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Foreword

This issue has a balanced coverage of both qualitative and quantitative methods: On the qualitative side, there is a review of the theoretical foundation of digital leadership, policy analysis on government budget allocation, and education strategy. On the quantitative side, structural equation modeling and exploratory factor analysis are applied to Green Human Resource Management (GHRM) practices, trust formation, and students' perceived learning outcomes.

Hongmei Gong and Guowei Hua investigate core conceptual dimensions of digital leadership and how the concept has evolved and been constructed in the literature. They identify its precedents and outcomes, as well as the prevailing empirical approaches and measurement tools used.

Waroonporn Suwanthanin and Somboon Sirisunhirun inspect budget allocation strategies for fiscal rebalancing and peace building in Thailand's Southern Border Provinces, employing a qualitative policy analysis based on government budget reports and conflict incidence data.

Fei Lu studies the influence of Green Human Resource Management (GHRM) practices on employees' environmentally responsible behaviors within Higher Education Institutions (HEIs) in China, using structural equation modeling.

Drawing on Social Cognitive Theory (SCT), Tanaporn Phurinan and Akaraphun Ratasuk examine the psychological antecedents of trust formation in multicultural Work-based Education (WBE) programs in Bangkok, with least squares structural equation modeling (PLS-SEM).

Saran Phinijphara and Kritsana Lakkhongkha explore the key components influencing students' perceived learning outcomes and satisfaction of a Thai university, using exploratory factor analysis (EFA), with a discussion on its implications on the ASEAN Qualifications Reference Framework (AQRF), a regional mechanism emphasizing the assessment of learning outcomes.

Krissana Bulan and Naruemol Pechrasuwan propose a grand strategy for higher education, reimagining universities in Thailand as the nation's brain in the ASEAN context, applying the Nation Brain System Model in higher education governance.

Prof. Dr. Tang Zhimin
Editor-in-Chief

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A Critical Review of Digital Leadership Research

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Abstract

As an emerging field of research, the concept of digital leadership remains relatively ambiguous. A review of the relevant literature reveals that both domestic and international scholars primarily draw on theories from management and social psychology—particularly leadership theory, organizational change theory, and complex adaptive systems theory—as the theoretical foundation for exploring digital leadership. Current research has mainly focused on defining the conceptual connotation of digital leadership and constructing theoretical models, while systematic investigations into its structural dimensions and the development of reliable measurement instruments remain limited.

Against the backdrop of the digital economy, enterprise performance evaluation is becoming increasingly multidimensional. With the deepening of digital transformation, organizations are placing greater reliance on high-performing employees to maintain a competitive advantage. Given that different leadership styles exert varying effects on employee innovation and performance, digital leadership—characterized by vision articulation, technological proficiency, and transformation facilitation—has emerged as a pivotal leadership style for navigating change and enhancing performance in the digital era.

Therefore, it is of both theoretical and practical significance to examine the mechanisms through which digital leadership influences employee work performance. This paper provides a comprehensive review of existing research on digital leadership and outlines potential directions for future inquiry.

Keywords: The Era of Digital Intelligence, Digital Leadership, Digital-era Leader Resonant

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Introduction

As Charles Dickens famously wrote in a tale of two cities, “It was the best of times, it was the worst of times.” This line vividly captures the contrasting mindsets individuals may adopt when confronted with a highly uncertain external environment—either embracing change with optimism or hesitating in fear and confusion. For those with the courage to face uncertainty, such times are rich with opportunity; for those who resist transformation, they represent anxiety and loss.

Today, the wheel of history is rapidly turning toward the digital era, characterized by the sweeping emergence of artificial intelligence, big data, cloud computing, and the Internet of Things. For Chinese organizational leaders, the pressing question is how to navigate the profound transformations brought about by digital technologies and coexist with the uncertainty. As with an egg, if it is broken from the outside, it becomes food; if it breaks from within, it gives birth to new life and boundless hope. This metaphor aptly illustrates the internal awakening and proactive transformation that leaders require in the age of digital disruption.

Research Objectives

1. To define the conceptual connotation of digital leadership and clarify its theoretical boundaries, distinguishing it from traditional leadership models.
2. To review the theoretical foundations and current state of research on digital leadership.
3. To systematically analyze the existing literature on digital leadership, with particular focus on how digital leaders, in the context of digital transformation, influence employee performance through vision articulation, technological empowerment, and transformational drive.

Research Problem

1. What are the core conceptual dimensions of digital leadership, and how has the concept evolved and been constructed in the literature?
2. In what ways does digital leadership differ from traditional leadership paradigms?
3. What are the identified antecedents and outcomes of digital leadership in existing research? What is the current status of empirical investigations in this area?
4. How is digital leadership measured, and what are the prevailing empirical approaches and measurement tools used in contemporary research?

Literature Review

Formation of the Concept of Digital Leadership

The advancement of technology has never ceased. Since the steam era, leaders have undergone a comprehensive “evolution” to adapt to technological changes. With the increasing complexity of production factors and diversity of internal interconnections, traditional “simple management” can no longer meet societal development needs, and “complex management” has become increasingly crucial. Managers are no longer able to address managerial issues with traditional methods; instead, they must adjust their management approaches and adopt new leadership styles to keep pace with societal progress. The success or failure of enterprises largely depends on whether leaders can accurately recognize the importance and urgency of digitalization and possess the capability to lead digital and business transformation. Against

this backdrop, digital leadership has increasingly attracted attention from both academia and practice.

In English, the term leadership refers both to leadership as a capability (leadership talent) and to the leadership process (leadership behavior). Since Avolio first introduced the concept of E-Leadership, scholars have yet to reach a consensus on its precise definition. Currently, although a unified definition is still lacking in academic circles, researchers have explored digital leadership from various perspectives, primarily focusing on behaviors, processes, and capabilities.

Behavioral Perspective:

One view considers digital leadership as the key actions undertaken within enterprises and their business ecosystems to implement digital strategies. El Sawy et al. (2016) highlighted this viewpoint. Originating from American scholar Avolio et al. (2000), the concept of “E-Leadership” was first proposed to define the new form of leadership arising from adapting to advanced information technologies. They analyzed the relationship between leadership and advanced information technologies, defining

Electronic leadership as a social influence process mediated by Advanced Information Technology (AIT) that affects individuals, teams, and/or organizations attitudes, emotions, cognition, behaviors, and/or performance. Avolio and Kahai (2003) further deepened the study of E-Leadership, emphasizing its existence within IT-mediated work environments, where leaders assign tasks and organize workflows via information technology and utilize information as a resource to support organizational decision-making. In 2014, Avolio and colleagues updated the concept, defining E-Leadership as social influence behaviors embedded in both proximal and distal contexts, mediated by AIT, capable of generating changes in attitudes, emotions, cognition, behaviors, and performance.

Capability Perspective:

Another perspective regards digital leadership as a critical leadership competency possessed by corporate leaders. Arham et al. (2024) defined digital leadership as a leadership approach combining digital capabilities, business acumen, and soft skills to achieve digital transformation objectives. Sandel (2013) described digital leadership as a set of capabilities aimed at transforming environments through the optimization of technological and digital skills, with digital characteristics including creativity, motivation, credibility, broad knowledge, collaboration, interaction, and trust in subordinates. Oberer et al. (2018) argued that a leader’s personal competencies, mindset, and ability to apply new methods and tools constitute key elements of digital leadership. They described digital leadership as a rapid, cross-hierarchical, team-oriented, and collaborative organizational leadership style focused on innovation. Larjovuori et al. (2016) defined digital leadership as the leader’s ability to create a clear and meaningful vision for the digitalization process and to execute strategies to realize that vision. He stressed that leaders must not only guide organizational progress but also shoulder managerial responsibilities, balancing people management with the control of tangible and intangible resources, flexibly switching between leadership and management functions. Guangming (2019) explained digital leadership from a strategic level, considering it a new leadership style where managers, after setting strategic goals, adopt inclusive decision-making and strategy formulation approaches, ensuring full stakeholder involvement in co-creation, while delegating authority to guarantee smooth strategy implementation. Damayanti et al. (2021). Defined digital leadership as the leader’s capability

to establish direction, influence others, and drive sustainable change through information acquisition, while building relationships to anticipate and guide the transformations necessary for future organizational success. Suryana (2023) viewed digital leadership as the innovative capacity developed by leaders during digitalization, enabling enterprises to gain competitive advantages. Although not explicitly using the term “digital leadership,” Duan and Zhu (2020) contributed relevant insights by defining “leadership in the digital era” as the ability of leaders to strategically leverage digital assets and lead digital transformation efforts to enhance and sustain competitive advantage in digital environments. However, existing research still lacks sufficient exploration of how digital leadership empowers enterprises and employees and the mechanisms through which it drives deep organizational transformation.

Process Perspective:

Wen and Wenlong (2024) contend that digital leadership is a change-oriented process in complex digital contexts, where by leaders exercise control over digital environments, utilize digital tools for communication and management to generate adaptability, and engage in reciprocal influence with followers and their teams. Roman et al. (2018) defined “E-Leadership” as “a set of technology-mediated social influence processes aimed at changing attitudes, emotions, cognition, behaviors, and performance within organizations.” Roman et al. (2019). Further argued that digital leadership represents a social influence process requiring leaders to master and apply skills in motivation, communication, and management, while being able to adopt and integrate advanced information technologies in response to environmental changes. Yanping and Li (2020) noted that digital technology propels society into a new stage and, through grounded theory analysis, explored the capability and behavioral elements of digital leadership, elucidating its deeper connotations. Xie et al. (2023), investigating how digital leadership drives organizational innovation under the digital economy context, emphasized that digital leadership should be regarded as a management process. This process demands that organizational leaders not only possess the ability to create clear and meaningful visions but also encourage proactive thinking and active participation among organizational members, thereby ensuring effective implementation of digital transformation strategies. Men (2020) suggested that within the digital context, the term “E-Leadership” can continue to be used as the English equivalent for digital leadership. He argued that digital leadership should not be viewed in isolation as merely leadership or leadership processes, but rather as an organic integration of leadership and its process of influence. He defined digital leadership as “the capability and process by which individuals, groups, and organizations, through digital technologies, undergo changes in attitudes, emotions, cognition, behaviors, and performance” Men (2020), and called for more systematic integration of emerging leadership research with the context of digital transformation.

In recent years, as the background of digital transformation has become clearer, more scholars have transitioned from studying “E-Leadership” to “Digital Leadership,” emphasizing the digital technology context. Although terms such as “digitalized leadership,” “digital leadership,” and “digital leadership capability” appear in Chinese literature, the English terminology converges on “Digital Leadership.” Variations in translation have led to differences in the Chinese terminology.

In summary, found that the digital leadership field grows at an annual rate of 15.09%, with an average citation count of 21.48 per article. Hot topics include “performance management,” “transformation,” and “innovation.” Digital leadership is a leadership approach that leverages technological mediation, resource integration, empowerment, and collaboration to drive

organizational digital transformation. As a novel leadership paradigm, digital leadership has garnered broad academic attention in recent years. Existing research mainly explores its connotations and mechanisms from three perspectives: Behavior, capability, and process. The behavioral perspective focuses on leaders' specific management practices in digital contexts; the capability perspective emphasizes leaders' technological literacy and strategic thinking in digital transformation; and the process perspective highlights how digital leadership dynamically influences organizational and employee behaviors through interactive mechanisms.

