Development Strategy of Sports Characteristic Industries in Northwest Yunnan Minority Areas - Taking Lijiang Football Town as an Example" that Lijiang possesses a strong football culture, with locals being passionate about football and earning the reputation of being the 'hometown of football'. Leveraging the strong national support and development of the sports industry, Lijiang can seize this opportunity to integrate into the blueprint for the construction of characteristic sports towns, thereby driving the development of football in ethnic minority areas.

(He & He & Lu, 2017) In the context of the national football reform, as outlined in "The Current Situation and Countermeasures of Campus Football Teacher Development in Ethnic Minority Areas of Xinjiang - Based on the Survey and Research in Yunnan Province", Yunnan Province and local cities and prefectures have established a campus football work leading group under the guidance of documents such as the "Overall Plan for the Reform and Development of Chinese Football" and the "Implementation Opinions on Accelerating the Development of Youth Campus Football". They have carried out effective work, such as establishing campus football instructor positions in Lijiang City and opening a public welfare "Football School in the Old Town of Lijiang", pioneering a beneficial attempt at "combining sports and education", promoting the development of campus football, enhancing the attractiveness of football, and achieving the "three-in-one" effect of football education and teaching, professional talent cultivation, and football promotion.

(Wang & Lin 2019) In the study titled "Research on the Current Situation and Countermeasures of Campus Football Development in Guangxi Minority Areas - Taking Application-oriented Universities in Baise City as an Example", it is mentioned that in order to better and faster promote the development of China's football sports level, the General Administration of Sport of China has begun to promote campus football activities in universities nationwide, increasing the popularization and support of football-related knowledge. At the same time, in order to widely popularize university football, football has been incorporated into the development plan of school physical education. However, current youth campus football activities are mainly targeted at primary and secondary school students. Many primary and secondary schools have relatively well-developed campus football activities, while campus football in universities has not been well implemented, which can easily lead to the formation of two systems in the cultivation of reserve football players in China and cause a talent gap. The development of campus football in universities is equally important, especially for college students who have ample spare time, as they have better enthusiasm and conditions for the implementation of football sports

In summary, the development of football in ethnic minority areas is relatively limited, primarily due to significant constraints imposed by geographical environment, politics, and economy. To make the development path of ethnic minority football in western Yunnan more distinctive, against the backdrop of the country's rapid economic development and significant investment and development in football, as well as the introduction of a series of policies and programs, the government should implement various policies, increase relevant economic support, vigorously carry out football leagues with ethnic minority characteristics, strengthen innovation in traditional development paths, and explore a targeted and distinctive path for the development of ethnic minority football in western Yunnan.

2.2 Current research status abroad

(Liu 2014) pointed out in the study "Research Progress on Identification Methods of Youth Football Talents Abroad" that based on scientific talent selection models, emphasis should be placed on scientific and objective measurement methods and ecological validity models, taking into account the physiological plasticity and sustainable development characteristics of adolescents during their developmental stages.

(Chen, Huang, & Li, 2016) et al. pointed out in their study "Research on Hotspots of Football Endurance Abroad and Analysis of Its Changing Trends" that the hotspots of research related to football endurance mainly revolve around athlete training and competitive performance, encompassing high-level football, youth, the reliability of training methods and testing methods, training loads, and athletes' training responses.

(He, 2008) pointed out in the study "Training Models of Foreign Football Reserve Talents and Their Enlightenment" that the training models for young football players abroad can be broadly divided into two types: the training center model and the school model. Establish and improve a diversified football reserve talent training model with pilot schools for football reserve talents as the mainstay, and with multiple training channels coexisting.

In summary, although football has achieved widespread popularity and significant development worldwide, from the perspective of its sustainable development, there is still a considerable gap between the development of domestic football and that of foreign football. Meanwhile, there is still ample room for the development of football.

3. Research significance

3.1 Theoretical significance

This study aims to systematically sort out the existing paths of minority football development in western Yunnan, and combine regional cultural characteristics and ethnic sports traditions to construct a theoretically framework for football development with regional adaptability. Through case studies of typical regions such as Lijiang, this study explores the formation mechanism and evolutionary logic of the development path of minority football, provides empirical support for the theory of sports development in ethnic areas, and enriches the theoretical system of multiple paths for the development of football in China.

3.2 Practical significance

As a region inhabited by ethnic minorities in China, western Yunnan boasts a unique accumulation of football culture and a solid mass foundation. This study aims to evaluate the effectiveness of existing development paths, identify constraints and successful experiences, and provide actionable policy recommendations for local governments, education departments, and sports organizations. These recommendations encompass optimizing the allocation of campus football resources, improving the ethnic minority-featured competition system, promoting the integration of the "football + cultural tourism" industry, and fostering the cultivation of football talents among ethnic minority youths. These measures will contribute to the sustainable development of football in western Yunnan, serving the strategies of ethnic unity and progress, as well as rural revitalization.

4. Research objectives

(1) Systematically sort out the current situation of the development path of minority football in western Yunnan, including policy support, event organization, campus football, talent cultivation, social participation, and other aspects.

(2) Summarize the main path types of football development among ethnic minorities in western Yunnan (such as campus-led, event-driven, industry integration, etc.), and extract their core characteristics and operational mechanisms.

(3) Establish an evaluation index system for the effectiveness of development paths, and comprehensively evaluate the implementation effects of different paths by combining quantitative and qualitative methods.

(4) Identify the main problems and bottlenecks existing in the current development path, and propose targeted optimization strategies and safeguard mechanisms.

(5) Summarize the replicable and scalable experience models in western Yunnan, providing references for the development of football in other ethnic minority areas in China.

Research Hypothesis

Based on theoretical analysis and literature review, this paper proposes the following research hypotheses:

H1: The development path of ethnic minority football in western Yunnan presents diversified characteristics, with significant differences in resource investment, organizational forms, and cultural adaptability among different paths.

H2: The level of policy support, the degree of ethnic cultural integration, and the completeness of the competition system are positively correlated with the effectiveness of the football development path.

H3: The integration of traditional ethnic sports culture and modern football can significantly enhance the willingness to participate and sense of identity among young people in ethnic minority areas.

H4: The effectiveness of the football development path in western Yunnan is influenced by a combination of factors such as geographical environment, economic level, teacher resources, and event resources, exhibiting regional differences.

RESULTS

1. Conclusion

Through systematic sorting and empirical analysis of the development path of ethnic minority football in western Yunnan, this study draws the following main conclusions:

(1) The development path has taken shape initially, but there is regional imbalance. The western Yunnan region, represented by Lijiang, has formed a distinctive path featuring "government guidance + social participation + campus foundation + competition traction", while some remote counties and cities still face issues such as resource scarcity and loose organization.

(2) Campus football plays a fundamental role. It has achieved remarkable results in the popularization of youth football, interest cultivation, and talent discovery in ethnic minority areas in western Yunnan. In particular, the "combination of sports and education" model is worth promoting.

(3) Ethnic minority sports events have become important platforms. The sports event system represented by the "Yunnan Ethnic Minority Football Tournament" has effectively stimulated the enthusiasm of the people in ethnic minority areas to participate, promoting ethnic unity and cultural dissemination.

(4) The industrial development has shown initial results, but the depth of integration is insufficient. Projects such as the "Football Town" in Lijiang have made beneficial explorations in the "football + cultural tourism" field, but there is still room for improvement in terms of industrial linkage, brand building, and profit model.

(5) The talent bottleneck remains prominent, with a shortage of grassroots coaches, low professionalization, and an inadequate training system, which restricts the sustainability of the football development path.

2. Countermeasures and suggestions

(1) Strengthen policy coordination and resource allocation, incorporate the development of ethnic minority football into local sports development plans for the 14th Five-Year Plan period, set up special funds, optimize the layout of football venues, and improve the utilization rate of facilities.

(2) Deepen the integration of sports and education, build a talent cultivation echelon, promote the linkage mechanism between primary and secondary schools, universities, and professional clubs, and

establish a diversified growth path of "football talent students + special recruitment for sports + career path".

(3) Build ethnic minority sports event brands, continue to hold the "Yunnan Provincial Ethnic Minority Football Tournament", promote the event to be held at the county and township levels, and encourage differentiated development of "one county, one product" and "one township, one event".

(4) Promote the deep integration of football culture and ethnic culture, combine ethnic festivals, traditional sports events, and football activities, develop ethnic football cultural and creative products, and enhance cultural identity and dissemination.

(4) Strengthen the development of grassroots coaching staff, implement the "Ethnic Minority Football Coaching Training Program", conduct regular training in collaboration with universities and football associations, and establish an incentive mechanism for coaches.

(5) Explore new business forms of "football+" industrial integration, support the construction of a "football + tourism + culture + education" integration demonstration zone in western Yunnan, and cultivate new business forms such as football-themed research and study, ethnic football cultural and creative industries, and football health and wellness.

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ANIMAL IMAGERY AS SEMIOTIC TOOL FOR ENVIRONMENTAL COMMUNICATION IN FASHION PHOTOGRAPHY

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ABSTRACT

This paper investigates how animal imagery functions as a semiotic tool for environmental communication in fashion photography. Against the backdrop of biodiversity loss, visual culture plays a crucial role in raising public awareness. Integrating semiotics, environmental communication, and fashion studies, this research develops a three-tiered analytical framework encompassing visual form, semiotic metaphor, and contextual intertextuality to conduct an in-depth analysis of three representative cases: Vogue Italia's "Animal Issue" (2021), Zhong Ling's Heat Wave (2022), and Arno Elias & Cara Delevingne's I'M NOT A TROPHY (2016). The findings reveal that through strategies such as "anthropomorphic connection," "fusional alienation," and "symbolic bearing," animal imagery constructs multi-layered ecological metaphors, evoking a spectrum of affective responses from empathy to moral reflection. However, within commercial contexts, its ecological signification risks "semiotic drift" into mere consumerist symbols. Therefore, effective environmental communication depends on striking a balance along the spectrum from "aesthetic infiltration" to "critical positioning," and on constructing a robust ecological "strong sign" through narrative anchoring, formal innovation, and contextual consistency. This study not only provides a systematic analytical tool for understanding the ecological rhetoric of fashion imagery but also offers evidence-based strategic insights for sustainable fashion communication. This paper is a substantially extended and revised version of our prior conference paper presented at [ICSSMT, 2025].

Keywords: Fashion Photography; Animal Imagery; Environmental Communication; Semiotics; Ecological Awareness

INTRODUCTION AND BACKGROUND

The intensifying global ecological crisis, marked by a reported nearly 70% average decline in wildlife populations over the past fifty years (Almond et al., 2022), underscores the urgent need for effective environmental communication. In this context, visual culture and art have become pivotal mediums. They translate ecological issues into sensory and affective experiences, using the symbolic power of images to foster emotional resonance and ethical reflection on the human-nature relationship.

Fashion photography represents a particularly potent interdisciplinary medium for this purpose. It merges artistry, commercial appeal, and mass media reach, creating a bridge between aesthetics, consumer culture, and public discourse. Its artistic quality ensures visual impact and engagement, as seen on platforms like Instagram (Aina, 2022), while its commercial nature guarantees wide dissemination.

Furthermore, its cross-media capacity allows ecological messages to be amplified through tailored strategies on social and new media platforms (Lee et al., 2024).

Within fashion photography, animal imagery often transcends mere decoration to function symbolically and metaphorically. As Mangano and Marrone (2018) suggest, animal representations are culturally constructed and re-symbolized. These constructions can visualize the tension between endangered species and consumer culture, provoking critical reflection on environmental issues (Mäekivi & Maran, 2016).

Despite its potential, little research has systematically examined how fashion photography uses animal imagery to mediate ecological meaning. This study aims to fill this gap by analyzing animal imagery as a semiotic tool for environmental communication in fashion photography, thereby offering new interdisciplinary perspectives on visual culture's response to ecological crises.

Literature Review

2.1 Semiotics, Visual Communication, and Animal Imagery

Semiotics and visual communication theories provide a foundational framework for analyzing how animal imagery generates meaning in fashion photography. Heath (1977) emphasizes that images interact with cultural codes to shape viewers' perception of reality. Barthes' (1993) concepts of *studium* and *punctum* further help explain the cognitive and emotional responses evoked by photographic composition. These theories are particularly relevant to animal imagery, which often carries layered cultural and emotional symbolism beyond its literal representation (Mäekivi & Maran, 2016; Mangano & Marrone, 2018). Together, these perspectives establish a semiotic basis for interpreting animal symbols in visual culture.

2.2 Environmental Communication, Fashion, and Visual Persuasion Mechanisms

While often viewed as an accomplice to consumerism, fashion photography possesses the semiotic complexity to also function as a medium for environmental critique and consciousness-raising (Entwistle, 2023). At the intersection of commerce and art, the deployment of animal imagery reveals a significant tension: it can be reduced to a mere decorative trope stimulating consumption, or it can be strategically encoded to become a "meaningful image" conveying ecological concerns (Schroeder, 2002).

The success of this strategic encoding largely depends on the employment of visual persuasion mechanisms. According to the Elaboration Likelihood Model, fashion imagery of high aesthetic quality typically operates on audiences via the "peripheral route"—persuading viewers through emotional impact, aesthetic appeal, and heuristic cues rather than complex environmental arguments (Petty & Cacioppo, 1986). Anthropomorphic animal gazes, juxtapositions of harmonious or destructive natural scenes, can swiftly evoke empathy, pity, or awe in viewers, thereby establishing an affective connection to environmental issues. This is one of the core visual strategies of sustainable fashion communication: translating abstract ecological ethics (e.g., biodiversity conservation, anti-fur) into perceptible, resonant personal emotional experiences.

However, this reliance on aesthetics and emotion entails inherent risks. When animal imagery is integrated into brand narratives, it may undergo "semiotic drift"—where the image's ecological

signification is stripped away, leaving behind only its aesthetic and identity-signifying value, potentially even used for “greenwashing” (Mehta, 2024). Consequently, a key research question emerges: how can animal imagery maintain the clarity and criticality of its environmental referent within the semiotic structure (signifier, signified, referent) of specific fashion photographs, without slipping into empty romanticization or commodification.

2.3 Research Gap and Positioning of This Study

While existing research touches upon the fields of fashion semiotics, environmental communication, and visual persuasion, there is a lack of an integrative analytical framework to systematically examine the specific operational mechanisms, effects, and inherent contradictions of animal imagery as a tool for environmental communication in fashion photography. More specifically, most studies remain at the level of textual analysis or critical theory, lacking empirical evidence from the audience end to verify the actual communicative effects of such imagery (e.g., whether it genuinely enhances environmental awareness or merely reinforces the brand's aesthetic image).

Therefore, this study aims to fill this gap. Employing a mixed-methods approach combining semiotic analysis and a controlled experiment, we will conduct an in-depth analysis of the semiotic structure (how the signifier points to the ecological signified) of animal imagery in selected fashion photographs and empirically test the actual impact of such imagery on audiences' environmental attitudes and brand perceptions. This endeavor will not only deepen the understanding of fashion media's efficacy in environmental communication but also provide evidence-based guidance on visual strategies for creators and brands.

OBJECTIVES

3.1 Research Aim

This study aims to investigate how animal imagery in fashion photography functions as a semiotic tool for environmental communication, and how it can enhance public awareness and engagement with ecological issues.

3.2 Research Question

The study is guided by the following research questions:

- 1) What semiotic meanings are conveyed through animal imagery in fashion photography?
- 2) How does such imagery shape audience perceptions and attitudes toward environmental protection?
- 3) What distinctive role does fashion photography play in environmental communication compared to other visual media?

Answering these questions will not only advance theoretical understanding of visual environmental communication but also provide practical guidance for developing effective sustainable fashion communication strategies.

Research Hypothesis

Based on the literature review, the following hypotheses are proposed:

H1: Animal imagery in fashion photography reinforces the symbolic significance of ecological conservation.

H2: Emotional resonance evoked by such imagery positively enhances environmental awareness among audiences.

H3: The aesthetic and commercial nature of fashion photography can enhance, rather than diminish, its effectiveness in environmental communication.

Theoretical Framework

This study is grounded in an integrated theoretical framework combining semiotics, environmental communication, and fashion studies to analyze how animal imagery in fashion photography functions as environmental communication.

5.1 Semiotic Theory

Semiotics provides the foundational tools for decoding how animal imagery generates meaning. Drawing on Saussure's (1959) concept of the signifier and signified, and Barthes' (1977) notion of myth and cultural connotation, we analyze animal representations as signs that carry culturally specific meanings. Peirce's (1934) classification of symbols, indices, and icons further helps interpret how animal imagery functions in fashion contexts— not only as aesthetic icons but also as symbolic carriers of ecological values.

5.2 Environmental Communication Theory

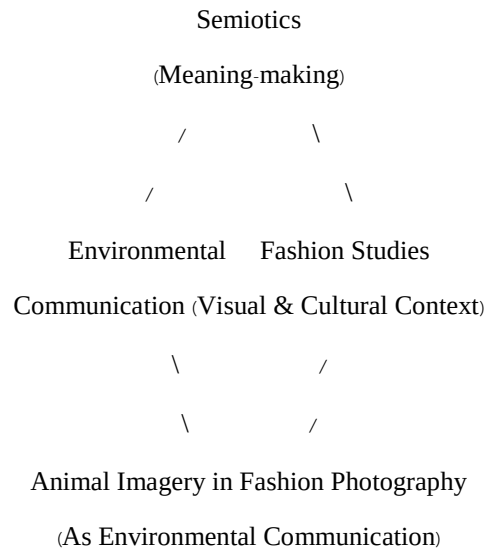
Environmental communication theory (Pezzullo & Cox, 2025) shifts the focus from mere information transmission to the role of symbolism, emotion, and narrative in shaping public engagement with ecological issues. This perspective allows us to examine how fashion photography—through visual storytelling and affective appeal— can foster environmental awareness and motivate public reflection on human-nature relationships.

5.3 Fashion Studies and Visual Culture

Fashion studies contextualize fashion photography as a socio-cultural practice. As Entwistle (2023) and Barnard (2020) note, fashion imagery conveys identity, desire, and social norms. Within this framework, animal imagery is not merely decorative but operates as a visual rhetoric that intersects with consumer culture and sustainability discourses.

5.4 Integrated Analytical Framework

As illustrated in the diagram below, the three theoretical perspectives form a cohesive lens through which animal imagery can be systematically analyzed: semiotics decodes its layered meanings, environmental communication theory evaluates its ecological messaging, and fashion studies situates it within visual and commercial culture.



This integrated approach enables a nuanced understanding of how animal symbols in fashion media can serve as powerful vehicles for sustainability communication.

METHODOLOGY

This study adopts a qualitative, multi-layered visual and semiotic analysis to systematically deconstruct the signifying mechanisms of animal imagery as a tool for environmental communication in fashion photography. The methodology integrates semiotic theory, visual grammar, and contextual analysis, forming a progressive three-tiered analytical framework to ensure depth and systematic rigor.

6.1 Research Methods: A Visual and Semiotic Analytical Framework

6.1.1 Case Selection

To explore the multiple functions of animal imagery in depth, this study selects three representative fashion photography series as analytical objects based on the principles of “timeliness,” “influence,” and “diversity of approaches”: (1) Vogue Italia’s “Animal Issue” (2021), which represents mainstream narrative strategies of employing animal imagery in high-fashion media; (2) artist Zhong Ling’s Heat Wave series (2022), which uses digital compositing to visually merge human and animal forms; and (3) Arno Elias and Cara Delevingne’s I’M NOT A TROPHY (2016), a project that clearly demonstrates the social activist 倾向 of animal imagery in a fashion context. These three cases exhibit different visual strategies—anthropomorphism, metaphorical synthesis, and symbolic projection, respectively—forming a diverse analytical sample.

6.1.2 A Three-Tiered Visual and Semiotic Analytical Framework

To move beyond mere descriptive analysis of images, this study constructs and applies a three-tiered analytical framework progressing from form to context for the systematic decoding of the selected cases.

- Tier 1: Visual Composition and Expressive Analysis. This tier focuses on the “signifier” level of the image—its material form and sensory properties. The analysis, based on fundamental principles of visual design, examines:

- Composition and Visual Focus: The spatial placement and proportion of animals within the frame and their compositional relationship with human models to identify how the image directs the viewer’s attention.

- Lighting and Color: The nature of lighting (e.g., natural vs. dramatic artificial light), the symbolic use of color palette (e.g., warm tones suggesting harmony vs. cold or contrasting tones suggesting conflict or crisis), and how color shapes the overall mood.

- Texture and Tactile Contrast: The juxtaposition, contrast, or fusion between the textures of animal fur, natural environments, and fashion fabrics, exploring the sensory associations they evoke.

- The purpose of this tier is to reveal the work’s most immediate aesthetic appeal and emotional tone, which forms the basis of its visual persuasion.

- Tier 2: Semiotic and Narrative Structure Analysis. This is the core tier of analysis, aiming to uncover the deeper “signified” and the process of meaning construction. We integrate Roland Barthes’ semiotic theory (Barthes, 1977) and Kress and van Leeuwen’s visual grammar (Kress & van Leeuwen, 2006):

- Metaphor and Symbolism: Analyzing how the animal image transcends its biological referent to carry specific cultural and social metaphors (e.g., as a symbol of “victimhood,” “wildness,” or a metaphor for “ecological interconnectedness”).

- Interactive Meaning: Interpreting the emotional and power relations the image attempts to establish (e.g., evoking empathy, creating alienation, or prompting moral scrutiny) by analyzing the “gaze” relationship between the animal (or its representation) and the viewer, the “social distance” portrayed, and the perspective.

- Narrative vs. Conceptual: Determining whether the image presents a narrative “action moment” or expresses a static “concept.” Analyzing the role the animal plays as an “actor,” “goal,” or “setting” to understand its narrative logic.

- Tier 3: Intertextuality and Discursive Field Analysis. This tier situates the image within its sociocultural context of production, dissemination, and reception, examining the generation, negotiation, and potential controversy of its meaning. The analysis includes:

- Internal Intertextuality: The positioning of the work within the photographer’s stylistic lineage, the brand’s seasonal theme, or the magazine’s special issue.

- External Intertextuality: The dialogue and references between the work and broader environmental discourses, social movements, artistic trends, or contemporary media events.

- Context of Dissemination and Reception: Examining the nature of the publication platform (high-end art magazine, brand advertisement, social media), accompanying texts (titles, captions, hashtags), its intended audience, and potential diverse interpretations to assess its communicative intent and actual discursive effect.



Figure 1 :Vogue Italia January 2021 The Animal Issue

Source: Heji Shin, 2021



Figure 2 : Heat Wave

Source: Zhong Lin, 2022



Figure 3 : I'M NOT A TROPHY

Source: Arno Elias and Cara Delevingne, 2016



Figure 4 : NEVER ENOUGH

Source: Zhong Lin, 2025



Figure 5 : Saving the Forest with Fire

Source: Abbott, Mathew, 2022

6.2 Data Analysis and Synthesis

This study will sequentially apply the above three-tiered framework to conduct an in-depth interpretation of the three cases. First, a detailed tier-by-tier analysis will be performed within each case. Subsequently, a cross-case comparative analysis will be conducted to identify the similarities and differences in the formal, signifiatory, and contextual effects of different visual strategies (e.g., the anthropomorphism in Vogue Italia, the synthetic metaphor in Zhong Ling's work, the activist projection in Elias's work). Finally, all analytical findings will be synthesized to distill the common patterns, core tensions, and conditions for effectiveness in the operation of animal imagery for environmental communication in fashion photography.

6.3 Limitations

The analysis of this study is primarily based on a semiotic interpretation of the visual texts and their contexts, with conclusions drawn from theory-driven qualitative analysis. While this method can deeply reveal the mechanisms of meaning production, it does not directly measure the actual reception and psychological responses of the audience. Future research could employ empirical methods such as audience interviews, focus groups, or eye-tracking to complement and verify the textual analysis conclusions of this study.

Research Has Found

7.1 Multilayered Analysis Revealing Mechanisms of Signification

Based on the three-tiered analytical framework, this study finds that the three cases successfully construct animal imagery as multi-layered symbols for environmental communication through different visual strategies, albeit with distinct pathways of meaning generation and focal points of effect.

7.1.1 Tier 1 Findings: Formal Strategies Establish the Emotional Tone

- Vogue Italia "Animal Issue": Employing classic portrait photography lighting and composition, animals are often placed on the same visual plane as models, with soft lighting and high color saturation. This visual grammar of "high fashion" domesticates wildlife into a familiar aesthetic framework, reducing alienation and establishing an initial emotional tone of elegance and symbiosis, which may, however, weaken the sense of ecological crisis represented by their "wildness."

- Zhong Ling's Heat Wave: The use of digital compositing creates unnatural lighting and texture fusion; the form itself conveys a sense of discord and mutation. Colors often straddle the boundary between realism and surrealism. This formal "disharmony" directly visualizes the invisible impact of climate change, establishing a tone of warning and unease.

- I'M NOT A TROPHY: The projection of animal imagery onto the human body is central, with "superimposition" and "transparency" as key formal features. This strategy blurs the physical boundary between human and animal, creating a direct, corporeal metaphor. The strong contrast in lighting emphasizes contours, resulting in a formal language full of tension and declarative force, establishing a tone of protest and action.

7.1.2 Tier 2 Findings: Construction of Core Metaphor and Interactive Meaning

The core metaphor of Vogue Italia is “Anthropomorphic Connection.” Animals are presented as “portrait subjects” with personality and emotion, “interacting” with models through gaze or posture. This strategy invites the audience to understand ecological interconnectedness through emotional identification. Its persuasive path is “to evoke the desire for protection through beauty and empathy.”

The core metaphor of Heat Wave is “Fusional Alienation.” The digital synthesis of human and animal forms into one creates not a simple juxtaposition but a new, vulnerable hybrid species. Its deeper meaning points to the fact that in the climate crisis, the fates of “us” and “them” are inextricably bound together, facing transformation and threat collectively. Its interactive meaning is to make the viewer gaze at this “alienated” self-image, prompting reflection.