To better articulate the concept of digital leadership, this study systematically reviews key representative viewpoints, as summarized in Table 1

Table 1 A Systematic Review Table of Digital Leadership Research

Perspective	Author(S) & Year	Concept Definition
Behavioral Perspective	Roman et al. (2019)	Digital leadership is a process of social influence that is manifested not only in a leader's communication, motivation, and managerial characteristics but also in their capacity for insight into, understanding of, and integration with the information technology environment.
	Avolio (2000)	Defined as a social influence process mediated by Advanced Information Technology (AIT), affecting attitudes, emotions, cognition, behaviors, and performance at individual, team, and organizational levels.
	Avoli & Kahai (2003)	E-Leadership exists in IT-mediated work environments, assigning tasks and organizing workflows via technology, using information as a resource to support organizational decision-making.
Capability- Based Perspective	Arham & Muenjohn (2024)	Leadership that integrates professional skills, abilities, and digital competencies to realize digital transformation goals.
	Suryana (2023)	Digital leadership is the capacity to foster innovation throughout the digitalization process to secure a competitive advantage.
	Bell & Reed (2022)	Leaders set strategic goals through inclusive decision-making and stakeholder co-creation, enabling smooth strategy implementation via empowerment.
	Larjovuor et al. (2016)	The ability to create a clear and meaningful vision for digitalization and execute strategies to achieve it, balancing leadership and management roles.
	Damayant & Mirfani (2021)	Leaders establish direction, influence others, and drive sustainable change through information acquisition, fostering relationships to guide future success.

Table 1 A Systematic Review Table of Digital Leadership Research (Con.)

Perspective	Author(S) & Year	Concept Definition
Capability- Based Perspective	Duan & Zhu (2020)	Digital era leadership involves strategically utilizing digital assets and leading digital transformation to maintain a sustainable competitive advantage.
	Wen & Wenlong (2024)	The ability to use data science technologies to lead organizations towards digital transformation and sustained growth.
	Roman et al. (2018)	It signifies a social-influence process that demands leaders master and apply skills in motivation, communication, and management, while also integrating cutting-edge information technologies in response to evolving environmental needs.
Process Perspective	Men (2020)	The capacity and process through which digital technologies are leveraged to induce changes in the attitudes, emotions, cognitions, behaviors, and performance of individuals, groups, and organizations.
	Wang et al. (2024)	It is a process, unfolding within complex digitalized contexts, in which leaders—oriented toward transformation—exert communicative and managerial influence through the strategic command of the digital environment and the deployment of digital tools, thereby fostering adaptability and engaging in reciprocal influence with followers and their teams.

Source: Compiled by the author based on the literature review.

Comparative Analysis of Digital Leadership and Traditional Leadership

Digital leadership emphasizes establishing an egalitarian and collaborative relationship between leaders and employees, focusing on stimulating employees' autonomy and innovation capabilities, and promoting employee-driven innovation rather than merely relying on top-down directive leadership. Unlike transformational leadership's top-down approach, digital leadership places greater emphasis on supporting employees in meeting the agility, openness, and collaboration demands characteristic of the digital era. Compared to charismatic leadership, digital leadership highlights inclusiveness and empowerment, fostering employees' self-management and creativity. Similar to empowering leadership, it seeks to stimulate employees' intrinsic motivation, but with a stronger focus on innovation, cross-boundary collaboration, and managing uncertainty within digital environments.

Amid the current wave of digital transformation, enterprises' management models and leadership approaches are undergoing profound changes. While traditional leadership theories—such as transformational, transactional, and empowering leadership—remain instructive, enterprises operating in digital contexts require leadership that better adapts to technology-driven change. The primary reasons for selecting digital leadership as the research focus are as follows:

The Specificity of the Digital Environment: Traditional leadership theories mainly focus on structured internal organizational management, whereas digital leadership emphasizes capabilities such as technology-driven decision-making, data-enabled management, remote collaboration, and agile innovation. Leaders need to possess digital mindsets, data analytical skills, and agile responsiveness to navigate rapidly evolving market conditions.

Limitations of Existing Research: Traditional leadership studies have primarily explored the effects of leaders on organizational performance and employee behaviors, with relatively limited systematic investigation into leadership characteristics in digital contexts. Recent research has begun to focus on digital leadership, with ongoing refinement of measurement scales and conceptual frameworks, thereby providing fertile ground for innovation.

Practical Demand for Digital Leadership: During digital transformation, enterprises require leaders capable of driving organizational change through competencies such as digital strategic thinking, technology-driven decision-making, and cross-departmental collaboration. These capabilities differ significantly from those emphasized in traditional leadership. Many digital transformation failures have been attributed to leaders' lack of digital leadership capacity, underscoring the concept's strong practical relevance.

Dimensions and Measurement of Digital Leadership

In the context of the surging wave of digital transformation, a key challenge for the new generation of leaders is how to cultivate leadership that aligns with the evolving demands of the digital era. Existing research generally categorizes the measurement of digital leadership into two approaches.

The first is direct measurement. This method typically draws upon the analysis of the characteristics of digital leadership, describing it across multiple dimensions. Zhu (2015) proposed five key traits of digital leaders: Thought leadership, innovation leadership, global vision, exploration-oriented leadership, and deep leadership, each of which she elaborated in detail.

The second is indirect measurement. For example, Wang et al. (2024) employed text mining techniques in their study. One stream of this approach investigates whether corporate leaders possess digital or IT-related backgrounds and experiences, as well as the extent of their decision-making authority. This includes reviewing annual reports and executive résumés of listed companies to identify leaders likely responsible for digital initiatives—such as the presence of Chief Information Officers (CIOs), Chief Digital Officers (CDOs), heads of information centers, or IT department directors. Another stream measures digital leadership by the proportion of leaders with digital or IT backgrounds. Similarly, Sebastian et al. (2022), in examining the relationship between executives' digital attributes and corporate digital innovation, evaluated the proportion of Top Management Team (TMT) members whose professional backgrounds reflected relevant digital technology experience, thereby assessing the TMT's digital knowledge.

At present, research on digital leadership remains in an exploratory phase, particularly in terms of developing structured dimensional frameworks and validated measurement scales. For instance, Wen and Wenlong (2024) examined the essence, components, and emergence mechanism of digital leadership based on Complex Adaptive System (CAS) theory, but did not propose a corresponding scale. Xie (2023) adopted a six-item scale developed by Oktaysoy and Kaygin (2022) to investigate the relationship between digital leadership and organizational innovation, reporting a Cronbach's alpha of 0.811. However, the items were inductively derived from literature rather than developed through rigorous psychometric procedures.

Other existing scales also exhibit limitations. Claassen and Broding (2021) developed a measurement tool restricted to the public administration sector, limiting its generalizability. Westerman et al. (2012) proposed a digital leadership model encompassing leaders' required attitudes, competencies, behaviors, and their ability to drive digital transformation, emphasizing digital self-transformation, though no concrete scale was developed. Yanping and Li (2020) constructed five dimensions of corporate digital leadership based on grounded theory, but did not formulate a measurement scale suitable for empirical studies. Men (2020), from the perspective of Digital China initiatives, proposed six dimensions of digital leadership focusing on government officials, whose applicability to corporate settings is limited, and likewise did not produce a scale.

A Systematic Review of Digital Leadership Research: A Dual-Level Perspective

Following a comprehensive analysis of the literature on digital leadership, it has been observed that existing academic studies primarily explore this concept from two major perspectives: The individual level (including leaders and followers) and the organizational level (such as teams and the organization as a whole).

1. Studies on Organizational-Level Impacts

These studies mainly focus on the macro-level impacts of digital leadership, such as its effects on organizational innovation, performance, dynamic alliances, virtual teams, and organizational resilience. For example, an empirical study on equipment manufacturing firms, found that digital leadership positively affects both performance and innovation. Wasono and Furinto (2018) revealed that enterprises can enhance their sustainable competitive advantage by strengthening digital leadership and innovation management, with digital leadership playing a critical role in driving innovation. examined how digital leadership influences digital transformation. Based on resource orchestration theory and dynamic capabilities theory, they proposed a path model linking “digital leadership–digital-oriented strategic renewal–digital transformation,” and investigated the boundary role of organizational resilience.

In a multiple-case study of ten firms combined with empirical data from 117 firms, Benitez and Mi (2024) demonstrated that digital leadership enhances innovation performance through digital platforms. Similarly, the impact of digital leadership on organizational innovation has also garnered attention. Xie et al. (2023) investigated the roles of digital platform capability and environmental competitiveness. Studies discussed the connotation, significance, and enhancement strategies of digital leadership in public libraries. Drawing on the resource-based view and dynamic capabilities theory, Previous research has also explored how Party-building practices foster digital leadership in the case study of Haier Smart Home's “Party branches embedded in micro-units.” Additionally, the application of digital leadership in virtual team management—a rising management model—has gained growing attention among scholars both domestically and internationally.

2. Studies at the Individual Level

At the individual level, research focuses on how leaders influence employees' attitudes, values, and behaviors through their actions and leadership styles: Leader influence on employee attitudes and values. In their study on millennial workplace engagement, they found that a learning culture significantly and positively affects digital leadership. Showed that managers' technological capabilities, innovativeness, and motivational guidance positively influenced banking operations. Oktaysoy et al. (2022) found that digital leadership skills significantly affect leaders' mental health—those with low digital leadership capabilities are more likely to

experience lower levels of psychological well-being. Digital resources and the challenge of digital survival: With the growing importance of data and digital tools in management—often controlled by IT professionals rather than leaders (Bresnahan et al., 2002)—information asymmetry and potential internal/external interference can impair communication efficiency. The increasing dependence on digital systems has led to the phenomenon of “digital survival,” challenging traditional leadership competencies and weakening authority structures. Communication in the digital age: Zaccaro emphasizes that effective communication is crucial for leveraging the benefits of digital technologies while mitigating their potential drawbacks. Clear communication systems not only help leaders better understand employee behavior but also enhance task efficiency. Establishing a robust internal communication framework is essential for clarifying leader–follower roles and improving overall organizational effectiveness.

The above summarizes a portion of the empirical research literature relevant to digital leadership.

Review of Research on Digital Leadership

In their influential work *Leadership*, American leadership scholars Richard Hughes, Robert Ginnett and Gordon Curphy proposed a leadership research model (see Figure 1), which conceptualizes leadership as the intersection of three key elements: The leader, the followers, and the context in which they interact (Hughes 2006). This model highlights the essence of leadership research as a dynamic and relational process shaped by these three dimensions.

In reviewing the literature on digital leadership, this study adopts the framework of this leadership model and analyzes the topic from three perspectives: 1) the interaction between digital context and digital leaders; 2) the influence of digital leadership on followers; and 3) the dynamics of digital leadership groups.

First, the model emphasizes that leadership is not an isolated act, but the result of an interplay between leaders, followers, and contextual factors. The effectiveness of digital leadership depends not only on the traits and behaviors of the leaders themselves, but also on employees’ capabilities, attitudes, and the technological environment within the organization. In the context of digital transformation, how leaders enhance digital adaptability and adjust leadership strategies according to varied digital settings has become a key issue in leadership studies.

Second, whereas traditional leadership research has primarily focused on individual leader characteristics (e.g., charismatic or transformational leadership), this model stresses the situational contingency of leadership. During digital transformation processes, differences in technological infrastructure, organizational culture, and market dynamics can significantly influence the form and effectiveness of digital leadership. Thus, the model provides a robust theoretical foundation for examining digital leadership across diverse organizational environments.