The core metaphor of I'M NOT A TROPHY is “Symbolic Bearing.” The human body becomes a “living canvas” displaying the plight of animals. This is not symbiosis but bearing and exposure. The model's posture (e.g., curled up, direct gaze) combined with the projection of an endangered animal constructs a narrative of “victimhood/accusation.” Its interactive meaning is the strongest, establishing a relationship of moral interrogation of the viewer through the model's direct gaze.

7.1.3 Tier 3 Findings: How Context Assigns and Negotiates Meaning

In the fashion magazine context of Vogue Italia, its environmental message is negotiated alongside luxury advertisements. Some audiences may primarily receive its aesthetic value, leading to the “semiotic drift” of its ecological referent. However, its “high-end” context also lends prestige and attention to the issue.

Heat Wave is disseminated in art galleries and social media. Its “art” label allows for bolder metaphors and critique, with audiences inclined towards symbolic interpretation. Dissemination on social media allows its “mutated” images to quickly become visual memes representing climate anxiety, with meaning reinforced through sharing.

I'M NOT A TROPHY is tightly bound to a specific advocacy campaign (anti-hunting), giving it the strongest activist context. In exhibitions and campaign reports, the image's meaning is firmly anchored to a specific environmental cause, presenting the lowest risk of “semiotic drift”, though its reach may be limited to already-engaged groups.

7.2 Comparative Perspective: Strategic Efficacy and Tensions

Through cross-case comparison, this study finds:

1. The Trade-off between Aesthetics and Critique: Case 1 (high aesthetics) is the most accessible for widespread dissemination, but its ecological message is most susceptible to dilution; Case 3 (high critique) has the clearest message but may “deter” fashion audiences seeking pure aesthetics; Case 2 (artistic metaphor) strikes a balance between the two.

2. Differences in Emotional Triggering Mechanisms: Case 1 triggers “yearning” and “tender empathy”; Case 2 triggers “unease” and “reflection”; Case 3 triggers “guilt” and “indignation.” Different emotions guide different behavioral intentions (e.g., support vs. protest).

3. The Spectrum of Commercial Compatibility: From Case 1 to Case 3, the visual strategies show decreasing compatibility with mainstream commercial fashion and increasing affinity with activism and critical art. This reveals a fundamental tension fashion photography faces in environmental communication: Should it "infiltrate" the commercial system to gradually change it, or stand outside the system to critique it?

DISCUSSION

Based on the research findings, this chapter further explores the core tensions and effective pathways for animal imagery in fashion photography as a tool for environmental communication.

8.1 The Efficacy Spectrum of Visual Strategies and Core Tensions

A comparative analysis reveals a strategic spectrum ranging from "aesthetic infiltration" to "critical positioning." The "anthropomorphic connection" strategy employed by Vogue Italia leverages existing fashion discourse to introduce ecological themes with low confrontation, yet risks diluting the environmental message through aesthetic absorption, potentially leading to "greenwashing" accusations. In contrast, the "symbolic bearing" strategy of I'M NOT A TROPHY excels in its clear moral stance and call to action, though its audience reach may be more limited. Zhong Ling's Heat Wave, utilizing an "artistic metaphor" strategy, occupies the middle of this spectrum. Through formal innovation (digital fusion), it visualizes the ecological crisis itself, sparking critical reflection while maintaining aesthetic autonomy, thus serving as a model for balancing commercial communication with ecological critique.

8.2 Theoretical Implications and Practical Strategies: Constructing the "Strong Sign"

This study deepens the understanding of the original hypotheses: the ecological symbolic meaning of animal imagery (H1) is not automatic but is an active construct resulting from strategic visual encoding and contextual anchoring; otherwise, it risks sliding into a mere consumerist symbol. Furthermore, the research distinguishes the varying utilities of "aesthetic appeal": when aesthetic form serves to construct a deep ecological metaphor (e.g., "fusional alienation"), it can effectively provoke reflective emotions (H2) and enhance communicative efficacy (H3). If it remains merely surface-level decoration, its role in promoting environmental awareness is limited.

Therefore, to prevent "semiotic drift," the key practice lies in constructing the "strong sign." This requires: 1) Narrative Anchoring: Closely tying the imagery to specific, transparent environmental narratives or actions; 2) Formal Innovation: Making the visual form itself a direct metaphor for the ecological issue, reducing the space for meaning to be stripped away; 3) Contextual Consistency: Ensuring that the radical expression of the imagery matches the brand's overall sustainable practices, thereby maintaining the credibility of the communication.



Figure 6 : YEAR OF THE TIGER

Source: Angelopenetta, 2022



Figure 7 : Dolce & Gabbana 2026 Spring/Summer Menswear Show

Source: Dolce & Gabbana, 2025

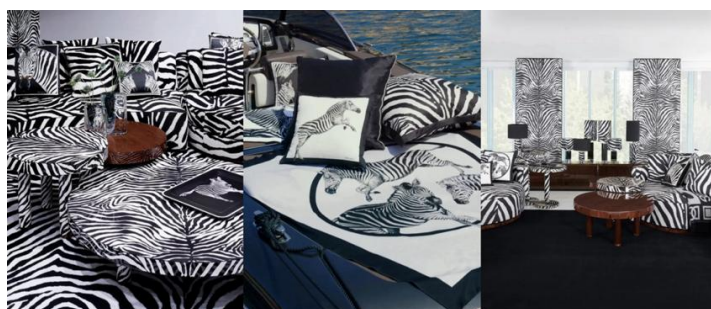


Figure 8 : Dolce & Gabbana Home Collection

Source: Dolce & Gabbana, 2021

CONCLUSION

9.1 Summary of Findings

By constructing an integrative visual and semiotic analytical framework, this study systematically reveals the multifaceted mechanisms of animal imagery as a tool for environmental communication in fashion photography. The core conclusion is that its communicative efficacy is highly dependent on the specific visual strategy employed ("anthropomorphic connection," "fusional alienation," "symbolic bearing") and its specific context, forming an efficacy spectrum that involves a trade-off between "aesthetic infiltration" and "critical positioning." Successful environmental communication relies on constructing a stable ecological "strong sign" through narrative anchoring, formal innovation, and contextual consistency.

9.2 Limitations and Future Directions

This study is based on qualitative case analysis; the generalizability of its conclusions awaits testing with a larger sample, and it lacks direct measurement of the actual reception effects on the audience. Future research could proceed in three main directions: 1) Employing audience-centered methods like eye-tracking combined with interviews to empirically test the attention-guiding and emotion-eliciting effects of different visual strategies; 2) Conducting cross-cultural comparative studies to examine the fluidity of meaning of the same animal symbol in different contexts; 3) Exploring the novel communicative potential and ethical challenges presented by AIGC-generated surreal animal imagery.

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A STUDY ON NARRATIVE STRUCTURE AND MULTI-SENSORY RHYTHMIC IMMERSIVE WEDDING SPACE DESIGN: TAKING “WEAVING REALM” AS AN EXAMPLE

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ABSTRACT

Immersive experiences are widely applied in contemporary spatial design, yet systematic research remains scarce on how narrative structures and multisensory experiences jointly construct “emotional rhythms” within wedding ceremony spaces. This study proposes a “narrative structure-emotional rhythm” wedding space design methodology grounded in narrative theory, emotional rhythm models, and multisensory integration mechanisms. Structural analysis is conducted through two international case studies. Building upon this, the methodology is applied to the actual wedding project “Weaving Realm,” undergoing comprehensive validation through questionnaires, scene design, rendering visualization, scale models, and on-site feedback. Findings reveal that narrative structures effectively organize emotional segments within wedding events, while multisensory designs—including light, color, texture, music, and scent—significantly amplify emotional peaks at each stage. Ultimately, this study proposes a replicable immersive wedding space design process, offering methodological insights for future research on intimate ceremonial spaces and experiential environments.

Keywords: immersive design; spatial narrative; emotional rhythm; multisensory experience; wedding space.

INTRODUCTION

In recent years, immersive experiences have emerged as a significant trend in spatial design, finding widespread application in commercial exhibitions, immersive theaters, and experiential installations. However, compared to other immersive settings, wedding spaces—as highly emotional, symbolic, and participatory ceremonial environments—require richer narrative structures and emotional expression. Yet current wedding design practices remain largely confined to visual aesthetics and set decoration, lacking a systematic integrated approach encompassing “narrative logic—emotional rhythm—multisensory experience.”

Existing research predominantly focuses on narrative design within exhibitions, festivals, and brand experiences. Yet, within ceremonial spaces—particularly wedding settings—there remains insufficient in-depth discussion on “how spatial narratives construct emotional rhythms.” The core of a wedding lies not in decoration, but in emotion; emotional transmission stems from the sequence of events within the space, emotional pacing, sensory stimulation, and memory triggers. Therefore, establishing an actionable, verifiable immersive wedding space design methodology has become a critical research need.

To address this gap, this study proposes a “Narrative Structure-Emotional Rhythm” immersive wedding design model through international case analysis, user needs research, and practice-based

design validation. Its feasibility is demonstrated in the real-world project “Weaving Realm.” This research offers valuable insights for wedding designers, spatial planning teams, and the broader field of ceremonial space studies.

METHODOLOGY

This study employs a three-phase methodology comprising “case analysis + user needs research + practical validation,” with the overall process illustrated as follows:

2.1 Comparative Analysis of International Cases

Two representative cross-cultural immersive wedding case studies:

1. Washington Wedding (United States)

- Emphasizes natural lighting, layered aesthetics, and a gentle narrative



Figure1 : Schematic Diagram of Washington's Immersive Wedding Space Narrative

2.Spy Museum Wedding

- Emphasizing architectural depth, reflective materials, and the rhythmic pulse of urban emotion.

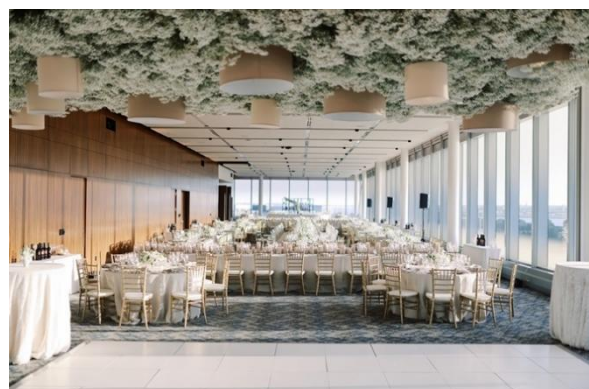


Figure 2 : Spy Museum Wedding — Multilayered Glass Narrative (Swoon Soiree, 2025)

Key analysis points include:

- Narrative structure: Plot sequence, spatial paragraphs
- Emotional rhythm: Emotional peaks and transitions
- Multisensory mechanisms: Light, sound, texture, color, scent
- Emotional triggers and memory nodes

This analysis serves to construct the “narrative emotion model” for this study.

2.2 User Surveys and Requirements Extraction

Prior to initiating design practice, this study conducted one-on-one questionnaires and interviews with brides as core users to identify key emotional needs and aesthetic preferences within wedding ceremonies. Research areas encompassed:

- (1) Aesthetic Orientations (e.g., elegance, crystal elements, rose-pink tones)
- (2) Emotional Expectations (desired emotional highlights and points to avoid)
- (3) Memory Triggers (personal experiences, symbolic objects, significant events)
- (4) Ceremonial scene aspirations (moments to emphasize, interpersonal relationships)

Through thematic analysis of questionnaire data, the study distilled four core design requirements: sense of display, crystal symbolism, rose-pink tones, and overall elegance. These findings were further mapped into narrative structures and multisensory design strategies, serving as key input variables for the study's practical validation.

2.3 Practice-Based Research

To validate the proposed “narrative structure-emotional rhythm” framework, this study employs the actual wedding project “Weaving Realm” as an experimental field, utilizing a practice-based research methodology. The specific process includes:

- (1) Narrative Structure Construction: Based on user needs, wedding content is divided into three narrative chapters: “Memory Evocation—Emotional Deepening—Family Resonance.”
- (2) Multisensory Rhythm Design: Constructed an emotional rhythm chain corresponding to narrative segments, integrating visual, auditory, olfactory, tactile, and thermal sensations.
- (3) Visualization Validation: Pre-validated design elements—spatial hierarchy, lighting effects, material textures—through renderings and a 1:30 scale model.
- (4) On-site Implementation and Feedback:

Renderings and models were cross-referenced at the actual wedding venue, achieving over 90% accuracy. Post-ceremony emotional responses and experiential feedback were documented to validate the design framework's effectiveness.

This methodology enables systematic validation of theoretical models within real ceremonial spaces, ensuring the research's operational feasibility and replicability.

RESULTS

The findings of this study are organized into three sections:

- (1) The narrative structure and emotional rhythm patterns of international case studies;
- (2) The narrative structure and multisensory rhythm design outcomes of the "Weaving Realm" wedding practice;
- (3) Visual validation and on-site emotional feedback.

3.1 Narrative Structure and Emotional Rhythm Characteristics of International Wedding Case Studies

This study aims to investigate how animal imagery in fashion photography functions as a semiotic tool for environmental communication, and how it can enhance public awareness and engagement with ecological issues.