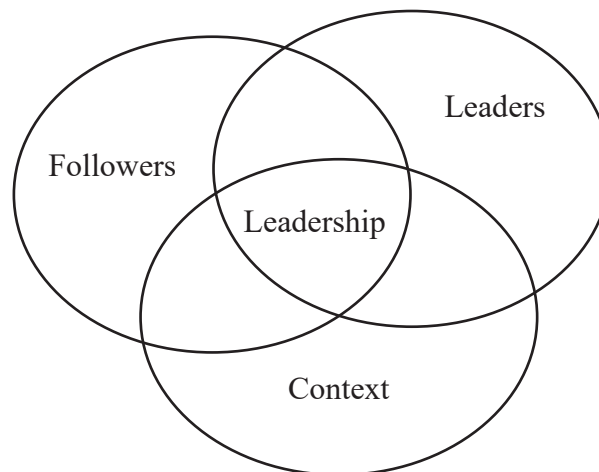


Figure1: Digital Leadership Model Framework

Source: The Impact of Digital Leadership on Employee Innovative Performance.

Methodology

In the field of digital leadership research, both qualitative and quantitative empirical approaches have been employed. However, there is still no consensus within academia regarding a unified definition of digital leadership. Scholars have interpreted the concept from different perspectives. From a qualitative standpoint, literature reviews show that most existing studies on digital leadership are primarily theoretical or qualitative in nature. Among the reviewed articles, only two developed measurement tools for digital leadership, while the majority of studies focused on correlations are limited to case-based research. This indicates a clear need for the development of robust measurement instruments. Only by progressively refining such tools can future studies systematically test the relationship between digital leadership and other organizational behaviors through quantitative methods.

In terms of empirical research methods, measurement of digital leadership has primarily relied on questionnaires, with scholars constructing instruments based on different dimensional frameworks. Broadly, the research pathways can be categorized into the following types:

(1) Exploratory research based on dimensional classification. Early scholars mainly employed literature synthesis and theoretical deduction to identify the core elements of digital leadership. For instance, Wang et al. (2024) proposed seven components, including technological capability, analytical capability, and adaptability, though no concrete measurement tool was developed. These studies emphasized conceptual construction but lacked quantitative validation.

(2) Preliminary scale development with simplified items. Oktaysoy et al. (2022) conceptualized digital leadership into two dimensions—attitudes and skills—and designed a six-item short scale. Similarly et al., (2020) developed a five-item scale in the Chinese context, covering areas such as digital environment mastery and digital talent development. Although these efforts initiated quantification, the instruments were largely based on researchers' judgment, with limited items and insufficient reliability and validity testing.

(3) Expanded dimensions and capability frameworks. Scholars such as Zhang and Zheng (2023) proposed multidimensional frameworks, including digital communication, digital trust, digital ethical empathy, and digital mindset transformation, from the perspectives of input-output

and capability building. However, these remained at the theoretical level and did not yield operational scales.

(4) Localized scale development attempts. Drawing on the logic of “Mingdao, Qushi, Youshu, Shuren,” constructed a four-dimensional scale—digital mindset, digital detection, digital socialization, and digital reserve—measured with a seven-point Likert scale. This represents one of the few more systematic attempts at indigenous scale development.

Overall, the current measurement of digital leadership mainly relies on questionnaire-based scales, with the following methodological characteristics: Item generation is often based on literature review and expert interviews, with limited application of rigorous qualitative approaches such as grounded theory interviews; the number of items per scale is generally small, and dimensional classifications lack consistency; reliability and validity testing is often limited to Exploratory Factor Analysis (EFA), with insufficient Confirmatory Factor Analysis (CFA) and systematic assessment of convergent and discriminant validity; and the cross-cultural applicability of foreign-developed scales remains questionable, with few large-sample validations conducted in the local context.

The present study focuses on perceived digital leadership and its underlying psychological processes. The questionnaire sample was obtained by inviting working relatives and friends, as well as acquaintances who had founded or managed enterprises, who, in turn, assisted in recruiting employees from their companies to participate. The measurement instrument adopted in this study is the scale developed by Zhang and Zheng (2023), which combined qualitative and quantitative methods within the Chinese context and followed a rigorous, standardized procedure. Their digital leadership scale consists of four dimensions: Digital mindset transformation, digital resource building, digital ethical empathy, and digital practice cognition. The instrument includes 18 items, with a Cronbach’s α coefficient of 0.952, indicating very high internal consistency and strong measurement stability.

Results

Through a systematic review of relevant domestic and international literature, it can be found that digital leadership, as an emerging leadership style, has gradually become an important topic in organizational management and leadership research. Existing research has achieved certain results in terms of concept definition, theoretical basis, structural dimensions, antecedent mechanisms, and outcome variables, laying a theoretical and empirical foundation for the development of this field.

This study’s review of the literature on digital leadership yields the following results:

1. Definition: Digital leadership is the ability of leaders to use a series of digital resources to influence the attitudes, emotions, and behaviors of organizational members, aiming to promote organizational digital transformation and respond to the digital environment.
2. The difference between digital leadership and traditional leadership: It is top-down, acknowledges employees as “strong individuals”, is inclusive and empowering, and centered on “employees”, with leadership empowerment behavior being a specific representative behavior of digital leadership.
3. Review of the current research status of antecedent and consequent variables of digital leadership in existing studies.

4. The measurement of digital leadership by Zhang and Zheng 2023 has been found to have good reliability and validity, and presents the current status of existing empirical research.

Conclusions

Overall, the following three aspects can be summarized:

First, theoretical contributions. Existing research is mostly based on perspectives such as leadership theory, organizational change theory, self-determination theory, and complex adaptive systems theory, initially revealing that digital leadership effectively enhances the adaptability and innovation of individuals, teams, and organizations through paths such as vision shaping, technology empowerment, and agile collaboration. Studies show that digital leadership not only boosts employees' creativity, work engagement, and organizational commitment but also plays a positive role in promoting organizational digital transformation and overall performance improvement.

Second, empirical achievements. Currently, scholars have accumulated several empirical research results, generally agreeing that digital leadership helps to stimulate employees' work enthusiasm, promote knowledge sharing, and drive organizational innovation and performance improvement. Some studies have also made attempts in measurement tools, for instance, using the scale developed by Zhang and Zheng (2023), and others, verifying the structural dimensions of digital leadership and its good reliability and validity. However, there is insufficient attention paid to the potential negative effects of digital leadership, such as the possible employee stress, cognitive burden, and digital divide, which still need in-depth exploration.

Third, research deficiencies and prospects. Overall, research on digital leadership is still in its development stage, with issues such as an incomplete conceptual system, the need for localization and optimization of measurement tools, insufficient in-depth research on antecedent and outcome mechanisms, insufficient cross-level and cross-industry comparisons, and a single research method.

Future Research Directions

1. In empirical research on digital leadership, data should be collected from multiple channels. Different data sources can provide different perspectives and information, which helps to reduce the bias brought by a single data source. Develop localized scales and build systematic, scientific, and China-specific measurement tools. Besides traditional questionnaires, methods such as interviews, observations, and case studies can also be combined. For instance, through interviews with leaders and employees, gain a deeper understanding of their perceptions and experiences of digital leadership; through observing the actual behaviors of leaders and the digital practices of organizations, obtain more intuitive data; through case studies, research the leadership performance and lessons learned in the digital transformation process of specific organizations or industries. The combination of multiple data sources can mutually verify each other, enhancing the credibility of research conclusions.

2. Focus on exploring the antecedent variables of digital leadership. Deeply investigate the formation mechanism of digital leadership influenced by organizational environment, leadership traits, cultural atmosphere, etc. Through experimental methods, under controlled variable conditions, test the causal impact of digital leadership on employee behavior, organizational performance, and other variables. For example, by designing experimental

scenarios, compare the team collaboration effects, innovation capabilities, and job satisfaction of teams with different levels of digital leadership, thereby more accurately assessing the role of digital leadership. Explore the influence of organizational culture, structure, and other factors on digital leadership. Comparative studies can help reveal the internal mechanisms of digital leadership and provide differentiated development paths for organizations.

3. Digital leadership ultimately occurs in the practice and experience of individual leaders. Case studies can deeply explore the thinking transformation, behavioral changes, opportunities, and challenges faced by individual leaders during the digital transformation process. Through case studies of different leaders, common patterns and individual differences in the formation of digital leadership can be summarized, providing targeted suggestions for cultivating and enhancing digital leadership.

4. Comparative research methods can effectively explore the different factors influencing the level of digital leadership. There are significant differences in digital leadership among different leaders, organizations, or industries. Through comparative analysis, the key factors causing these differences can be identified. Optimize research methods, break through the limitations of cross-sectional and single data sources, and adopt longitudinal tracking, paired data, and multi-method integration to reveal causal relationships and dynamic evolution processes. Explore the connotation, formation mechanism, effect, and influencing factors of digital leadership from different angles and levels.

In conclusion, the research on digital leadership is at a critical stage where theoretical exploration and practical application are advancing simultaneously. Future research not only needs to achieve further systematization and localization in theory but also needs continuous innovation in methodology and practice to comprehensively reveal the multi-dimensional mechanism of digital leadership and provide more targeted theoretical support and practical guidance for the digital transformation and high-quality development of enterprises.

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Fiscal Rebalancing and Peacebuilding: Budget Allocation Strategies in Thailand's Southern Border Provinces

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Abstract

This study examines government budget allocation strategies for sustainable peacebuilding in Thailand's Southern Border Provinces. Employing a qualitative policy analysis based on secondary data—including government budget reports and conflict incident data from Deep South Watch (2004-2022)—the study integrates the analytical frameworks of Fiscal Policy for Development, Fiscal Federalism, and Positive Peace to assess the effectiveness of fiscal interventions in conflict-affected areas.

The findings indicate that, despite cumulative public expenditure exceeding 400 billion baht, budget allocation has remained predominantly concentrated on security operations, limiting its effectiveness in addressing the structural drivers of conflict. However, a significant shift since 2017 toward integrated and area-based budgeting—emphasizing cross-sectoral coordination and local participation—has been associated with a marked decline in violent incidents. This suggests that development-oriented and context-sensitive fiscal strategies are more effective in reducing conflict intensity.

The study further demonstrates that sustainable peacebuilding requires a rebalancing of fiscal priorities from security-centered expenditure toward investments in economic opportunities, social services, and inclusive development. In this regard, the concept of “Peace Budgeting” is proposed as a strategic framework for transforming public finance into a mechanism for reducing structural inequalities, strengthening state–society trust, and promoting long-term stability.

Comparative insights from the Mindanao case in the Philippines reinforce the importance of aligning fiscal decentralization, participatory governance, and structured peace processes. The study concludes that effective peacebuilding depends not on the scale of public spending, but on its structure, allocation logic, and inclusiveness. Accordingly, the transition toward Peace Budgeting represents a critical paradigm shift for achieving sustainable and inclusive peace in multicultural and conflict-affected societies, positioning fiscal policy as a central mechanism linking development and peacebuilding in such contexts.