(1) Washington Wedding: A Three-Part Progressive Narrative Rhythm



Figure 3 : Schematic Diagram of Washington's Immersive Wedding Space Narrative

Case analysis reveals that this wedding employs natural lighting and soft color palettes to create a "progressive emotional curve." Its narrative structure unfolds in three phases:

- Phase 1: Warm-up

Soft yellow lighting and pale floral arrangements cultivate a welcoming and stable atmosphere.

- Phase 2: Ceremony (Peak)

Central axis lighting, white tones, and vertical structures enhance sacredness, creating an emotional peak.

- Phase 3: Banquet (Release)

Warm lighting and relaxing music bring emotions back down.

The emotional rhythm follows a pattern of gentle rise → ceremonial climax → tender conclusion.

(2) Spy Museum Wedding: A Dramatic Rhythm Driven by Spatial Depth



Figure 4 : Spy Museum Wedding

This wedding employs architectural structures and reflective materials to construct a highly dramatic “exploratory narrative”:

- Exploration:

Corridors and glass interfaces create uncertainty and anticipation.

- Reveal:

Open spaces and highly reflective materials generate a stunning effect, reaching an emotional peak.

- Bonding:

The fusion of metal and warm lighting creates an urban romantic atmosphere, stabilizing the emotional state.

Results indicate that spatial depth, material reflection, and tonal transitions are the key mechanisms shaping the narrative rhythm.

(3) Case Summary: Narrative structure determines the pacing framework, while multi-sensory elements amplify emotional peaks.

By synthesizing the two case studies, the following principles emerge:

- The narrative structure (paragraph division, movement lines, event sequence) determines the “main curve” of emotional rhythm.
- Lighting, color, texture, and sound define the “intensity and texture” of rhythm.
- Emotional peaks typically occur at “narrative turning points” (Reveal, Vow, First Look).

This provides a reference model for constructing rhythm in practical design.

3.2 The Narrative Structure Design Outcomes of “Weaving Realm”

Based on the bride questionnaire and wedding content, this study breaks down the narrative structure into three chapters, each corresponding to distinct emotional segments:

Memory Trigger

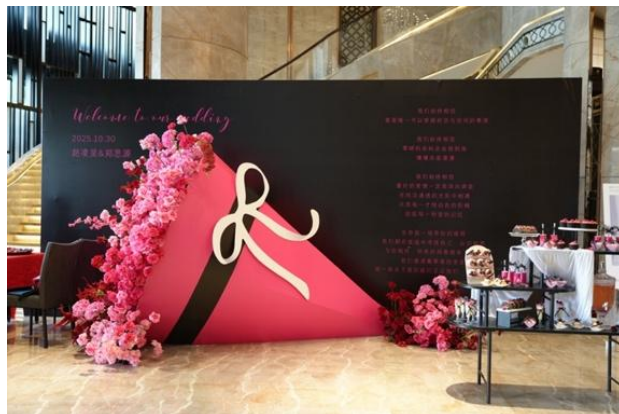


Figure 5 : Weaving Realm Wedding

- The concept originates from the symbolic memory of the “first bouquet.”
- Layered floral arrangements and light reflections create a psychological transition akin to an “entrance ritual.”
- Soft, warm tones evoke an emotional focus on “reminiscence and connection.”

Deepening Emotions



Figure 6 : Weaving Realm Wedding



Figure 7 : Weaving Realm Wedding

- Create a “warming sensation” through rose-pink hues, crystal refractions, and dynamic light effects.
- Build an emotional crescendo using materials (crystal stones, silk), colors (rose-pink to mauve), and lighting effects (flickering).
- Narrative objective: Convey the tension and energy of a love story.

Chapter Three: Family Resonance

- Family bouquets, embraces, and other rituals become emotional peaks.

- Warm lighting, soft focus, and floral scents combine to create “emotional diffusion.”
- Emotional objectives are “warmth, belonging, and strength.”

Results Summary:

The three-part narrative structure successfully establishes an emotional rhythm of “arousal—escalation—resonance,” aligning with the rhythmic patterns observed in international case studies.

3.3 Multisensory Rhythm Design Outcomes

To enhance the perceptibility of the narrative structure, this study constructs a rhythmic chain based on the five senses:

(1) Visual (Lighting, Color Temperature, Layering)

• Entrance: Soft Warm Light □ Ceremony: Cool White Light □ Banquet: Warm Light Reintroduction

- Color temperature shifts align precisely with narrative segments
- Visual elements serve as the most potent “emotional rhythm driver”

(2) Auditory (Music and Soundscape)

• Groom's performance creates the emotional peak

• Musical styles before and after form a “introduction- development- transition- conclusion” structure

(3) Olfactory (Floral Scents and Memory Triggers)

- Rose fragrance serves as the underlying emotional scent throughout
- Enhanced scents at specific points reinforce the “chapter transition” sensation

(4) Tactile (Textures, Sense of Distance, Temperature)

- Silk, petals, and crystal textures deliver emotional nuance
- Cool crystal □ Warm floral elements create tactile rhythm

(5) Temperature and Light Sensation

- Warm light – Cool light – Warm light mirrors the emotional “waveform curve”

Conclusion:

Synchronized multisensory elements forge an emotional rhythm chain with “chapter-like” structure, transforming the wedding into a structured emotional journey.

3.4 On-site Visualization and Emotional Feedback Validation

To validate the feasibility of the “narrative structure- emotional rhythm” design framework in actual wedding settings, this study compared rendered images with on-site arrangements to assess the fidelity of key elements such as spatial ambiance, light- and- shadow layering, floral arrangements, and color rhythms. Additionally, emotional feedback from guests was collected.

(1) On-site Visualization Validation (Rendering □ Implementation)

Practical results demonstrate that the on-site arrangements closely matched the design-phase renderings in terms of light control, spatial layering, and color transitions. Specific findings include:

- High Reproducibility of Light Rhythm:

The warm lighting ambiance during the entrance sequence, neutral color temperature in the ceremony area, and heightened brightness during emotional climaxes were all accurately rendered.

- Consistent floral and material layering:

Key visual elements—including suspended floral arrangements, tabletop blooms, and crystal accents—maintained high fidelity to the design blueprint in the final execution.

- Clear color-emotion progression:

The rose-pink to lilac-purple emotional build-up achieved a smooth gradient effect through coordinated lighting and floral arrangements.

- Coherent spatial narrative:

On-site pathways and sightlines aligned with the design plan, allowing the narrative structure to unfold naturally within the physical space.

Overall, the execution successfully recreated the key emotional milestones from the design phase, demonstrating strong predictability and implementability.

(2) On-site Emotional and Experiential Feedback

Feedback collected through on-site observation and interviews with the bride and guests indicates:

- The vast majority of participants clearly perceived the “emotional transitions” within the space.

- The groom's performance and the family bouquet exchange were universally recognized as emotional peaks.

- Multisensory synchronization (lighting, fragrance, flickering candlelight, floral textures) significantly enhanced immersion.

- The bride specifically noted that “the on-site atmosphere perfectly matched my ideal vision,” validating the effectiveness of pre-wedding visualizations for communication and expectation management.

Overall guest feedback confirmed the wedding space possessed distinct narrative flow, rhythmic pacing, and unified emotional expression, substantiating the efficacy of this research-based design methodology.

Summary of Research Findings

The “narrative structure-emotional rhythm” design framework proposed in this study has been validated as effective through international case studies and practical applications. Its multisensory integration significantly enhances the emotional experience within wedding spaces, enabling the ceremony to unfold as a structured, immersive emotional journey.

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FACTORS THAT INFLUENCE THE DECISION TO ATTEND RATCHABURI FC

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ABSTRACT

The purpose of this research is to study the factors that influence the decision to attend Ratchaburi FC football club and compare the factors that influence the decision to attend Ratchaburi FC football club between men and women. The sample group consisted of 400 fans of Ratchaburi FC and research instrument was a questionnaire, which analyzed the data using descriptive statistics such as frequency, percentage, mean, standard deviation and inferential statistics, including Independent Samples T-test.

According to research, the most respondents are women and students ages 20-30, with a monthly income of less than 10000 Thai baht. Physical evidence and presentation are the most influential the marketing mix factor in decision-making. The results of compare the factors that influence the decision to attend Ratchaburi FC football club between men and women. It was found that there was no difference at the statistical significance level of 0.05. However, the information obtained can be used as a guideline for other football clubs or other organizations in terms of factors that influence the decision to watch football or any type of sports.

Keyword: Football Club, Demographic Factors, Marketing Mixed 7ps

INTRODUCTION

In the 2021-2022 season, Ratchaburi FC ranked 9th in attendance with a total of 26,629 people, a peak of 2,454, a low of 1,215, and an average of 1,775. This represents a change of -51.0% (Thai League, 2022). The statistics show a decrease in average attendance for Ratchaburi FC matches, despite the popularity of Thai football. This issue is therefore of interest.

Statistics clearly show problems and observations regarding the declining attendance of Thai football fans, particularly those in the local area and surrounding regions. If these issues and their causes are not addressed, it could lead to a further decrease in stadium attendance, which would have a negative long-term impact on Thai football and may mark the beginning of a return to the past of Thai football. The declining attendance at football matches among Thai football fans, including those of Ratchaburi

FC and fans in nearby areas, is one issue that has garnered media attention and is a problem that many clubs, as well as the Football Association of Thailand, are also addressing.

Not only the reducing of the club's revenue as ticket sales, there are a major source of income too. Fans often purchase food, drinks, and club merchandise at the same time, causing clubs to lose revenue from two main sources simultaneously. This could have a long-term impact on Thai football leagues. Based on the reasons stated above, the researchers are interested in studying the factors influencing attendance at Ratchaburi FC football matches. This is to gain knowledge and guidelines for improving the effectiveness of Ratchaburi FC's football attendance, and to use the collected data to plan marketing strategies, improve and develop attendance at Thai League matches for Ratchaburi FC and other sports clubs to a greater extent.

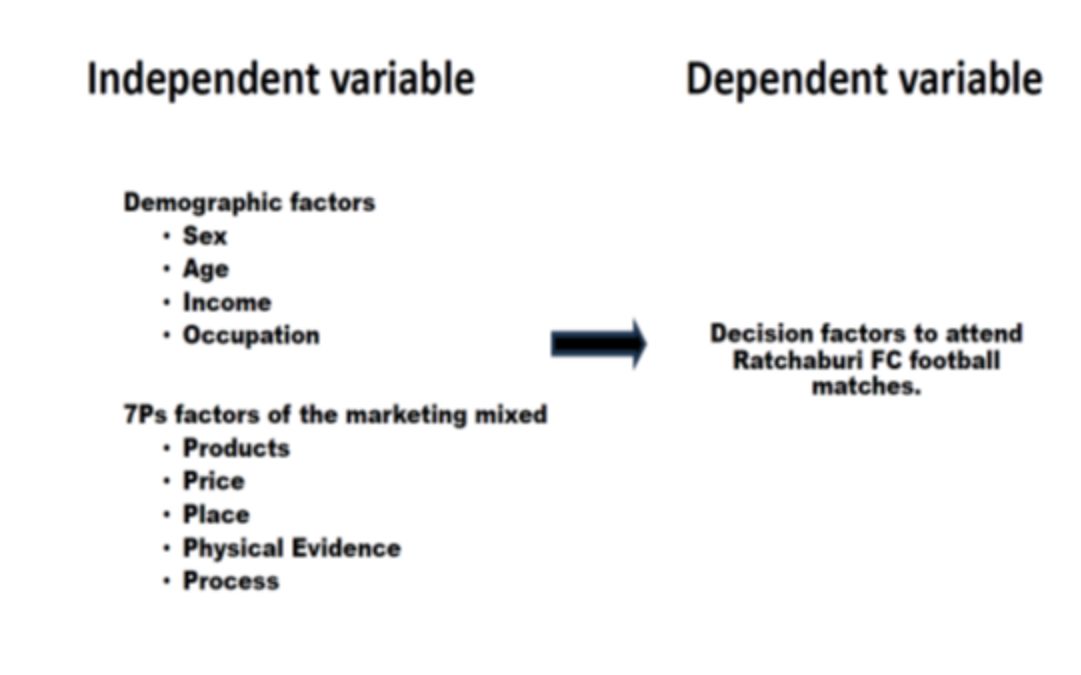
OBJECTIVE

1. To study the factors influencing the decision to attend Ratchaburi FC football matches.
2. To compare the factors influencing the decision to attend Ratchaburi FC football matches between male and female participants.

Expected Benefits

1. To understand the factors influencing the decision to attend Ratchaburi FC football matches.
2. To understand the differences in factors influencing the decision to attend Ratchaburi FC football matches between male and female participants.

Conceptual framework



Picture 1 Conceptual framework

METHODOLOGY

Sample Group

A group of 400 Ratchaburi FC football fans, calculated using Yamane's (1973) formula.

Research tools

The research instrument used in this study is a questionnaire, which is divided into four parts as follows:

Part 1 of the questionnaire, which gathers demographic information from the respondents, is in the form of a checklist

Part 2 is a questionnaire regarding factors influencing Ratchaburi FC fans' decisions to attend football matches. This is a multiple-choice questionnaire.