Keywords: Conflict, Peace Budgeting, Southern Border Provinces, Sustainable, Violence

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Introduction

The conflict and unrest in Thailand's southern border provinces of Pattani, Yala, and Narathiwat, as well as certain districts of Songkhla, are rooted in complex, longstanding historical, cultural, religious, and political foundations. The majority of the population in these areas adheres to Islam and speaks the Malay language. Historically, this region had autonomy before being incorporated into Siam (Thailand) during the Rattanakosin period. Subsequently, the Anglo-Siamese Treaty of 1909 marked a significant turning point, resulting in the formal division of Malay territories between the British colonial administration (present-day Malaysia) and Siam. This division engendered a sense of separation from ethnic and religious brethren.

Historically, the southern border provinces were once a prosperous ancient kingdom known as the "Malay Pattani Kingdom" (Oraphan et al., 2012). Particularly during the early Ayutthaya period, the region maintained self-governance under a sultanate system and possessed strategically significant port cities along the eastern coast of the Malay Peninsula. This strategic importance prompted both the Ayutthaya and Rattanakosin kingdoms to extend their influence in attempts to control Pattani. Following the end of Raya Kuning's reign and Sultan Muhy al-Din's accession, Siamese forces defeated the armies of the Malay Pattani Kingdom and ultimately annexed the territory into the Kingdom of Siam. This loss of independence constituted a monumental loss in Pattani's history, as it resulted in Pattani remaining under Siamese rule to the present day" (Oraphan et al., 2012).

Following the Siamese military conquest of the Malay Pattani Kingdom, the once-mighty kingdom became part of the Kingdom of Siam, and administrative reforms were initiated, beginning with changes in leadership. Subsequently, resistance movements emerged, leading to the division of the original Malay Pattani Kingdom into seven principalities: Pattani, Yaring, Nong Chik, Yala, Saiburi, Raman, and Ra-ngae. Inevitably, such administrative restructuring diminished the sense of pride associated with the territory of the Malay Pattani Kingdom. In 1902, a major administrative reorganization consolidated all seven principalities into a single administrative unit called "Monthon Pattani." This reform abolished the authority of the seven local rulers and appointed Siamese commissioners as governors responsible for political affairs. Subsequently, in 1906, Monthon Pattani was subdivided into four provinces: Pattani, Yala, Saiburi, and Narathiwat, with Siamese commissioners appointed to govern each province. The aforementioned developments demonstrate that this territory of Pattani gradually transitioned from a state where Malay Pattani people exercised governing authority, possessed sovereign power, and wielded influence over other Malay territories to becoming an integral part of Siam (Oraphan et al., 2012).

The loss of the once-mighty Malay kingdom in this region caused profound suffering among the Malay population. Beyond the transformation of the Malay Pattani Kingdom into a subordinate territory of Thailand, there were accounts of Thai government actions whereby Thai officials who came to govern the Malay Pattani people acted unjustly and consistently sought personal gain. This treatment led the Malay population to feel they were being governed as a colonial dependency rather than as an integral part of the Kingdom of Siam. However, there were periods when the Malay Pattani people received adequate care and experienced prosperity under Siamese administrators. For instance, during the tenure of Prime Minister Pridi Banomyong, budgetary allocations were made to support and develop education and religious institutions for

the Malay Pattani community, which garnered considerable acceptance and appreciation from the Malay Pattani people (Oraphan et al., 2012).

Since the annexation of the Malay Pattani Kingdom, which had previously been an independent state, through administrative centralization during the reign of King Rama V, resistance and violence have persisted. Following the 1932 revolution that changed Thailand's governance system, the municipal administration system was abolished and replaced with regional provincial administration. The seven former Malay principalities were transformed into southern border provinces. Discontent among the former Malay rulers persisted until approximately 1947, when a concrete resistance movement emerged among the Malay population under the leadership of the traditional Malay elite. The Malay nationalist movement had a clear objective of achieving independence from Thai rule. Since then, the conflict and violence occurring in the southern border provinces have been perceived as a security problem (Pitakkumpol, 2017).

Unrest in the southern border area has occurred periodically, but the violence that erupted in 2004 represents a notably different phenomenon from past incidents in several aspects, including the frequency of incidents, the methods of attack involving highly destructive explosive devices, and the operational areas. Whereas historical incidents occurred in mountainous regions, recent events have taken place in community areas and urban zones where civilians reside. Moreover, the violence has been perpetrated not by large-scale forces but by groups employing violence as a means of resistance against state authority. This new wave of violence began with the "arms heist" incident at the Narathiwat Task Force Development Unit camp in Cho Airong District, Narathiwat Province, followed by the "Krue Se Mosque" incident in Pattani Province and the dispersal of demonstrators in front of the "Tak Bai" District Police Station in Narathiwat Province. These incidents collectively led to sustained armed operations that continue to the present day. The insurgent groups comprise multiple separatist ideological factions (such as the BRN) seeking to declare the independence of "Pattani" through armed struggle or bombings aimed at destroying both lives and property. Furthermore, identity differences in religion (Islam versus Buddhism), language (Malay-Jawi versus Thai), and culture serve as critical insulating factors that significantly intensify the conflict's complexity (Pitakkumpol, 2017).

Moreover, structural social problems such as poverty, unemployment, and perceptions of injustice within the governance and economic structures serve as contributing factors that fuel unrest and violence in the southern border area. All of these issues constitute historical conflicts stemming from the integration of states with different ethnic and religious compositions, as well as identity-based conflicts accumulated from misunderstanding and wounds inflicted by past unjust treatment by the Thai state, combined with the ideological struggle of separatist groups. Consequently, the violence in Thailand's three southern border provinces represents an ongoing security and development challenge spanning more than two decades that affects the lives, economy, and trust of the local population. The Thai government has allocated substantial budgets to address these issues, predominantly for security measures such as military deployment, police forces, and intelligence operations. Despite continuous increases in security expenditures, the unrest persists, and at times, incidents have intensified. Additionally, the government has invested enormous sums through ministries and local agencies in both the security and development sectors, aiming to address the problems and de-escalate the situation.

Furthermore, successive governments have established various agencies to address problems in the southern border provinces, as follows:

1. The National Reconciliation Commission (NRC) was appointed to bring together personnel from various sectors of society to collaborate in seeking long-term solutions to the country's problems, to achieve genuine reconciliation, peace, and justice.

2. The Forward Command of the Internal Security Operations Command, Region 4 (ISOC Region 4 Forward Command) was established to oversee security operations and military activities in the five southern border provinces (Pattani, Yala, Narathiwat, Songkhla, and Satun). It implements security plans to prevent, suppress, and reduce violent incidents, while coordinating with civilian agencies and the Southern Border Provinces Administrative Centre (2020).

3. The Southern Border Provinces Police Operations Centre (SBPPOC) is responsible for law enforcement, investigation, and maintaining order in the area, as well as conducting joint operations with ISOC Region 4 Forward Command and supporting special case investigations and security-related cases.

4. The Joint Civilian-Police-Military Task Force functions in area-based operations such as patrols, village protection, public relations, and victim assistance.

5. The Southern Border Provinces Administrative Centre (SBPAC) is responsible for coordinating and implementing government policies in the three southern border provinces, fostering understanding and cooperation between the government and the people, and supporting economic, social, and educational development in the area.

6. The Advisory Council for Administration and Development of the Southern Border Provinces serves as a platform for local stakeholders (including religious leaders, civil society, and the private sector) to participate in policy formulation and development proposals, functioning as a mechanism for building understanding between the state and Muslim communities in the area.

The majority of the aforementioned government-established agencies have focused primarily on maintaining order and security rather than emphasizing area development to mitigate conflict. This indicates that each year the government allocates enormous budgets to security operations rather than to economic and social development or to promoting justice and equality for the local population. Consequently, it may be considered that the persistence of violence in Thailand to the present day stems from the government's failure to address the root causes that would sustainably resolve the conflict and violence.

Beyond the Thai context, conflict problems in border areas or regions with ethnic and religious diversity have persistently emerged in several ASEAN countries, stemming from the histories of nation-state formation, the centralization of state power, and economic and social imbalances. A significant example is the conflict in Mindanao, Philippines, which is rooted in colonial history and the sense of exclusion experienced by the Bangsamoro Muslims. The Philippine government has shifted its approach from military force to peace negotiation processes, decentralization, and the establishment of the Bangsamoro Autonomous Region in Muslim Mindanao (BARMM), which represents an important example of conflict resolution through political institutions and area-level public participation.

Similarly, ethnic conflicts in Myanmar's Kayah, Shan, and Kachin states reflect the limitations of centralized states that cannot effectively manage identity diversity. Despite periodic attempts to sign ceasefire agreements and engage in political negotiations, the lack of decentralization mechanisms and discontinuity in peace processes remain significant obstacles to sustainable conflict resolution. Meanwhile, the case of Papua Province in Indonesia demonstrates the state's efforts to employ "Special Autonomy" measures alongside investment in

development and infrastructure. Although such measures have helped reduce tensions at times, they continue to face criticism regarding equity in resource allocation and genuine community participation in the area.

These case studies from ASEAN countries demonstrate that conflict resolution cannot rely solely on security measures but must integrate structural development, political and fiscal decentralization, and respect for the cultural and religious identity of local populations. Such lessons are particularly significant for understanding and formulating approaches to resolving the conflict in Thailand's southern border provinces, which are multicultural and face structural challenges similar to those in several ASEAN countries.

Therefore, this article proposes an approach to sustainable conflict resolution in Thailand's Southern Border Provinces by applying Peace Budgeting principles. This approach conceptualizes public budgets not merely as fiscal instruments for managing state expenditure, but as strategic mechanisms for shaping structural conditions that reduce violence, de-escalate conflict, and support long-term peacebuilding. It emphasizes rebalancing public expenditure from security-oriented spending toward investments in economic, social, educational, and quality-of-life development, with particular attention to local contexts and community participation. In doing so, Peace Budgeting advances Positive Peace by addressing structural inequalities, expanding livelihood and educational opportunities, and strengthening inclusive mechanisms for coexistence in culturally diverse societies.

Despite extensive studies on conflict and development in Thailand's Southern Border Provinces, limited attention has been given to the role of fiscal allocation as a strategic instrument for peacebuilding. Existing literature in the conflict–development nexus emphasizes that economic incentives and structural conditions play a decisive role in sustaining conflict (Collier & Hoeffler, 2004). However, the use of fiscal policy as a proactive mechanism to address these structural drivers remains underexplored.

This study also builds on the conflict–development nexus literature, which emphasizes the interdependence between security, institutional capacity, and socio-economic development in conflict-affected contexts. According to the World Bank (2011), sustainable peace requires strengthening legitimate institutions, improving governance, and expanding economic opportunities, as these factors are critical in breaking cycles of violence. However, the role of fiscal allocation as a strategic mechanism for operationalizing these conditions remains underexplored.

Research Objectives

This study aims to investigate the role of government fiscal allocation as a strategic instrument for peacebuilding in conflict-affected areas, with particular focus on Thailand's Southern Border Provinces.

- 1) To analyze government budget allocation patterns in Thailand's Southern Border Provinces, with emphasis on the balance between security and development expenditures.
- 2) To examine the relationship between fiscal allocation strategies and conflict dynamics, particularly changes in violent incidents over time.
- 3) To evaluate the role of fiscal policy in peacebuilding and propose “Peace Budgeting” as a framework for achieving sustainable and inclusive peace.