Part 3 involves a questionnaire relating the 7Ps marketing mix factors to the opinions of Ratchaburi FC fans, using a rating scale with 5 levels of opinion from high to low (5=strongly agree, 4=agree, 3=moderately agree, 2=disagree, 1=disagree)

Data Collection

This research collected data from questionnaires from a sample group of 400 people. The sample group completed the questionnaires via Google Forms. Once the questionnaires were completed, their accuracy and completeness were checked. The questionnaires were then coding (form coding) and the data was analyzed statistically.

Using Statistics to Analyze Data:

1. Descriptive Statistics includes frequency distribution tables, percentages, means, and standard deviations.
2. Inferential Statistics includes the Independent Samples T- test, with a statistical significance level of 0.05.

RESULTS

Table 1. Analysis of frequency and percentage of demographic factors.

Demographic factors	Number (people)	Percentage
---------------------	-----------------	------------

1. Sex		
Male	191	47.8
Female	209	52.3
Total	400	100.0
2. Age		
Below 20 Years Old	84	21.0
20 – 30 Years Old	220	55.0
31 – 40 Years Old	38	9.5
41 – 50 Years Old	38	9.5
Over 51 Years Old	20	5.0
Total	400	100.0
3. Income		
Below 10,000 Baht	190	47.5
10,000 – 20,000 Baht	134	33.5
20,001 – 30,000 Baht	37	9.3
30,001 – 40,000 Baht	12	3.0
More Than 40,000 Baht	27	6.8
Total	400	100.0
4. Occupations		
Students	229	57.3
Self-employed	50	12.8
Private employee	40	10.0
Government Employee	41	10.3
State enterprise	18	4.5
Others	21	5.3
Total	400	100.0

Table 1 shows that the majority of respondents were female, aged 20-30 years, students, and had a monthly income of less than 10,000 baht.

Table 2: Summary of opinions from Ratchaburi FC fans regarding marketing mix factors.

The seven factors of the marketing mixed.	400 respondents.		
	$\bar{x}$	S.D.	Interpret the results Level of opinion
Product	3.78	.755	High
Price	3.91	.843	High
Place	3.70	.898	High
Promotion	3.73	.888	High
People	3.87	.741	High
Physical Evidence	4.05	.741	High
Process	3.97	.851	High

Table 2 shows that the sample group had a high level of opinion regarding the overall marketing mix factors. The aspect of creating and presenting physical characteristics had the highest average score, followed by the process, price, personnel, product, promotion, and distribution channels, respectively.

Table 3. Comparison of marketing mix factors between male and female genders in their decision to attend Ratchaburi FC football matches.

The seven factors of the marketing mixed.	Sex				t	Sig.
	Male		Female			
	$\bar{x}$	S.D.	$\bar{x}$	S.D.		
Product	3.74	.797	3.82	.714	0.99	.324
Price	3.89	.886	3.93	.802	0.45	.655
Place	3.70	.965	3.71	.835	0.19	.848
Promotion	3.65	.997	3.81	.769	1.76	.079
People	3.83	.937	3.90	.801	0.78	.436
Physical Evidence	4.04	.800	4.05	.685	0.19	.851
Process	3.93	.943	4.00	.758	0.86	.389

*Statistical significance level 0.05

Table 3 shows that the obtained Sig. value is greater than the statistical significance level of 0.05. Therefore, H_0 is accepted, indicating that the comparison of marketing mix factors between male and female genders in deciding to attend Ratchaburi FC football matches does not differ significantly at the 0.05 statistical significance level.

Research Summary

Demographic data of the respondents revealed that the majority were female, aged 20-30 years, students, and had a monthly income of less than 10,000 baht.

Factors influencing the decision to attend Ratchaburi FC football matches.

The survey revealed that all marketing mixed factors had a high average score. The three factors with the highest average scores were: creating and presenting the physical environment, primarily focusing on the atmosphere of cheering at the football stadium, creating excitement and entertainment for viewers, ensuring the stadium meets standards, and having clearly defined zones for different fan groups (ensuring safety). The stadium was spacious and appeared professional (for example, there was constant cheering during the game, and zones were separated for home and away fans).

Process factors mainly focus on ensuring good security around and around the stadium, systematic fan management (quick and efficient security checks and fan entry), and efficient ticket purchasing (fast and accurate) (e.g., sufficient security personnel around and around the stadium, quick ticket checks).

The price factor primarily focuses on clearly stated ticket prices, value for money with annual memberships, and reasonable ticket prices (e.g., prices are clearly indicated on the ticket for each seating zone, and annual memberships offer souvenirs and benefits commensurate with the price).

Factors influencing the decision to attend Ratchaburi FC football matches between male and female genders.

The survey found that a statistically significant difference (0.05) was found between male and female genders in the decision to attend Ratchaburi FC matches. This is because current marketing activities and channels reach football fans of all ages and genders comprehensively, without discrimination, and cater to diverse fan needs. Therefore, gender is not a significant factor in the decision to attend Ratchaburi FC matches.

Discussion of Results

This research aimed to study the factors influencing the decision to attend Ratchaburi FC football matches and to compare the factors influencing the decision to attend Ratchaburi FC football matches between males and females. The research team discussed the results of the analysis as follows:

Overall, factors significantly influence the decision to attend Ratchaburi FC football matches. The physical design and presentation of the club are considered the most important factor, followed by process, price, personnel, product, marketing, and distribution channels, in that order. This indicates the strong influence of Ratchaburi FC's physical design and presentation.

These factors influence the decision to attend a football match in a stadium. This means the atmosphere in the stadium creates excitement and entertainment. The stadium meets standards and has clearly defined zones for different fan groups (ensuring safety). There is ample parking, complete facilities within the stadium, areas that allow you to meet your favorite players, sufficient and well-maintained restrooms, attractive merchandise shops and club products, and a variety of food options within the stadium.

This includes the use of appropriate containers for eating inside the stadium, all of which influence the decision to watch football in the stadium. This aligns with the research by Kamolsing Nilsri, Kruewan Chatchakul, and Nattawut Boonsri (2019), which studied factors influencing attendance at professional football matches in Thailand, with Buriram United Football Club as a case study. They found that the factors influencing attendance at professional football matches at Chang Arena for Buriram United Football Club were at a high level.

Physical factors are the most important in influencing attendance at professional football matches. This includes the atmosphere, seating comfort, and various facilities within the stadium, all of which significantly influence the decision to attend the game.

In terms of process factors, these significantly influenced the decision to attend Ratchaburi FC football matches. Good security around and around the stadium was the most important, followed by systematic fan management (efficient and rapid security checks and entry into the stadium). The least important factor was the efficient (fast and accurate) ticket purchasing process.

Security measures around and around the stadium provide peace of mind to football fans, alleviating concerns about their belongings and personal safety. This aligns with the research by Nattawat Wiwattanawararom (2016), which studied factors influencing Thai football fans' decisions to attend football matches in stadiums and found that physical and process factors had the third-highest positive impact on the decision to attend football matches in stadiums. It can be said that Thai football fans place importance on the professionalism of club management, such as the ability to provide comprehensive facilities, sufficient parking spaces for fans, and high standards of security. This instills confidence in fans to attend football matches in the stadium.

In terms of price factors, they significantly influence the decision to attend Ratchaburi FC football matches. The clearly stated ticket price is the most important factor, followed by the value of the annual membership fee in terms of privileges, and then the reasonable price of individual tickets. This aligns with the findings of Jaru Jaruchanthar and Phassana Soraphetphisai (2017). A study of factors influencing fan loyalty to Air Force Central FC revealed that price is a significant factor, with fans placing importance on the appropriateness of match ticket prices and the prices of consumer goods such as food and beverages.

In terms of comparing marketing mix factors between men and women in their decision to attend Ratchaburi FC football matches, there was no statistically significant difference at the 0.05 level. This is because current marketing activities reach all football fans comprehensively, without discrimination, and are able to cater to a diverse range of consumers.

Therefore, gender is not a factor influencing the decision to attend football matches at Ratchaburi FC's stadium. This is consistent with the research by Piyamaporn Chuichunu (2016), which studied factors influencing purchasing decisions through social media and found that consumers with

different demographic factors such as gender, age, education level, occupation, and income did not differ in their purchasing decisions through social media, due to the current online society.

The widespread and equitable accessibility of online social networks for individuals of all genders, ages, educational backgrounds, occupations, and income levels has resulted in a wider variety of products and marketing activities that reach all consumers without discrimination. This allows for the diverse needs of consumers, meaning that gender, age, education level, occupation, and income level are no longer significant factors influencing purchasing decisions made through online social networks.

Recommendations:

1. Football clubs in Thailand, both amateur and professional, should focus on analyzing the factors influencing fans' attendance decisions in order to understand the true needs of their fans and ultimately achieve financial stability.
2. The factors influencing football attendance decisions should be differentiated between professional and age groups to gain more detailed insights for clearer marketing planning.

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NUTRITION FOR ESPORTS ATHLETES

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ABSTRACT

Esports has become a popular international competitive activity, requiring athletes to focus, make decisions quickly, and perform in a coordinated manner. Proper nutrition plays a crucial role in enhancing performance and reducing health risks during competition. A nutritious and balanced diet helps players maintain energy, focus, reduce fatigue, and accurately respond to in-game situations. This research aims to elucidate the importance of nutrition on esports performance, propose appropriate meal selection guidelines before and during competition, and raise awareness among players and stakeholders in the esports industry. The study focused on analyzing dietary behavior, nutritional knowledge and understanding, and meal timing to provide an overview of the relationship between nutrition and player performance. The expected outcome is a practical nutritional guideline that helps esports athletes maintain optimal energy and focus, continuously regenerate their bodies and minds, reduce fatigue, and develop sustainable health habits. Furthermore, it can serve as a baseline for coaches, tournament organizers, and other stakeholders to plan meals and training to meet the needs of professional athletes.

Keywords: Nutrition, esports, athlete performance

INTRODUCTION

Esports has grown rapidly over the past decade, becoming an industry garnering widespread economic, cultural, and educational attention. Esports athletes face intense competition, long training periods, and physical and mental pressure. Although esports does not require strenuous physical movement like other sports, skills related to concentration, analytical thinking, rapid decision-making, and precise response require energy and physical care just as much as other sports. Therefore, nutrition is a key factor directly affecting the performance of esports athletes. A nutritionally complete and appropriate diet enhances brain function, reduces fatigue, and helps maintain focus during competition. Conversely, consuming an inappropriate diet, such as one high in sugar, saturated fat, or lacking essential

nutrients, can impair performance, lead to fatigue, decreased attention span, and negatively impact long-term health. However, many esports athletes lack knowledge and understanding about proper food selection. Consequently, their eating habits often rely more on convenience or familiarity than on suitability for performance and health. A key question is whether current esports athletes are making the right food choices, and what impacts improper consumption can have on their performance. This study aims to elucidate the importance of nutrition on esports performance, provide guidelines for proper food selection before and during competition, and raise awareness about proper nutritional health care for esports athletes. This will lead to the development of competitive abilities along with the promotion of sustainable health.

OBJECTIVES

1. To explain the importance of nutrition in esports performance.
2. To propose guidelines for selecting appropriate foods before and during esports competitions.
3. To raise awareness of proper nutritional health care for esports athletes.

METHODOLOGY

Nutrition Concepts for Esports Athletes

Nutrition involves consuming nutrients from food and drink to provide energy, restore the body, and help the brain and other organs function normally. For athletes, good nutrition not only enhances performance but also supports overall health. Although esports is not as physically demanding as outdoor sports, it requires high concentration, speed of thought and decision-making, and physical and mental readiness. Therefore, nutritional care is a key factor in athlete performance and readiness. Esports athletes often spend long periods of time sedentary, resulting in limited physical movement and the use of specialized energy sources, such as brain function and physical response. Some athletes' eating habits are often unbalanced, focusing on convenient and quick meals such as fast food, snacks, fried rice, or instant noodles. This results in high fat and sugar intake, but lacks essential nutrients for the brain and body, such as protein, vitamins, and minerals. The result is decreased performance, fatigue, short attention span, and reduced competitive readiness. Lack of proper nutrition also has long-term health consequences. Athletes who eat an unbalanced diet are at risk for problems such as being overweight, high blood pressure, abnormal blood sugar levels, or chronic fatigue. Furthermore, prolonged gaming sessions combined with nutritious foods increase the risk of neck and back pain, and accumulated stress, all of which directly impact performance.

For this reason, nutritional concepts for esports athletes emphasize creating a balance and preventing long-term health problems. Prioritizing nutrition doesn't just mean eating to feel full; it also lays a crucial foundation for performance and competitive readiness. Understanding the problems of inappropriate eating and its potential impacts can help athletes and stakeholders develop appropriate strategies for physical and health care, supporting sustainable esports play.

Health and Performance Problems in Esports Athletes

Esports athletes may not be as physically demanding as outdoor sports, but their long-term training and competition clearly impact both their health and performance. Playing games for extended periods without rest or proper physical management can lead to a variety of health problems, both physical and mental, and competitive. One common health problem is neck, back, and wrist pain due to prolonged gaming posture. Looking down at a computer or mobile phone screen for hours causes muscle tension in the neck and back, resulting in chronic pain and potentially affecting the ability to sit or compete. Furthermore, vision and concentration problems are common. Athletes staring at screens for extended periods can lead to eye strain, dryness, or pain. Continuous screen time also slows concentration and response times. Without proper eye rest and rest, performance can significantly impact performance. Another common health problem is health problems related to eating and lifestyle habits. Many esports athletes consume convenient and quick meals, such as fast food, snacks, fried foods, or instant noodles. This leads to high fat and sugar intake, but lacks essential nutrients for the brain and body. This combined with prolonged gaming can lead to fatigue, poor concentration, and reduced competitiveness. They also face risks of long-term health problems such as being overweight, high blood pressure, abnormal blood sugar levels, and accumulated stress. Esports athletes' performance is also impacted by these factors. Chronic fatigue from prolonged gaming, insufficient rest, and poor nutrition can slow decision-making, reduce reaction time, and decrease concentration. This can lead to ineffective training and competition. Therefore, understanding the health and performance issues of esports athletes is crucial, not only to improve training and competition, but also to help players properly care for their bodies and health. Recognizing the impact of gaming behavior, prolonged sitting, unbalanced eating, and insufficient rest will help athletes and stakeholders develop strategies to prevent problems and sustain their performance.

In conclusion, esports athletes' health and performance problems stem from multiple factors, including gameplay posture, rest, eating habits, and training continuity. If not managed properly, they can impact both the body and mind, and competitive performance. Raising awareness of these issues is therefore a crucial step in developing strong and highly effective esports athletes over the long term.

Guidelines for Choosing the Right Food and Nutrition for Esports Athletes

Esports athletes require high concentration, speed of thought and decision-making, and physical and mental readiness. Proper nutrition is therefore crucial to performance, health, and competitive readiness. Before a competition, athletes should eat foods that provide adequate and easily digested energy to prepare their brains and bodies. Complex carbohydrates, such as rice, whole wheat bread, or grains, provide sustained energy and reduce fatigue. Protein, such as chicken, fish, pork, or eggs, helps repair wear and tear and enhance muscle readiness. Chewing gum can sometimes reduce excitement and anxiety, improving concentration and mental readiness. Avoid spicy or chili foods before a competition, as they can irritate the stomach, cause bloating, or stomach pain, affecting concentration and comfort during the game. Eating heavy meals can also make you feel uncomfortable and reduce performance. Athletes should choose light snacks, such as fruit, nuts, or yogurt, to maintain energy levels and focus. Water and sports drinks help replace lost water and electrolytes. Energy drinks can help the body wake up and the brain function faster, but be careful about sugar and caffeine, as they can cause palpitations or fatigue later in the competition and over the long term. Recovery of the body and brain is essential. Adequate protein, such as chicken, fish, eggs, or nuts, helps repair muscles and other worn-out areas. Carbohydrates help replenish lost energy, while healthy fats, such as olive oil or peanut oil, help

the body function better. Drinking enough water and getting enough rest promotes faster recovery, reduces fatigue, and maintains performance.

Table 1 Summary table of nutrition for esports athletes

period	Main food types	Food samples	Purpose / Benefits	Additional instructions
Before the competition	- Complex carbohydrates - Lean protein	Brown rice, whole wheat bread, grains, chicken, fish, eggs	Provides continuous energy, prepares muscles and brain, and reduces fatigue.	Avoid foods that are very spicy, greasy, or difficult to digest.
During the competition	- Light snacks - Electrolyte/caffeine drinks in appropriate amounts	Fruits, nuts, yogurt, water, sports drinks	Maintain energy levels, concentration and alertness, and prevent dehydration.	Sip water regularly and avoid excessive caffeine intake.
After the match	- Protein - Carbohydrates - Good fats	Chicken, fish, eggs, rice, potatoes, olive oil, beans	Restore muscles and brain, replenish energy, and enhance long-term health.	Drink enough water and get plenty of rest.
Long term	- Complete food from all 5 food groups - Focus on quality over quantity	Fresh fruits and vegetables, lean protein, whole grains, healthy fats	Maintain performance, prevent chronic disease and brain fatigue.	Plan your daily meals and control your sugar/ fat intake.

In conclusion, choosing the right foods and nutrition can help esports athletes maintain sustained energy, improve brain function, speed recovery, reduce fatigue, and maintain long-term health. Consuming the right amount of protein, carbohydrates, and fat, along with managing fluids and beverages to enhance concentration and reduce agitation, will allow athletes to perform at their full potential and achieve sustainable health.

Analyze the nutritional knowledge and understanding of esports athletes

Many esports athletes lack a proper understanding of nutrition. Many are unaware that the foods they eat daily directly impact their concentration, memory, and in-game response. During intense competitions or training, they often opt for convenient and quick meals like fast food, packaged snacks, or energy drinks rather than considering the nutritional value their bodies and brains need. This lack of understanding of the nutrients their bodies need leads to imbalanced eating patterns, such as skipping

meals, eating irregularly, or consuming excessive caffeine to stay awake. The result is fatigue, mental dullness, and insufficient rest, all of which directly impact gaming performance. Without nutritional knowledge, esports athletes often overlook essential foods for brain and nervous system function, such as fish, nuts, vegetables, fruits, and vitamins, which are more effective at enhancing concentration and focus than energy drinks. This lack of knowledge is a major weakness, not only impacting competition in the short term, but can also lead to long-term health problems.

Analysis of meal timing and its effect on competitive performance of esports athletes

Meal timing plays a crucial role in the performance and readiness of esports athletes. Although esports emphasizes brain power more than physical strength, concentration, reaction speed, and decision-making accuracy depend on the body's energy and nutrients intake. Meal planning is therefore not just about the body, but also directly impacts competition performance.

1. Pre-competition meals

The pre-competition meal is crucial because it prepares the body and brain for performance. Athletes should eat their main meal approximately 2-3 hours before the game to ensure proper digestion and sustained energy. Examples of suitable foods include whole grain rice or bread, vegetables, fruits, and lean protein such as chicken, fish, or eggs. Eating a balanced and balanced diet will help reduce hunger during the game, reduce fatigue, and enhance sustained concentration.

2. During-competition meals

For long-term competitions, having light snacks or meals during gameplay helps maintain energy and focus. For example, fresh fruit, nuts, or small grain snacks provide sustained energy without causing heaviness or drowsiness. Regular hydration is also crucial, as even minor dehydration can impair concentration and slow response times. Athletes who manage their diet well during competition tend to maintain focus, improve accuracy, and reduce the chances of unnecessary mistakes.

3. Long-term diet and daily nutrition planning

In addition to pre- and during-competition meals, daily meal planning impacts long-term performance. Nutritionally conscious athletes consistently choose a balanced and varied diet, not focusing solely on temporary energy. For example, they consume a consistent diet of fruits, vegetables, whole grains, protein, and healthy fats. This helps the body recover quickly after training and competition, reduces chronic fatigue, and maintains focus and mental readiness, enabling consistent training and performance. Timing meals at all times before, during, and long-term is therefore an important strategy that esports athletes should not overlook. Proper meal planning helps players maintain sustained energy, focus, and maintain both physical and mental readiness. Neglecting nutrition can lead to decreased focus, inconsistent energy, and slow recovery after competition, leading to decreased performance over the long term.

A nutritional development model for esports athletes, with systematic details on each topic, suitable for use in curriculum development, athlete care program design, or as part of research.



Figure 1. Nutrition development model for esports athletes.

CONCLUSION

Esports requires intense concentration and brain reflexes. Diet and nutrition management impact physical and mental readiness. Proper nutrition provides sustained energy, high concentration, and sustained performance during competitions. Consistent, well- balanced nutrition reduces fatigue, promotes recovery, and prepares the body for continued training. Inadequate nutrition can, however, impair concentration, sluggish energy levels, and negatively impact health. Planning meals in advance, selecting snacks and beverages during and after competitions, and eating after competitions all contribute to maintaining physical and mental readiness. Therefore, nutritional attention is a key factor in enabling esports athletes to simultaneously improve their performance and maintain their health.

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DEVELOPMENT OF ESPORTS-RELATED TOURISM ROUTES

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ABSTRACT

This research aims to investigate the feasibility and strategic approaches for developing tourism routes related to esports in Thailand, with a focus on integrating the tourism sector and the rapidly expanding esports industry at both global and ASEAN levels. Esports is no longer viewed solely as a form of entertainment; it has evolved into a professional industry interconnected with technology, media, marketing, and digital culture. This transformation creates new opportunities for designing creative tourism experiences that meet the demands of new-generation travelers. The study will explore the needs, expectations, and behaviors of targeted tourists, along with the perspectives of esports entrepreneurs, event organizers, relevant agencies, and tourism operators. The analysis will focus on identifying both opportunities and challenges in establishing innovative tourism models that incorporate esports activities. These models may include esports event-based tourism, themed travel packages, interactive exhibitions of games and technology, as well as hybrid tourism experiences that integrate esports competitions with local cultural and heritage-based tourism. The expected outcome of this research is to provide practical guidelines for designing tourism routes that enhance the value of Thailand's tourism industry, attract both domestic and international tourists, generate income, and distribute economic benefits to local communities. Moreover, such development will strengthen Thailand's image as a hub for digital tourism and esports in the future, increase its competitiveness in the global tourism market, and establish a foundation for sustainable tourism development in the digital era.

Keywords: Esports, Tourism, Travel routes.

INTRODUCTION

Esports has become a rapidly growing digital industry globally and is recognized as a sport that generates high economic value. Esports competitions cover everything from tournament organization, team management, professional players, to media and related activities. Esports competitions can attract

both online and offline audiences and play a significant role in generating travel to participate in competitions and related events in many countries. Meanwhile, Thailand is one of the most popular destinations for tourists worldwide due to its beautiful and diverse tourist attractions, rich culture and facilities. However, tourism linked to esports competitions has not yet been significantly developed, despite the continuous organization of esports competitions in Thailand, ranging from educational institutions to international competitions, and with a large number of participants.

While esports tourism continues to grow in popularity, there is still a lack of tourism itineraries specifically designed for this group of tourists. Developing esports-related tourism routes is a key approach to responding to the changing landscape of the digital tourism industry. This development also helps diversify tourism and enhance its appeal, supporting local products in each area, and creating new economic opportunities through the linking of esports with tourism. This is crucial for generating revenue and enhancing Thailand's image as a sports and digital tourism hub, thus distributing economic benefits to relevant areas.

Therefore, research on the development of esports-related tourism routes is essential to explore the potential and needs of tourists, as well as identifying appropriate approaches for developing new tourism products and routes. This approach will benefit academics, policy planning, and the future development of Thai tourism.

OBJECTIVES

1. To study the potential and feasibility of developing esports-related tourism routes in Thailand.
2. To analyze factors contributing to success and obstacles to esports tourism route development.
3. To propose guidelines for designing appropriate and practical esports tourism routes.

METHODOLOGY

Tourism Development Concepts

Tourism is another key driver of Thailand's economy. Thailand has historically derives revenue from its diverse natural and cultural resources, attracting a large number of tourists from around the world. However, the continued growth of tourism in the past has led to natural resource degradation. Furthermore, during the COVID-19 pandemic, the number of international tourists has steadily declined. Although this situation has allowed many natural tourist attractions to recover, it also reflects the need for Thailand to adapt its future tourism development approach to be flexible, sustainable, and responsive to the needs of new generations of tourists (Kacha Sothong, **2024**). Meanwhile, esports has become a rapidly growing digital industry globally and is recognized as a modern sport that can...

The article must be divided into chapters. Introduction and conclusion are obligatory. It is recommended to adjust body of the paper to the common organization structure of scientific papers – IMRaD (Introduction, Methods, Results and Discussion).

Creating economic value and attracting a large audience. Esports competitions in many countries have been developed alongside tourism, which has greatly increased the economic value for Thailand. Despite the high potential for both tourism and international esports events, the integration of these two industries is still at an early stage. There has not been a systematic design of tourism routes

directly linked to esports activities, even though new generation tourists, especially Gen Z and Millennials, have a high interest in sports and digital activities.

Esports

Esports refers to competitive video games, similar to sports, requiring players to utilize skills, expertise, training, and strategies similar to other sports. Esports has rapidly grown in popularity, earning it recognition as a professional sport that generates revenue for individuals, teams, and the industry as a whole. Another factor contributing to the industry's continued growth is viewership. Esports competitions, similar to traditional sports, rely on audience support, cheering, and creating a competitive atmosphere (Thorarat Jiranpong, 2018). International esports competitions attract viewers both offline and via online streaming. Key platforms such as Twitch, YouTube Gaming, and Facebook Gaming help expand the audience base. According to a Newzoo report (2025), the global esports audience exceeds 640 million and is expected to continue to grow (Naveen Kumar, 2025), particularly in the Asia-Pacific region, the largest market. This phenomenon demonstrates that esports is not just about playing games, but has become a modern sporting activity with the power to attract viewers and tourists. Many countries have expanded this trend by hosting competitions alongside tourism activities.