Literature Review and Conceptual Framework

Fiscal Policy for Development: Theory by Richard A. Musgrave explains the state's role in employing fiscal policy to achieve economic and social objectives, particularly reducing inequality, promoting equity, and fostering long-term economic stability (Musgrave, 1959; Stiglitz, 2000). This concept serves as the foundation of public economics, which views the state as responsible for allocating resources for public benefit, redistributing income for equality, and maintaining macroeconomic stability (Musgrave & Musgrave, 1989).

Musgrave (1959) proposed that the state has three primary fiscal functions: (1) the allocation function; (2) the distribution function; and (3) the stabilization function, all of which are directly related to sustainable development and the construction of structural peace (Tanzi, 2011).

Allocation Function

The state is responsible for allocating public resources to maximize benefits for the population, particularly when market mechanisms fail to allocate resources efficiently (Market Failure), such as in public goods, education, healthcare, and infrastructure (Stiglitz, 2000). Government investment in these sectors aims to reduce development gaps and enhance the population's long-term capacity.

In the context of the three southern border provinces, state budget allocation for developing economic and social infrastructure, creating new livelihoods, and promoting education that respects religious identity and local culture constitutes a critical mechanism for reducing spatial inequality and building the foundation for long-term peace.

Distribution Function

The state plays a crucial role in reducing economic and social inequality through taxation systems and budgetary mechanisms that promote equality and equity. Examples include progressive taxation, subsidies for vulnerable groups, and public expenditure to improve the quality of life for populations in disadvantaged areas.

In the context of the three southern border provinces, budget distribution to develop the grassroots economy, promote community enterprises, and support women, youth, and smallholder farmers exemplifies the use of fiscal mechanisms to reduce inequality and foster social justice. This aligns with Johan Galtung's concept of "Positive Peace," which posits that genuine peace must arise from structural justice and the reduction of social divides (Galtung, 1969).

Stabilization Function

The state is responsible for maintaining overall economic stability in terms of employment, price levels, and economic growth through fiscal policy, which stimulates the economy during recessions or moderates expansion during periods of overheating (Musgrave & Musgrave, 1989). In areas characterized by social and political fragility, such as the three southern border provinces, it is essential to support budget expenditure to stimulate the local economy, create short-term employment, or implement community development projects to alleviate economic pressures and reduce the likelihood of community-level violence.

Based on Musgrave's framework (Musgrave, 1959), its application to peacebuilding and development can be implemented concretely through peace budgeting. Specifically, equitable resource allocation (Allocation), fair income distribution (Distribution), and economic stabilization (Stabilization) serve as conditions conducive to achieving "Structural Peace"

and “Sustainable Peace.” This concept aligns with the sustainable development approach that seeks to balance economic, social, and environmental dimensions. Therefore, the application of fiscal policy for budget allocation in the southern border provinces is not merely government expenditure for economic development, but also constitutes a peace mechanism that builds trust, equality, and public participation in the development process, ultimately leading to long-term security and sustainable peace.

Decentralization Theory explains the processes and principles through which the state transfers authority, functions, and fiscal resources from central government to local governments to maximize resource management efficiency and align with the needs of populations in different areas (Rondinelli et al., 1983). This concept is rooted in the work of Oates (1972) in his book *Fiscal Federalism*, which is considered the foundational theory of Fiscal Decentralization Theory. Oates proposed that spending authority and taxation be decentralized to the governmental units closest to the people, as this enables resource allocation to respond more effectively to area-specific needs than centralized decision-making. Oates presented three key principles of fiscal decentralization:

(1) The Decentralization Theorem: States that local governments typically allocate public services more efficiently than the central government when such services affect only the population in one area without affecting other areas, because local governments possess superior knowledge of local information, needs, and environmental conditions compared to the central government.

(2) Assignment of Functions: Stipulates that functions and revenues should be appropriately divided, with the central government responsible for national-level public services while local governments oversee area-level public services such as education, healthcare, or small-scale infrastructure development.

(3) Intergovernmental Transfers: Constitute a mechanism for budget transfers between government levels to reduce income disparities between areas, particularly in areas with low revenue bases.

All of these principles aim to achieve efficiency and equity in budget allocation, representing critical elements of decentralized public administration (Oates, 1972).

According to Dennis Rondinelli’s framework, decentralization can be classified into four types (Rondinelli et al., 1983):

(1) Administrative Decentralization: The transfer of administrative authority and decision-making power to local agencies, such as local government organizations (subdistrict administrative organizations, municipalities, or provincial administrative organizations).

(2) Fiscal Decentralization: The transfer of revenue collection authority, budget expenditure, and budget planning to local governments to enhance flexibility and accountability (Oates, 1972).

(3) Political Decentralization: The granting of citizens’ rights to participate in local-level politics, such as the direct election of local executives or local councils.

(4) Market/Social Decentralization: The promotion of private sector and community organization participation in public service delivery or area-level economic development.

Thailand has applied the aforementioned decentralization concepts since the Eighth National Economic and Social Development Plan and the Decentralization Plan and Process Act of 1999, emphasizing local governments’ capacity to formulate development plans and manage budgets independently. In the southern border provinces, this concept is particularly

significant due to the region's distinctive cultural, religious, and economic characteristics. Empowering local authorities to plan budgets and development projects aligned with local contexts enhances public trust and participation. Furthermore, this approach aligns with the concept of "Peace Budgeting," which emphasizes budgeting that enables communities and local organizations to determine their primary needs.

The concept of Peace Budgeting, proposed by Eichner (1984), has been debated internationally since the 1980s, demonstrating that state budgets should be viewed not merely as fiscal instruments but also as strategic tools for peacebuilding and sustainable economic growth. Reducing excessive military and security budgets and reallocating resources toward investment in infrastructure, education, research and development, and public services can generate what is termed the "Peace Dividend"—the social and economic benefits of peace that exceed those derived from allocating budgets to arms accumulation.

Eichner's (1984) article "Budgeting for Peace and Growth" emphasizes defense spending cuts, stating that "even with reduced defense budgets, security capacity can be maintained." Reducing new weapons procurement and adjusting military policy can save tens of billions of dollars annually. Regarding the reallocation of budgets toward investment for peace and growth, governments should invest the savings from defense budget reductions in economic infrastructure, research and development, energy, and social development, aiming to build a competitive economic base rather than relying on arms sales or military activities. Therefore, viewing budgets as tools for peacebuilding and development transforms them from mere fiscal instruments into crucial strategic tools for creating peace. When appropriately allocated, budgets can reduce political and military pressures and foster societal peace.

The concept of Positive Peace by Johan Galtung, a Norwegian social scientist recognized as the "Father of Peace Studies," was proposed in his classic article "Violence, Peace, and Peace Research." In this article, Galtung (1969) distinguished peace into two concepts: Positive Peace and Negative Peace.

Positive Peace refers to the absence of both direct and structural violence, representing a state in which society can coexist justly, with respect for human dignity and mutually supportive social mechanisms. Furthermore, Positive Peace is more than merely ending conflict; it is the process of building a just and equitable society (the integration of human society), which requires structural development such as reducing economic and social inequality, creating participatory and transparent political systems, promoting education, understanding, and cultural tolerance, as well as respecting human rights and social justice (Galtung, 1969).

Negative Peace, on the other hand, refers to the absence of war or direct violence (absence of direct violence), representing a state in which physical conflicts such as combat, killing, or assault are suspended or controlled. Yet, structural violence or cultural violence remains embedded within the social system, such as inequality, discrimination, lack of economic opportunities, or cultural oppression. In other words, peace at this level is merely a "temporary ceasefire" that fails to address the root causes of conflict (Galtung, 1969).

Consequently, in subsequent years, peace researchers (Institute for Economics & Peace, 2019) have expanded Galtung's concept within the framework of "sustainable development," asserting that "Positive Peace" is a critical prerequisite for long-term development. Without social structures, any development remains fragile and may generate new forms of violence. In the context of the three southern border provinces, for instance, building Positive Peace entails shifting from a military security approach to a development security paradigm by allocating

budgets to improve quality of life, create economic opportunities, and restore trust between the state and its citizens, thereby aligning with the principles of Peace Budgeting. Therefore, Galtung's concept of Positive Peace signifies not merely "ending violence" but "building a just and equitable social system" through structural development and inclusive participation across all sectors. When linked to public budget allocation, this transforms security budgets into sustainable, effective peace budgets over the long term.

The concept of Sustainable Development was formally introduced by the World Commission on Environment and Development (WCED), also known as the Brundtland Commission, chaired by Gro Harlem Brundtland, former Prime Minister of Norway. The commission published the report "Our Common Future" in 1987 under the auspices of the United Nations. This report marked a significant milestone in the paradigm shift in development thinking, as it was the first time the global community formally defined "sustainable development" as development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

The key principles of sustainable development, according to the Brundtland Commission report, propose that "sustainability" comprises three main dimensions that must be pursued simultaneously in balance:

(1) Economic Dimension: Economic growth should be based on efficiency and optimal resource utilization without undermining future productive capacity. The state should promote an economic system that creates equal opportunities and reduces income inequality (Stiglitz, 2000).

(2) Social Dimension: Development should foster justice, gender equality, social security, and inclusive participation across all sectors, particularly vulnerable groups, to create a society of peace and equality.

(3) Environmental Dimension: Emphasizes the conservation of natural resources and ecosystems to ensure that the environment can continue to sustain the lives of both present and future generations.

From the three dimensions above, it is evident that they are interconnected in complex ways. Specifically, if economic growth destroys the environment or creates social inequality, it cannot truly be called "sustainable development." Following the publication of the Brundtland Report, the concept of sustainable development has been extended to the notion of "Development for Peace" by international organizations, which assert that "peace" is both a prerequisite and an outcome of sustainable development. In other words, without economic and social sustainability, lasting peace cannot emerge, and conversely, without peace, sustainability cannot be achieved.

Therefore, regarding the application of sustainable development concepts in the Thai context, Thailand has adopted the Brundtland Report's framework as a foundation for formulating the 20-Year National Strategy (2018-2037), emphasizing development in three main areas: "Security, Prosperity, and Sustainability," integrated with the Sufficiency Economy Philosophy, which stresses moderation, reasonableness, and resilience (Office of the National Economic and Social Development Council, 2021). In the context of the three southern border provinces, the sustainable development concept can be appropriately applied to guide Peace Budgeting by emphasizing: (1) the economic dimension through livelihood creation and equitable distribution of economic opportunities; (2) the social dimension through fostering participation, equality, and trust; and (3) the environmental dimension through natural resource restoration and sustainable agriculture. All of these constitute the foundation for building Positive Peace

(Galtung, 1969), arising from structural justice and balanced development across all dimensions.

Furthermore, fiscal policy for peace can be conceptually linked to Musgrave's framework of the state's fiscal functions: resource allocation (Allocation) to support social and environmental investment; income distribution (Distribution) to reduce inequality and disparities among population groups; and stabilization (Stabilization) to strengthen grassroots economic resilience. In this regard, sustainable development serves as an overarching framework that integrates economic, fiscal, and peace dimensions.

Accordingly, the Thai government must restructure budget allocation from a predominantly military and security-oriented approach toward peace-oriented investment, including the expansion of economic opportunities, education, healthcare, and social cohesion, with community participation as a central principle. Such reallocation not only contributes to reducing violence but also establishes the structural foundations for long-term sustainable peace.

This study integrates fiscal policy, decentralization, and peace theory into a unified analytical framework, wherein fiscal allocation (Musgrave) shapes resource distribution, decentralization (Oates) enhances local responsiveness, and Positive Peace (Galtung) provides the normative basis for evaluating long-term outcomes. Together, these perspectives enable a multidimensional assessment of peacebuilding through public finance.