Analysis of the Growth of the Tourism Industry in Thailand

Tourism is a service industry with a high growth rate, averaging 3.5–4.5% per year. It plays a crucial role in the Thai economy, both generating foreign currency to offset trade deficits during slowing exports and driving monetary circulation within the domestic economy. Consequently, many countries, including Thailand, are prioritizing the continued development of the tourism industry (Anuphan Sombunwong, Pimpimol Kaewmanee, and Kritawit Atcharyaphanichkul, 2018). Thailand is internationally recognized as a diverse tourist destination that caters to the needs of a wide range of tourist groups. The World Economic Forum (WEF) ranked Thailand 3rd in ASEAN and 34th globally for tourism capacity (World Economic Forum, 2017), demonstrating its high competitiveness. Furthermore, statistics from the Office of Tourism and Sports Economics (2016) show that the number of international tourists visiting Thailand is steadily increasing, making tourism a major industry generating significant revenue for the Thai economy.

Analysis of the Growth of the Esports Business in Thailand

Esports is considered the most exciting digital sports industry in the current era and is gaining traction comparable to traditional sports such as football or basketball. This is evidenced by the steadily increasing prize money of world-class esports competitions, with some events nearly equaling those of major international sporting events (Wicha Khankam and Suphakorn Tan Warawutthichai, 2025). Furthermore, the global esports audience is projected to exceed 600 million by 2025 (Newzoo, 2022), reflecting that esports is not only a recreational activity but also a significant industry impacting the global economy. In Thailand, esports has been recognized by the Ministry of Tourism and Sports as a legally recognized sport, resulting in widespread expansion among professional players, competing teams, event organizers, and general audiences. Key factors contributing to the growth of Thai esports include the development of digital technology, which enhances the gaming experience, and the integration with educational institutions, which have begun offering courses related to games and esports at the university level to create a workforce with skills that meet the needs of the labor market. Furthermore, the public and private sectors play a crucial role in promoting and supporting investment in related businesses, such as organizing national and international esports competitions, brand

sponsorships, and developing new businesses related to gaming and digital content. Meanwhile, traditional businesses such as tourism, hotels, and event organizers can leverage esports competitions as a tool to stimulate economic growth, with examples available both internationally and in Thailand.

The population used in the study was people living or traveling in regions with potential for hosting esports events, such as Bangkok, Chiang Mai, Phuket, and Khon Kaen, as well as locations with large competition venues or convention centers. The sample was selected using purposive sampling and simple random sampling from each target group to obtain diverse data covering all sectors involved in the development of esports tourism routes. The sample consisted of 400 individuals, divided into: Esports players and viewers (30%) (120 individuals), tourists participating in esports events (20%), tourism and MICE operators (20%) (80 individuals), esports organizers and businesses (15%), and relevant government and private agencies (15%) (60 individuals). Research Variables: This research was a survey and developmental study. The details of the variables are as follows:

Independent Variables

Esports Activity Factors (e.g., the attractiveness of the competition and the organization of accompanying activities) Tourism Resource Factors (e.g., tourist attractions, local culture, facilities)

Infrastructure Factors (e.g., transportation systems, technology, competition venues, convention centers) Policy and Support Factors (e.g., promotional measures, government support)

Dependent Variables Formulation and Feasibility of Developing "Esports-Related Tourism Routes" Tourist Intention to Travel Along Esports Tourism Routes

Economic Impact and Tourism Image of the Area

Control Variables: Gender, age, type of stakeholder (tourists, players, organizers, etc.), tourism experience, and esports participation. Statistics Used: Both descriptive and inferential statistics were used for data analysis, as follows:

Descriptive Statistics: Frequency, percentage, mean, and standard deviation were used to describe the general characteristics of the sample and the level of respondents' opinions.

Inferential Statistics T-tests and one-way ANOVA were used to compare the opinions of sample groups with different characteristics. Pearson's Correlation Coefficient was used to study the relationship between various factors and the potential for esports tourism development. Multiple Regression Analysis was used to identify key factors influencing the development of esports tourism routes.

Research Instruments

A clearly structured questionnaire was used, divided into three sections: general information of the respondents, their level of opinion on esports and tourism factors, and their assessment of travel potential and intentions. The questionnaire used a 5-point Likert scale, ranging from "most" to "least." It was examined for content validity by three experts, with an IOC of ≥ 0.67 . Reliability was tested using a Cronbach's Alpha of ≥ 0.80 .

Developing esports tourism routes is a process that integrates stakeholder engagement, experiential tourism design, and digital technology to create new tourism models that cater to the needs

of the new generation, support local economies, and connect with the rapidly growing esports industry, both regionally and globally.

Figure 1. Import factors

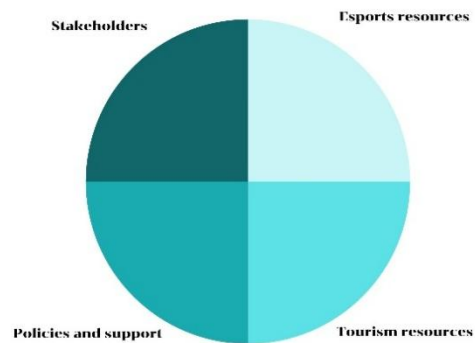


Figure 2. Development process

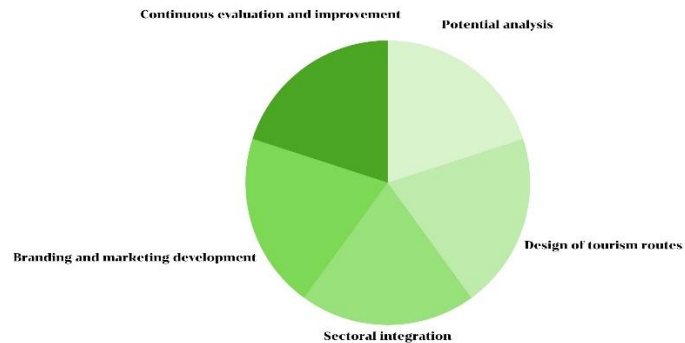
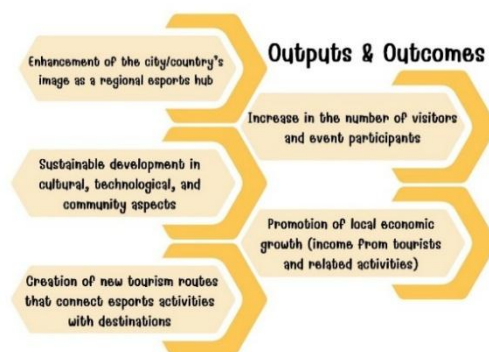


Figure 3. Outputs & Outcomes



CONCLUSION

Clear target groups, variables, and statistical methods are crucial for research on esports tourism route development, as they comprehensively reflect the needs and behaviors of relevant groups, including tourists, players, entrepreneurs, and government agencies. Statistical analysis helps understand the influence of activity, infrastructure, marketing, and experience factors on travel decisions and route attractiveness. This allows for the systematic design of sustainable tourism routes that generate economic value. The tourism and esports industries are key drivers of the national economy. Tourism generates significant revenue from inbound tourist arrivals, while esports is a rapidly growing digital industry that continues to gain popularity both globally and in Thailand. Integrating these two industries represents a new approach that can create added value and expand economic opportunities sustainably. This research aimed to analyze the potential and approaches for developing esports-related tourism routes, such as organizing international esports competitions, developing digital tourist destinations, and creating activities that connect tourism and gaming culture. The results indicate that developing such tourism routes not only generates revenue from tourists and visitors, but also contributes to re-establishing Thailand's image as an esports hub in the ASEAN region. Developing the intersection of tourism and esports is a highly potential approach, creating differentiation and competitive advantage in the global market. It also addresses the needs of a new generation of tourists interested in technology and digital content. This will lead to sustainable economic, social and tourism development in Thailand in the future.

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A LITERATURE REVIEW FOR DEVELOPING A CONCEPTUAL FRAMEWORK TO STUDY THE STRUCTURAL RELATIONSHIPS AMONG ANTECEDENT FACTORS INFLUENCING THE ORGANIZATIONAL PERFORMANCE OF THE SEAFOOD INDUSTRY IN THE COUNTRY

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ABSTRACT

This study aims to synthesize academic literature to develop a conceptual framework for examining the structural relationships among antecedent factors influencing the performance of seafood processing enterprises in Thailand. The review focuses on the strategic roles of leadership, market orientation, organizational agility, knowledge management, and dynamic capabilities. Drawing from recent empirical and theoretical studies published between 2020 and 2024, the study identifies that leadership exerts a direct influence on organizational agility, knowledge management, and performance. Similarly, market orientation enhances agility and performance by enabling firms to respond swiftly to market changes. Knowledge management is found to play a mediating role between strategic inputs and dynamic capabilities, while organizational agility serves as a key enabler in transforming internal capabilities into operational efficiency. Based on the literature, eleven research hypotheses were formulated to capture the causal relationships among the core variables. These insights contribute to the development of a structural conceptual model, which may be used as a foundation for future empirical studies using structural equation modeling (SEM). The findings are expected to support strategic planning and performance improvement within Thailand's seafood industry and can be extended to similar sectors operating under dynamic and competitive environments.

Keywords: Thailand's seafood processing industry, Leadership, Market Orientation, Organization Agility, Knowledge Management, Organization Capability, Organization Performance

INTRODUCTION

In the present day, the seafood industry is one of the key sectors contributing significantly to food security and international trade. The primary sources of seafood products come from both capture fisheries and aquaculture. In 2020, global production reached a total of 214 million tons, reflecting the continuously increasing demand for aquatic animal consumption. This is especially evident in the Asia-

Pacific region, which holds strategic importance in terms of marine resources and possesses advantages in raw material availability, labor, and infrastructure that support processing and export activities. As a result, the region has become a global hub for the production and export of processed seafood.

Recent data reveals that the Asia-Pacific region accounts for more than half of the world's total aquatic animal production both from capture and aquaculture. Notably, aquaculture alone contributes over 80% of global aquaculture production. This trend is closely linked to the decline in wild fish stocks due to overfishing, a 3 % annual increase in consumption, and the impacts of global warming on marine ecosystems. These factors have made aquaculture a vital alternative in meeting the rising demand of the global market.

In terms of trade, countries in the Asia-Pacific region play a dominant role as leading exporters of processed seafood, with an export value exceeding USD 60 billion, accounting for approximately 36.6 % of the global value of processed seafood exports. China leads in exports, followed by Norway, Russia, and Mozambique. Thailand also ranks among the top exporters in both volume and value. However, despite the region's high potential for production and export, the seafood industry continues to face numerous challenges, including the degradation of natural resources, environmental pressures, and intense global market competition.

Given these circumstances, in-depth study and analysis of the seafood production supply chain in the Asia-Pacific region as well as the roles of key exporting countries are crucial for policy formulation, strategic planning, and the promotion of sustainability within the seafood industry at both regional and global levels. This is particularly important in the context of rising seafood demand and the ongoing depletion of marine resources.

In Thailand, the seafood industry plays an especially significant role in the national economy, particularly in the export of agricultural and processed food products. According to data from 2021, Thailand ranked th⁸ globally in terms of processed seafood export volume and th¹⁴ in export value, accounting for 3.3% and 3.0% of global totals respectively (Suppakorn Kornboontritos,2566). This reflects Thailand's competitiveness as a major producer and exporter in the global market. The country benefits from strengths in seafood processing, including a skilled workforce, extensive industry experience, and supportive logistics and supply chain infrastructure.

Nonetheless, the industry still faces numerous challenges, such as changes in marine ecosystems, declining natural resources due to overfishing, and stiff competition from other major producers like China and Vietnam, which enjoy lower production costs and higher capacity. Moreover, Thailand is increasingly dependent on importing certain aquatic species as raw materials for processing, highlighting domestic resource limitations. Additionally, there is growing pressure from international trade partners regarding food safety standards, labor welfare, and sustainable fishing practices. These are critical issues that Thailand's seafood industry must address to maintain long-term competitiveness (Suppakorn Kornboontritos,2566).

Therefore, examining the trends in seafood production and exports in Thailand within the context of changing economic conditions, environmental challenges, and evolving international regulations is essential for setting policy directions and strategies for sustainable industry development. This aligns with the Sustainable Development Goals (SDGs) and the aspiration to become a responsible seafood producer that is socially and environmentally accountable on a global scale. Consequently, this study seeks to examine and synthesize the underlying factors influencing the operational efficiency of

seafood businesses in Thailand, in order to contribute constructively to national development at a macro level

OBJECTIVE

1. To review relevant literature on the factors influencing the operational efficiency of seafood industry enterprises in Thailand by synthesizing variables from existing studies. This includes identifying and analyzing factors or variables that are expected to be related to, or have an impact on, the improvement of operational efficiency in Thai seafood industry enterprises.
2. To develop a conceptual causal framework for a predictive model that can assess the level of operational efficiency of enterprises within the seafood industry in Thailand.

METHODOLOGY

The population in this study consists of research articles, theses, academic documents, and relevant literature related to leadership, market orientation, organizational agility, internal knowledge management, and organizational capabilities, including literature concerning the organizational efficiency of seafood processing industry enterprises in Thailand. All selected materials are complete documents published between the years 2020 and 2024 (B.E. 2563 to 2567) and are classified as secondary data sources. The researcher has applied the source selection criteria recommended by Scott (1990), which emphasize the importance of authenticity, credibility, representativeness, and meaning. These criteria ensure that all selected sources are genuine, reliable, and capable of accurately representing the broader academic discourse, while also being clear in content and context. Moreover, all documents must be verifiable through well-recognized academic journal databases to ensure academic integrity and quality in the literature review process. The author conducted the literature review and developed the research article independently, with the assistance of generative AI used solely for translating the content from Thai to English.