Methodology

Research Design

This study adopts a qualitative research design using policy analysis to examine government budget allocation strategies in conflict-affected areas. The research focuses on analyzing policy evolution and budget structures related to peacebuilding in Thailand's Southern Border Provinces.

Data Sources

Government Budget Reports

Government budget reports constitute a primary empirical source for analyzing fiscal allocation patterns in conflict-affected areas. In this study, official budget data were obtained from the Bureau of the Budget of Thailand and related governmental agencies responsible for the Integrated Plan for Resolving Problems in the Southern Border Provinces. These reports provide detailed annual expenditure data, including allocations for security operations, economic development, social services, and community-based initiatives.

Such budgetary data are essential for examining the structure and evolution of public spending over time, particularly in assessing the balance between security-oriented and development-oriented expenditures. Previous studies have emphasized the importance of public financial data in understanding state priorities and policy effectiveness in fragile and conflict-affected settings (Addison et al., 2002; World Bank, 2011).

Policy Documents

Policy documents serve as a critical source for understanding the strategic direction, institutional frameworks, and governance approaches in addressing conflict. This study draws upon key national policy documents, including the Policy on Administration and Development of the Southern Border Provinces (National Security Council, 2017) and official reports from the Southern Border Provinces Administrative Centre (Southern Border Provinces Administrative [SBPAC], 2020).

These documents provide insights into the government's integrated approach, combining security, development, and peacebuilding strategies. Policy analysis enables the identification of shifts in governance paradigms, such as the transition from centralized, security-focused approaches to more decentralized and participatory models. According to Hill and Hupe (2009), policy documents are essential for analyzing implementation processes and state intentions, particularly in complex governance environments.

Academic Literature

Academic literature is used to establish the theoretical and analytical foundation of the study. This includes literature on fiscal policy, decentralization, peacebuilding, and the conflict–development nexus. Key theoretical frameworks employed in this study are drawn from Musgrave (1959) on fiscal policy, Oates (1972) on fiscal federalism, and Galtung (1969) on Positive Peace. In addition, the study is informed by the conflict–development nexus literature, particularly the works of Paul Collier and Anke Hoeffler (2004) on the economic causes of conflict, Stewart (2010) on horizontal inequalities, and Nafziger and Auvinen (2002) on the relationship between inequality and conflict, as well as broader perspectives on peacebuilding and development integration (Tschirgi, 2003; Walton et al., 2024).

Furthermore, regional studies on ASEAN conflict contexts, particularly the case of Mindanao, Philippines, provide comparative insights into how decentralization, participatory governance, and development-oriented budgeting can contribute to conflict resolution (World Bank, 2005; Sonsri, 2020).

Analytical Framework

The study employs an integrated analytical framework combining three key theoretical perspectives. First, the concept of Fiscal Policy for Development (Musgrave, 1959) is used to analyze the role of government budget allocation in terms of resource allocation, income distribution, and economic stabilization. Second, Fiscal Federalism (Oates, 1972) is applied to examine the role of decentralization in improving the efficiency and responsiveness of public expenditure at the local level. Third, the concept of Positive Peace (Galtung, 1969) is used to evaluate how budget allocation contributes to reducing structural violence and fostering long-term peace.

In addition, the concept of Peace Budgeting is incorporated as a practical analytical lens to assess how fiscal restructuring can shift state priorities from security-oriented expenditure toward social, economic, and participatory development that supports sustainable peacebuilding.

Methods of Analysis

Data were analyzed using qualitative content analysis and trend analysis. Budget allocation patterns were examined alongside the number of violent incidents to identify relationships between fiscal strategies and conflict dynamics over time.

Furthermore, a comparative analysis was conducted between Thailand's southern border provinces and Mindanao, Philippines, to identify similarities, differences, and transferable policy lessons. The analysis focuses on how budget allocation, decentralization, and participatory processes contribute to conflict reduction and sustainable peacebuilding.

Research Limitations

This study is limited by its reliance on secondary data and does not include primary data collection, such as field interviews or surveys. As a result, the analysis may not fully capture

local perceptions or micro-level dynamics of conflict. However, the use of multiple data sources and comparative analysis helps strengthen the robustness of the findings.

Results

Budget Allocation Patterns in the Three Southern Border Provinces

Thailand's southern border provinces have experienced protracted violence for over two decades, prompting the Thai government to allocate public budgets in a structured manner to address both security concerns and socio-economic development. Budget allocation under the Integrated Plan for Resolving Problems in the Southern Border Provinces can be broadly categorized into two phases, reflecting shifts in policy orientation and governance approach.

Phase 1: Special Budget Allocation and Revival of SBPAC (2004-2016).

Following the resurgence of violence in 2004, the Thai government initiated targeted budget allocations aimed primarily at restoring security and stabilizing the situation. This period was characterized by a security-dominant approach, including the establishment of key institutions such as the Internal Security Operations Command Region 4 Forward Command and the Southern Border Provinces Police Operations Centre (SBPPOC). The introduction of a special-purpose budget in 2005 further institutionalized state intervention through centralized fiscal mechanisms.

From an analytical perspective, this phase reflects a state-centric-fiscal strategy, in which budget allocation was primarily directed toward controlling violence rather than addressing its underlying causes. In terms of Musgrave's allocation function, public resources were concentrated on immediate security needs, with limited emphasis on long-term socio-economic investment. As a result, despite increasing budget expenditure, structural drivers of conflict—such as inequality, marginalization, and limited economic opportunities—remained largely unaddressed.

Phase 2: Integrated Budgeting Approach (2017-2022).

Since 2017, the Thai government has restructured its approach toward an integrated budgeting model under the Integrated Plan for Development and Security Enhancement in the Southern Border Provinces. This approach involves coordination across more than 20 ministries and integrates three key dimensions: security, economic and social development, and the promotion of understanding and peace.

This transition reflects a shift toward a more holistic governance model, aligning with the principles of Fiscal Federalism (Oates, 1972), which emphasize responsiveness to local needs and multi-level coordination. The integration of development and peacebuilding components into budget allocation suggests an increasing recognition that sustainable conflict resolution requires more than security measures alone.

From the above analysis, it is evident that successive governments have consistently prioritized conflict resolution through budget allocation, personnel deployment, and policy interventions. Despite these efforts, the persistence and periodic escalation of violent incidents indicate that these strategies have not been sufficient to achieve sustainable peace.

This limitation can be understood through the lens of Positive Peace (Galtung, 1969), which highlights that the absence of direct violence is insufficient without addressing structural inequalities and social injustices. The continued occurrence of violence suggests that earlier budget allocation strategies were more effective in managing symptoms of conflict rather than resolving its root causes.

Table Comparison of “Budget for Resolving Problems in the Southern Border Provinces” and “Number of Violent Incidents” (2004-2022)

Fiscal Year	Expenditure Budget for Resolving Problems in the Southern Border Provinces	Number of Violent Incidents
2004	13,451 Million Baht	1,472 Incidents
2005	13,675 Million Baht	2,084 Incidents
2006	14,208 Million Baht	1,966 Incidents
2007	17,527 Million Baht	2,396 Incidents
2008	22,989 Million Baht	1,053 Incidents
2009	27,145 Million Baht	970 Incidents
2010	15,902 Million Baht	1,092 Incidents
2011	19,388 Million Baht	1,161 Incidents
2012	16,534 Million Baht	1,850 Incidents
2013	21,125 Million Baht	1,791 Incidents
2014	24,152 Million Baht	1,354 Incidents
2015	25,687 Million Baht	942 Incidents
2016	30,177 Million Baht	815 Incidents
2017	37,794 Million Baht	580 Incidents
2018	40,623 Million Baht	544 Incidents
2019	37,589 Million Baht	411 Incidents
2020	38,652 Million Baht	335 Incidents
2021	36,040 Million Baht	481 Incidents
2022	31,479 Million Baht	488 Incidents

Source: Deep South Watch Database, 2004-2022

Based on the data presented in the table, the trend in government budget allocation for addressing problems in the southern border provinces shows a consistent increase over time, while the number of violent incidents has remained relatively high. Although certain periods saw declines in incidents, these reductions were modest relative to the scale of budget expansion.

However, since 2017, when the government adopted an integrated, area-based budgeting approach, the number of violent incidents has declined by more than half compared with the

initial phase of the conflict. This suggests that a shift from reactive, security-oriented spending toward development-oriented and area-based interventions may help reduce conflict intensity. This observation is consistent with empirical evidence indicating that improvements in socio-economic conditions—such as poverty reduction, increased educational attainment, and rising income levels—are associated with lower levels of violence (Boonyamanond & Chaiwat, 2020; Collier et al., 2004).

This finding aligns with the conflict–development nexus literature, which highlights the critical role of economic conditions in shaping conflict dynamics. In particular, Collier and Hoeffler (2004) argue that economic incentives strongly influence the feasibility of rebellion. This perspective is further reinforced by Nafziger and Auvinen (2002), who emphasize that inequality and social exclusion constitute key structural drivers of conflict. Moreover, Addison, Le Billon, and Murshed highlight that the relationship between economic structures and conflict is shaped not only by deprivation, but also by the distribution and control of resources, which can create both incentives for violence and opportunities for peaceful development.

Discussion

From this perspective, development-oriented fiscal policies that expand economic opportunities, reduce inequality, and promote equitable resource distribution can simultaneously weaken the economic incentives for conflict and address the structural conditions that sustain it. This reinforces the argument that reallocating public expenditure toward inclusive and development-oriented policies is essential for achieving sustainable peace.

These findings underscore the importance of reallocating public resources toward inclusive and development-oriented policies as a key mechanism for long-term peacebuilding. This is consistent with broader evidence from the World Bank (2011), which emphasizes that sustainable peace requires integrated approaches that simultaneously address security, governance, and socio-economic development. In response, the Thai government has increasingly combined security measures with development-oriented initiatives, including development projects, local cooperation, educational programs, and trust-building efforts at the community level. Although these measures have contributed to a gradual reduction in violence, their effectiveness remains constrained by the absence of substantive political solutions, particularly from the perspective of key factors such as BRN (Barisan Revolusi Nasional–Koordinasi), who continue to demand clearer commitments regarding amnesty, self-governance, and legal protections (Burke et al., 2013).

To further contextualize these findings, comparative evidence from other conflict-affected regions is instructive. The Mindanao case in the Philippines illustrates a transition from a military-centered approach toward a negotiated peace process, culminating in the establishment of the Bangsamoro Autonomous Region in Muslim Mindanao (BARMM). This process reflects a structured peacebuilding model characterized by formal negotiations, active participation by civil society, and support from international actors. Moreover, initiatives such as the PAMANA Program demonstrate how public budgets can be strategically deployed to integrate security and development in fragile contexts (Sonsri, 2020).

In contrast to Thailand, where fiscal allocation remains relatively centralized and security-oriented, the Mindanao experience demonstrates that decentralization and participatory governance can significantly enhance the effectiveness of development-oriented budgeting in

reducing conflict intensity. This comparison suggests that institutional design and governance structures play a critical role in mediating the impact of fiscal policy on peace outcomes.

From the perspective of conflict duration theory, the Mindanao case further indicates that reducing the feasibility of sustained conflict—through economic development, institutional reform, and inclusive governance—is essential for shortening conflict duration (Collier et al., 2004). More importantly, it underscores that effective peacebuilding depends on the alignment of fiscal decentralization, participatory governance, and development-oriented budgeting. Without such alignment, public expenditure risks remaining fragmented and insufficient to address the structural drivers of conflict and achieve sustainable peace.

This perspective can be further reinforced by insights from peace economics, which conceptualizes public finance as a strategic instrument for promoting peace rather than merely sustaining security operations. As Brauer (2009) argues, government spending plays a critical role in shaping the economic incentives that either sustain or reduce conflict. Excessive allocation toward military and security sectors may inadvertently reinforce conflict dynamics, whereas reallocating resources toward productive sectors—such as education, infrastructure, and employment generation—can contribute to long-term peace by improving welfare and reducing structural inequalities.

Furthermore, this argument is consistent with the concept of Positive Peace as operationalized by the Institute for Economics and Peace (2019), which highlights that sustainable peace depends on the presence of inclusive institutions, equitable resource distribution, and strong human capital. From this perspective, the concept of Peace Budgeting aligns closely with both peace economics and Positive Peace, as it emphasizes the transformation of public expenditure into a tool for addressing the root causes of conflict. By prioritizing inclusive development and human security, fiscal policy can shift the underlying incentive structure away from violence and toward cooperation and stability, thereby reinforcing the structural foundations of sustainable peace.

Drawing on the empirical findings and comparative analysis, three key policy implications can be identified for Thailand:

(1) Applying Peace Budgeting for Sustainable Positive Peace Development

The application of the Peace Budgeting concept represents a fundamental shift in state budget allocation—from short-term, security-oriented responses toward long-term structural investment aimed at addressing the root causes of conflict. In line with Musgrave's fiscal functions, this approach emphasizes rebalancing public expenditure toward allocation and distribution functions that promote social equity and economic inclusion. Specifically, redirecting resources toward basic public services, education, healthcare, employment generation, and grassroots economic development can reduce structural inequalities, which are key drivers of conflict. Enhancing equality of opportunity and ensuring access to public services can mitigate perceptions of exclusion and injustice, while equitable income distribution and support for community-based enterprises strengthen local economic resilience.

This argument is supported by insights from peace and conflict literature. When aligned with the concept of Positive Peace (Galtung, 1969), such budget allocation functions as a mechanism for reducing structural violence and fostering inclusive, participatory social systems. In this sense, Peace Budgeting operates not only as a fiscal instrument but also as a strategic framework for transforming the state's role from a controller of violence into a facilitator of sustainable peace through inclusive development.

This perspective is further reinforced by the institutional peacebuilding literature. In particular, Paris (2004), in *At War's End*, emphasizes that sustainable peace depends on the establishment of effective institutions capable of managing political competition, fostering participation, and ensuring long-term stability. From this viewpoint, peacebuilding extends beyond the cessation of violence to the construction of institutional frameworks that support inclusive governance and socio-economic development.

Moreover, reallocating public resources toward marginalized communities can reduce horizontal inequalities between social groups—especially along ethnic and religious lines—which are widely recognized as key drivers of conflict in multi-ethnic societies (Stewart, 2010). This is particularly relevant in Thailand's southern border provinces, where such disparities have historically contributed to tensions and instability.

Furthermore, consistent with Collier et al. (2004), expanding economic opportunities and livelihood options reduces the feasibility of sustained conflict by lowering incentives for participation in violence. Taken together, these perspectives suggest that effective peacebuilding requires both reducing structural inequalities and transforming the economic and institutional conditions that enable conflict persistence. This underscores the role of fiscal policy not merely as a technical instrument of public finance, but as a strategic mechanism for long-term peacebuilding and conflict transformation.

(2) Continuous Negotiations to Address Structural Violence

Implementing a continuous, systematic, and good-faith negotiation process is a critical mechanism for building trust between the state and Malay Muslim communities in the southern border provinces. However, such negotiations must extend beyond reducing violent incidents and instead focus on addressing structural violence, which underpins long-term conflict dynamics.

From an analytical perspective, this requires integrating both security and structural dimensions of conflict resolution. While security measures may stabilize the situation in the short term, sustainable peace depends on institutional reforms that address economic inequality, unequal access to resources, and the marginalization of cultural and religious identities. In particular, reducing horizontal inequalities between social groups—especially along ethnic and religious lines—is critical for mitigating long-term conflict dynamics, as such disparities often generate persistent grievances and fuel conflict escalation (Stewart, 2010).

This approach aligns with the principles of Positive Peace (Galtung, 1969), which emphasize justice, inclusion, and institutional legitimacy as foundational conditions for sustainable peace. Effective negotiation processes must therefore be participatory and inclusive, enabling communities to engage in shaping policy outcomes. Such engagement builds social capital and trust, which are essential for long-term peacebuilding.

Furthermore, consistent with Collier et al. (2003), sustained and credible negotiation processes can reduce incentives for continued conflict by altering the strategic and economic conditions that enable armed groups to persist. Accordingly, negotiations should be understood not merely as political dialogue, but as a structural mechanism for transforming conflict dynamics. This underscores the importance of embedding negotiation processes within broader socio-economic and institutional reforms to achieve durable and inclusive peace.

(3) Empowering Civil Society and Local Governance in Peace Processes

Sustainable peacebuilding requires the active participation of civil society and local governance institutions, extending beyond state-led or elite-driven approaches. In line with Fiscal

Federalism (Oates, 1972), decentralization plays a critical role in enhancing the responsiveness and effectiveness of public policy by enabling local actors to participate in decision-making and resource allocation.

Civil society actors, including community organizations, religious leaders, youth groups, and non-governmental organizations, serve as key intermediaries between the state and local populations. Empowering these actors can enhance policy legitimacy, reduce state–society gaps, and promote transparency and accountability. In particular, strengthening local participation can help address horizontal inequalities between social groups—especially along ethnic and religious lines—which are recognized as key drivers of conflict in multi-ethnic societies (Stewart, 2010).

At the community level, participatory mechanisms such as public forums and local mediation processes can strengthen social cohesion and facilitate peaceful conflict resolution. However, such empowerment must be supported by institutional capacity building and adequate resource allocation to ensure meaningful and sustained participation. From an economic perspective, enhancing local governance and participation can also reduce the feasibility of sustained conflict by limiting the conditions that enable armed groups to operate and mobilize support (Collier et al., 2003).

From an analytical perspective, this reflects a shift from centralized governance toward more inclusive and participatory institutional arrangements, which are essential for addressing the structural drivers of conflict. Therefore, integrating civil society and local governance into peace processes represents a key mechanism for fostering inclusive and sustainable peace in conflict-affected areas, positioning decentralization and community participation as foundational elements in transforming governance structures for long-term peace.

Conclusions

This study contributes to the literature by conceptualizing Peace Budgeting as a bridge between fiscal policy and peacebuilding in conflict-affected contexts. It demonstrates that conflict in Thailand’s Southern Border Provinces is deeply rooted in historical, cultural, religious, and structural inequalities, and therefore cannot be effectively addressed through security-oriented measures alone. Instead, sustainable peace requires an integrated approach that combines fiscal policy, decentralization, and the concept of Positive Peace to tackle both direct and structural drivers of conflict.

Empirical findings from budget allocation trends (2004-2022) indicate that, despite significant increases in public expenditure, peace outcomes have remained limited when spending is heavily concentrated on security operations. In contrast, the shift toward integrated and area-based budgeting since 2017 has been associated with a notable decline in violent incidents, suggesting that development-oriented and locally responsive fiscal strategies are more effective in reducing conflict intensity.

From a theoretical perspective, the study confirms that Musgrave’s fiscal functions, Oates’s fiscal decentralization framework, and Galtung’s concept of Positive Peace collectively provide a robust foundation for understanding how public budgeting can function as a strategic instrument for peacebuilding. Effective Peace Budgeting must therefore: (1) prioritize resource allocation toward public services, education, and livelihoods; (2) ensure equitable distribution to reduce horizontal inequalities; and (3) stabilize local economies to mitigate conditions that

enable conflict persistence. These functions must be implemented through decentralized and participatory governance structures to enhance policy responsiveness and legitimacy.

Comparative insights from the Mindanao case further highlight that sustainable peace emerges from the alignment of fiscal decentralization, participatory governance, and structured peace processes. This underscores that budget allocation should not merely support security operations but must actively facilitate inclusion, trust-building, and socio-economic transformation in conflict-affected areas.

Based on these findings, the study argues that transforming public budgeting into a Peace Budgeting framework represents a critical paradigm shift—from short-term conflict management toward long-term structural peacebuilding. This entails rebalancing expenditures toward development sectors, strengthening local governance capacity, institutionalizing participatory mechanisms, and adopting multidimensional indicators of peace beyond conventional security metrics.

In conclusion, sustainable peace in Thailand's Southern Border Provinces depends not on the scale of public expenditure, but on its structure, allocation logic, and governance. When fiscal policy is strategically reoriented to promote equity, participation, and local empowerment, it can serve as a powerful mechanism for reducing structural violence and fostering long-term, inclusive, and sustainable peace.

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Linking Green HRM to Employee Green Behaviors with Green Work Engagement: An Empirical Study of Higher Education

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Abstract

This study investigates the influence of Green Human Resource Management (GHRM) practices on employees' environmentally responsible behaviors within Higher Education Institutions (HEIs) in China, with a particular focus on the mediation effect of Green Work Engagement (GWE). Although GHRM has been extensively examined in many industries, including manufacturing and service, its application in academic contexts remains inadequate, especially in China. Drawing on Social Exchange Theory, the Job Demands-Resources Model, and the Broaden-and-Build Theory, this study develops an integrated framework to examine how GHRM affects both in-role and extra-role green workplace behaviors through GWE. The empirical analysis is based on survey data collected from 400 academic and administrative employees at four universities in Shenyang, a major educational and industrial hub in northeastern China with a history of environmental challenges. The sampling location was particularly suitable due to government-driven sustainability initiatives and the region's concentration of higher education institutions. Standardized and validated scales were employed to measure GHRM, GWE, and green work behaviors, with data analyzed using structural equation modeling. The results show that GHRM has a significant positive impact on both in-role ($\beta = 0.16$) and extra-role ($\beta = 0.18$) green behaviors, indicating that employees are more likely to perform not only their formally required environmental tasks but also voluntary, discretionary eco-friendly actions. The results also show that GWE has a significant positive impact on both in-role ($\beta = 0.21$) and extra-role ($\beta = 0.19$) green behaviors, indicating that employees respond to organizational support for sustainability by displaying greater engagement and environmentally responsible conduct. The research contributes to the limited body of research on sustainability in higher education, recommending that HEIs implement GHRM within institutional policies and foster employee engagement to enhance long-term ecological performance.