Literature Review

Leadership is a critical factor that exerts both direct and indirect influences on organizational agility, particularly in an era characterized by rapid change. Studies by Ramadan et al. (2023) and Cui (2024) indicate that leaders with a digital vision are capable of driving transformation and fostering a strong learning culture, while Khairy et al. (2023) demonstrate that transactional leadership enhances trust and organizational ambidexterity, thereby increasing flexibility in responding to dynamic situations. Vaszkun and Sziráki (2023) further emphasize that flexible organizational structures and decentralization enable leaders to cultivate cultural agility more effectively. Therefore, the following hypothesis is proposed:

H1: Leadership has a direct effect on organizational agility.

Knowledge-oriented leadership has a direct impact on the development of effective knowledge management systems by encouraging knowledge sharing, creating motivation, and formulating organizational knowledge strategies (Latif et al., 2021; Rezaei et al., 2021). Transformational leadership also influences behaviors related to the utilization and creation of new knowledge to drive innovation (Saad Alessa, 2021; Lei et al., 2021). Accordingly, the following hypothesis is proposed: **H2: Leadership has a direct effect on organizational knowledge management.**

Leadership can generate positive organizational outcomes through mechanisms such as human capital development, organizational commitment, and job satisfaction (Rahmatullah et al., 2022; Hilton et al., 2023). Leaders who encourage participation strengthen responsibility and motivation, leading to improvements in performance across multiple dimensions. Thus, the following hypothesis is proposed: **H3: Leadership has a direct effect on organizational performance.**

Market orientation enables organizations to perceive and respond rapidly to customer needs, thereby directly enhancing agility in operational processes and strategic decision-making (Suprapti & Suparmi, 2022; Khan et al., 2025). In-depth market data analysis and the use of digital technologies further strengthen adaptive capabilities in the digital era. Therefore, the following hypothesis is proposed: **H4: Market orientation has a direct effect on organizational agility.**

A strong market orientation facilitates the collection, analysis, and transformation of customer information into actionable knowledge for innovation and strategic development (Chaithanapat et al., 2022; Murningsih et al., 2025). Knowledge management thus serves as a mechanism linking market information with organizational outcomes. Accordingly, the following hypothesis is proposed: **H5: Market orientation has a direct effect on organizational knowledge management.**

Prior research confirms that market orientation positively affects organizational performance through increased customer satisfaction, effective use of market information, and alignment of resource management with organizational strategy (Ngo, 2021; Hernández- Linares et al., 2021). Therefore, the following hypothesis is proposed: **H6: Market orientation has a direct effect on organizational performance.**

Organizational agility is directly associated with dynamic capabilities, as agile organizations are better able to sense and seize emerging market opportunities (Li, 2022; Satar et al., 2023). Hence, the following hypothesis is proposed: **H7: Organizational agility has a direct effect on dynamic capabilities.**

Agility functions as a critical mechanism that enables organizations to respond effectively to change, enhance competitiveness, and sustain performance under uncertain conditions (Wanasida et al., 2021; Khalil et al., 2023). Therefore, the following hypothesis is proposed: **H8: Organizational agility has a direct effect on organizational performance.**

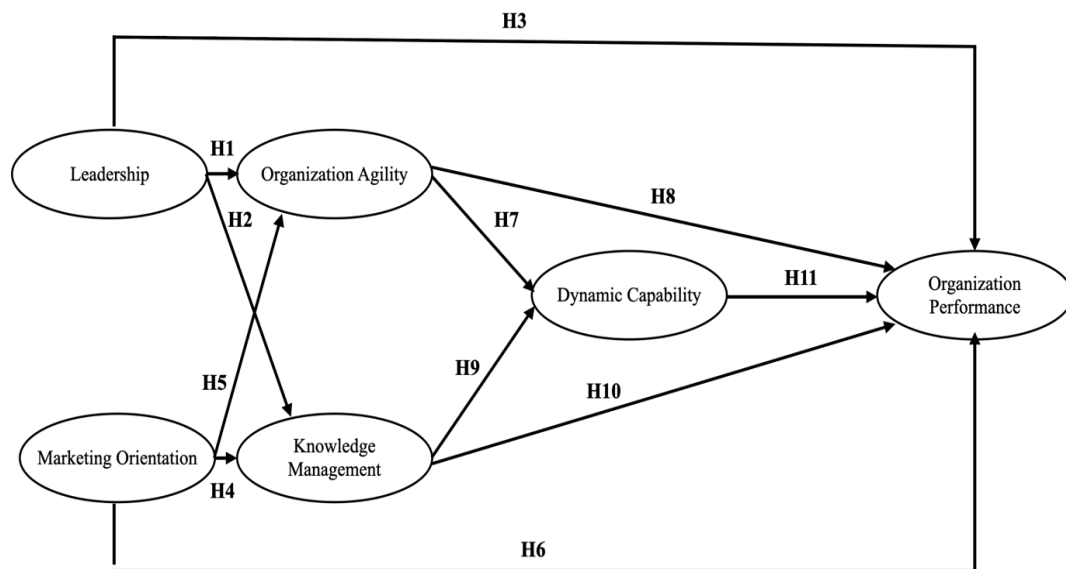
High- quality knowledge management supports the continuous creation and reconfiguration of organizational capabilities and plays a central role throughout the development of dynamic capabilities (Nabi et al., 2023; Cyfert et al., 2021). Accordingly, the following hypothesis is proposed: **H9: Knowledge management has a direct effect on dynamic capabilities.**

Effective knowledge management enhances innovation, managerial efficiency, and sustainability, particularly when integrated with human capital and digital technologies (Espita & Guhao, 2022; Cabrilo et al., 2024). Thus, the following hypothesis is proposed: **H10: Knowledge management has a direct effect on organizational performance.**

Dynamic capabilities exert a direct influence on innovation, strategic adaptation, and organizational effectiveness, especially when supported by technological and knowledge-based resources (Li et al., 2022; Forés et al., 2023). Consequently, the following hypothesis is proposed: **H11: Dynamic capabilities have a direct effect on organizational performance.**

RESULTS

Based on the review of relevant literature, the researcher was able to develop hypotheses that form the basis of a structural conceptual framework, as illustrated in Figure 1.



CONCLUSION AND FUTURE WORK

Based on the literature review, the researcher was able to synthesize the relationships among various antecedent factors that influence the performance of enterprises within Thailand's seafood processing industry. Through an in-depth review of relevant academic works, several key variables were identified that are believed to be associated with, or exert a direct influence on, organizational performance in this sector. This led to the development of a conceptual framework, as illustrated in Figure 1, from which eleven research hypotheses were formulated. These hypotheses include the effects of leadership on organizational agility, knowledge management, and organizational performance; the influence of market orientation on organizational agility, knowledge management, and performance; the relationship between organizational agility and dynamic capabilities as well as performance; the impact of knowledge management on dynamic capabilities and performance; and finally, the influence of dynamic capabilities on organizational performance.

This conceptual framework can be further utilized as a foundation for developing data collection instruments and for testing the structural relationships among variables through structural equation modeling. Such analysis would allow for the evaluation of the model's goodness of fit with empirical data. The outcomes could be used to forecast the influence of these variables and may serve as a valuable reference in shaping macro-level and organizational strategic policies, particularly in the context of Rajabhat Universities and other relevant institutions.

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THE ROLE OF DIGITAL AGILITY AND HUMAN-AI COLLABORATION IN ENHANCING EMPLOYEE CREATIVITY IN DIGITAL ORGANIZATIONS

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ABSTRACT

Digital transformation has fundamentally reshaped organizational environments by integrating digital technologies and artificial intelligence (AI) into core business processes. As organizations increasingly rely on algorithmic systems, automation tools, and digital platforms, employee creativity has become a critical driver of sustainable competitive advantage. While technology enables efficiency and data-driven decision-making, innovation ultimately depends on human adaptability and collaborative capability. However, existing research often treats technological capability and human creativity as separate constructs, leaving limited understanding of how digital agility and human-AI collaboration jointly influence employee creativity.

This conceptual paper explores how digital agility and human-AI collaboration contribute to employee creativity in digital organizations. Drawing upon dynamic capability theory, the Technology Acceptance Model (TAM), creativity theory, and digital innovation literature, the study develops a theoretical framework explaining how adaptive digital competencies and AI augmentation mechanisms foster innovative behavior. Digital agility enhances employees' capacity to respond flexibly to technological change, while human-AI collaboration strengthens cognitive augmentation and problem-solving performance.

The paper proposes theoretical propositions and discusses managerial implications for organizations seeking to leverage AI without undermining intrinsic motivation. By integrating dynamic capability and augmentation perspectives, this study contributes to digital transformation research and offers directions for future empirical investigation.

Keywords: Digital Agility, Human-AI Collaboration, Employee Creativity, Digital Transformation, Innovation

1.1 Digital Transformation and Organizational Change

Digital transformation refers to the strategic integration of digital technologies into organizational structures and processes to create value (Vial, 2019). It involves not only technological investment but also cultural change and capability development. Westerman, Bonnet, and McAfee (2014) argue that digitally mature organizations outperform competitors because they align digital initiatives with leadership and workforce capability.

Kane et al. (2015) further emphasize that digital transformation success depends more on organizational mindset and employee adaptability than on technological sophistication alone. Therefore, digital transformation should be conceptualized as a socio-technical system in which human capability plays a central role.

1.2 Digital Agility and Dynamic Capability Theory

Dynamic capability theory (Teece, Pisano & Shuen, 1997) suggests that organizations achieve competitive advantage through sensing, seizing, and transforming opportunities in dynamic environments. At the employee level, digital agility reflects the individual capacity to adapt quickly to digital tools, platforms, and AI systems.

Digital agility includes technological learning ability, experimentation behavior, openness to innovation, and rapid skill updating. Bharadwaj (2000) notes that IT capability contributes to performance when combined with strategic flexibility. Similarly, Nambisan et al. (2017) describe digital innovation as a recombination process enabled by digital technologies.

Employees with high digital agility are more likely to experiment with AI analytics, cloud platforms, and collaborative technologies. This experimentation enhances cognitive flexibility, a core component of creativity (Amabile, 1996).

1.3 Human-AI Collaboration and Augmentation

AI adoption has shifted organizational focus from automation to augmentation. Huang and Rust (2018) propose that AI performs mechanical and analytical tasks efficiently, while humans contribute emotional and creative intelligence.

Davenport and Ronanki (2018) argue that AI systems create value when supporting decision-making rather than replacing employees. Brynjolfsson and McAfee (2017) describe complementarity between human judgment and machine intelligence.

However, excessive AI monitoring may increase technostress (Tarafdar et al., 2015), reducing intrinsic motivation and creativity. Therefore, balanced human-AI collaboration is essential for sustaining innovative behavior.

1.4 Employee Creativity

Employee creativity refers to the generation of novel and useful ideas (Oldham & Cummings, 1996). Amabile (1996) emphasizes that creativity arises from domain expertise, creativity-relevant processes, and intrinsic motivation.

Digital environments provide broader access to knowledge and cross-functional collaboration, which can stimulate idea recombination. Zhang and Bartol (2010) show that empowering leadership enhances creative performance by increasing psychological empowerment.

Thus, digital agility and AI collaboration may jointly enhance employee creativity when autonomy and support are maintained.

THEORETICAL FRAMEWORK

This study proposes an integrated framework linking digital agility and human-AI collaboration to employee creativity.

Digital agility functions as an individual-level dynamic capability that enables employees to adapt to technological change. Human-AI collaboration functions as a technological augmentation mechanism that enhances analytical insight and cognitive processing.

Together, they create a synergistic environment for innovation.

PROPOSITIONS

Proposition 1: Digital agility positively influences employee creativity.

Proposition 2: Human-AI collaboration positively influences employee creativity.

Proposition 3: Digital agility strengthens the positive relationship between human-AI collaboration and employee creativity.

Proposition 4: Organizational support moderates the relationship between digital agility and creativity.

MANAGERIAL IMPLICATIONS

Organizations should invest in digital literacy training to enhance agility. Continuous learning programs improve employees' confidence in using AI systems.

Managers should position AI as a collaborative partner rather than a replacement tool to reduce anxiety and technostress.

Leadership should encourage experimentation and autonomy, fostering intrinsic motivation.

Finally, digital transformation strategies must integrate human-centered design principles to balance efficiency with creativity.

FUTURE RESEARCH DIRECTIONS

Future research should empirically test the proposed propositions using quantitative methods. Cross-cultural comparisons may reveal differences in AI acceptance and digital agility.

Longitudinal studies could examine how digital agility develops over time. Researchers may also explore mediating variables such as trust in AI and psychological empowerment.

CONCLUSION AND FUTURE WORK

This conceptual paper explains how digital agility and human-AI collaboration enhance employee creativity in digital organizations. Technology alone does not generate innovation; rather, adaptive human capability and balanced AI collaboration determine creative outcomes.

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