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Introduction

The growing challenges of climate change, natural resource exhaustion, and ecological deterioration have positioned sustainability at the forefront of organizations' agendas around the globe. In response, companies and institutes are reforming their strategies toward environmentally responsible practices, implanting sustainability into their organizational core values. Under this transformation, Human Resource Management (HRM) undertakes a critical role, as its functions, ranging from staffing and training to performance appraisal and employee engagement, can be rearranged to support green management philosophies and align employee behaviors with environmental objectives (Zhang et al., 2024). When HRM incorporates environmental values into its practices, it builds a platform for promoting organizational cultures that promote pro-environmental actions and strengthen organizations' commitments to ecological responsibility (Adu Sarfo et al., 2024). Thus, Green Human Resource Management (GHRM) has emerged as a tactical paradigm that aims to implant the sustainability notion within HRM practices. It entails green-oriented employment, development, evaluation, and reward systems, which jointly promote employees' sustainability awareness and motivate environmentally friendly behaviors (Ercantan & Eyupoglu, 2022). Employee green behavior refers to the voluntary and in-role conduct that contributes to organizations' environmental goals, and it has been recognized as critical for converting green policies into tangible results (Dumont et al., 2017). However, HRM practices in isolation may not lead to behavioral realization; thus, psychosomatic mechanisms such as Green Work Engagement (GWE), which is characterized by vigor, dedication, and captivation in ecologically sustainable tasks, are proposed to bridge this discrepancy (Wang et al., 2025). Through GWE, employees internalize sustainable values, allowing GHRM initiatives to translate into consistent workplace green behaviors.

Higher Education Institution (HEIs) serves an essential role in promoting ecological sustainability through teaching, studying, and inspiring green conduct within their operational structures. Being the hubs for knowledge dissemination, conception, innovation, and enlightening future leaders, HEIs are exclusively placed to address ecological tasks and set examples in sustainability undertakings by implementing sustainable practices into their internal operations and management (Oliveira & Proenca, 2025). To foster a green work atmosphere, HEIs must embrace the standpoint of "Act Green" by ratifying sustainability in both academic and administrative situations (Gilal et al., 2019). Faculty, staff, and administrators need to jointly shape campus practices, enabling their engagement with green initiatives indispensable (Gilal et al., 2019). In China, the examination of GHRM in HEIs is particularly timely as the country's commitment to achieving carbon neutrality by 2060, alongside its 14th Five-Year Plan (2021-2025), highlights the importance of embedding sustainability across economic and educational domains (Ba & Cao, 2023). Universities in China are uniquely positioned to influence both employees and students by embedding green values through HRM systems. Recent research has shown that GHRM practices in Chinese universities cultivate pro-environmental behaviors among academic staff, which consequently impact students and the wider public (Mou et al., 2024). Therefore, Chinese HEIs not only implement sustainability within their campuses but also act as incubators for wider social revolution. Notwithstanding these progresses,

the application of GHRM in higher education contexts remains insufficient when compared to other industries. Moreover, while preceding research has employed research frameworks such as Social Exchange Theory (SET), the Job Demands–Resources (JD-R) model, and Broaden-and-Build Theory (BBT), there remains a scope to lengthen these standpoints by exploring how they interact under China’s distinct social and institutional environment. This research thus contributes by contextualizing the GHRM and green behavior relationship under Chinese HEIs settings, incorporating GWE as a mediation factor, and aligning the dialogue with Chinese national sustainability targets and higher education transformations.

The research objectives of the current study are, firstly, to inspect the correlation between GHRM practices and employees’ green workplace behaviors, including both in-role and extra-role behaviors, under the Chinese higher education institution context. Secondly, to examine the mediation effect of GWE on the linkage between GHRM initiatives and employees’ green workplace behaviors under the Chinese higher education institution context. This research will advance both theoretical and practical discussions on GHRM in various ways. First, it extends the application of SET, JD-R, and BBT by positioning them under the higher education setting in China, elucidating how these theories conjointly illuminate the translation of HRM practices into eco-friendly employee behaviors. Second, it contributes to the limited body of research regarding GHRM in HEIs, an under-examined segment that serves a significant role in stimulating environmental responsibility through education and institutional practices. Third, it explicitly links HRM practices at organizational levels with China’s broader sustainability schema, underlining the role of HEIs in realizing national carbon neutrality objectives. Finally, this study offers actionable insights for university management on how to strategize HRM initiatives that both augment ecological performance and nurture long-run commitment among employees toward sustainability initiatives.

Literature Review

GHRM and Green Work Behavior

Green Human Resource Management (GHRM) has gained increasing attention as a critical dimension of organizational sustainability. According to Dumont et al. (2017), GHRM refers to a set of human resource strategies designed to embed environmental mindfulness into core HR functions comprising of green recruitment, which emphasizes employing candidates with pro-environmental values and awareness; green training and development, which focuses on preparing employees with environment related knowledge and aptitudes; ecologically oriented performance management systems that apply explicit ecological criteria in evaluations; and green incentive mechanisms that reward and acknowledge employees’ contributions toward accomplishing organizational environmental objectives. The notion of employee green behavior is closely affiliated with GHRM and represents ecologically responsible conduct displayed in the workplace. These behaviors are generally separated into two categories: That are obligatory in-role behaviors and voluntary extra-role behaviors. In-role behaviors are tasks and responsibilities directly related to employees’ formal job descriptions and performance expectations, such as conserving energy, reducing waste, or conforming to environmental guidelines (Tirno et al., 2023). By contrast, extra-role green behaviors are not mandatory, and they extend beyond the principal duties of employees and are not formally assessed in performance reviews. Examples

include engaging in ecological awareness activities, encouraging peers to adopt sustainable practices, or participating in voluntary green initiatives (Tirno et al., 2023). Within HEI settings, encouraging both in-role and extra-role green behaviors is vital for advancing environmental agendas. Academic staff contribute to sustainability through in-role actions, such as embedding environmental themes into teaching and research practices, while extra-role behaviors are reflected in their volitional involvement in campus sustainability projects and sustainability advocacy efforts. Administrative personnel also serve an essential role by adopting eco-friendly work practices and supporting green initiatives across the institution. Together, these efforts nurture a culture of environmental responsibility that supports HEIs' sustainability performance (Ercantan & Eyupoglu, 2022).

The theoretical foundation explaining the connection between GHRM and employees' environmentally responsible behaviors can be attributed to Social Exchange Theory (SET). Grounded on the tradeoff principle, SET proposes that individuals form mutual exchanges with their organizations, formed by perceptions of organizational care, and are interested in their welfare (Blau, 1964). From this standpoint, when institutions exhibit a strong commitment to ecological sustainability through clearly expressed environmental goals, structured developmental programs, performance assessment systems focused on environmental accountability, and reward mechanisms affiliated with green practices, employees are more likely to feel an obligation to reciprocate. This sense of reciprocity often translates into both formal job-related behaviors and discretionary eco-friendly actions that go beyond role expectations (Nabi et al., 2023). Empirical evidence has consistently demonstrated a significant positive association between GHRM and multiple dimensions of green workplace behavior. Research concludes that improvements in employees' green task performance, liberation, proactive policies, and organizational citizenship behaviors linked to sustainability across sectors such as healthcare, merchandising, and motor vehicles industries (Dumont et al., 2017). Within HEI settings, academic work has shown that practices like green recruitment and training encourage academic staff to integrate sustainability into teaching practices, thus extending the influence of environmental management to students and the broader academic community (Gilal et al., 2019). Furthermore, evaluation systems and reward structures that prioritize ecological contributions have been reported to strengthen pro-environmental engagement among faculty and administrative staff, inspiring active involvement in sustainable campus activities (Bui et al., 2024). Based on these study findings, this study proposes the following hypotheses:

H1: GHRM exerts a positive effect on employees' in-role Green Work Behavior within HEIs.

H2: GHRM exerts a positive effect on employees' extra-role Green Work Behavior within HEIs.

GHRM and GWE

Work engagement broadly refers to the degree to which individuals devote their mental, emotional, and physical capacities in their work roles (Haque et al., 2024). Extending this perspective, Green Work Engagement (GWE) refers to the intensity of vigor and dedication individuals share toward environmentally sustainable practices, their willingness to exert effort in ecological initiatives, and the degree of absorption they exhibit in tasks linked to environmental accountability (Haque et al., 2024). A growing body of empirical studies has highlighted a range of antecedents to work engagement, such as job characteristics, leadership

approaches, and human resource management strategies (Aboramadan, 2022). In conventional HRM research, scholars have long investigated how HR practices shape work engagement. For instance, Arnold et al. (2018) proposed a comprehensive model outlining how administrative processes, task-oriented structures, inspirational leadership, and individual-level considerations jointly enhance engagement levels.

The relationship between GHRM and GWE can be grounded in the Job Demands Resources (JDR) theory, and it differentiates between job demands (those aspects of work requiring substantial and continuous effort) and job resources, which enable employees to accomplish work objectives effectively. According to this framework, job resources function as motivational factors that reinforce engagement, satisfaction, and organizational commitment. As Susanto (2023) contends, organizationally implanted resources, such as HRM initiatives, can serve as catalysts that fuel higher levels of employee involvement. Within this context, GHRM activities, including environmentally oriented recruitment, training, and incentive systems, can operate as a critical job resource and provide motivational incentives that increase employees' commitment to green initiatives. By fulfilling both external and internal desires, GHRM practices not only support professional growth but also reinforce workers' alignment with organizational objectives (Susanto, 2023). Evidence from different industries has demonstrated the positive role of GHRM in shaping employees' environmental attitudes, behaviors, and engagement. For example, Yadate (2025) concluded that GHRM initiatives considerably improved GWE within the education setting, showing that employees who benefited from green training and reward mechanisms displayed stronger involvement in sustainable work behaviors. Within HEIs, the study of GHRM and GWE is still developing, though findings remain encouraging. In higher education, research on GHRM and GWE remains inadequate but growing; for instance, one study conducted by Shahbaz et al. (2024) found that GHRM practices in universities significantly enhance GWE. Based on this discussion, the following hypothesis is advanced: H3: GHRM exerts a positive influence on employees' GWE in HEIs.

GWE and Green Work Behavior

The connection between GWE and green-oriented behavior in this research can be explained through the application of the Broaden-and-Build Theory (BBT) introduced by Fredrickson (2001). According to BBT, the experience of positive emotions expands individuals' cognitive and behavioral repertoires, enabling them to develop enduring psychosomatic and social resources such as adaptability, knowledge, and creativity. In comparison, negative emotional states are associated with a narrowing of attention and the emergence of short-term, survival-focused reactions. By widening thought processes, positive emotions stimulate openness, problem-solving capacity, long-term resilience, and overall well-being (Fredrickson, 2001). Within the domain of GWE, this theoretical framework implies that employees who derive satisfaction from participating in environmentally responsible initiatives, such as feelings of pride in supporting sustainability programs or contentment from engaging in eco-friendly practices, are more inclined to perform pro-environmental tasks. These positive emotional states encourage awareness and motivation, encouraging consistent involvement in green behaviors, which over time fosters enduring dedication to environmental goals (Chatelain et al., 2018). Through GWE, individuals not only enhance their internal drive to advocate sustainability practices but also act as role models who inspire colleagues to adopt ecologically responsible behaviors. Consequently, employees contribute to both organizational sustainability outcomes

and broader environmental objectives beyond the workplace (Marini et al., 2023).

Previous research highlights that employees with higher levels of engagement tend to build stronger relational ties with their organizations, which in turn produces beneficial outcomes for workplace sustainability. For example, engaged employees are more likely to adhere to practices such as energy conservation, waste minimization, and compliance with environmental standards (Yong et al., 2020). Aligning with this outlook, Haque et al. (2024) observed that employees who demonstrated high GWE exhibited greater commitment to carrying out green-related responsibilities, effectively aligning their professional roles with sustainability requirements. Similarly, Yong et al. (2020) underlined that GWE enhances employees' intrinsic motivation, leading them to integrate eco-conscious standards into their daily work, thereby reinforcing consistent in-role green behaviors. Furthermore, engagement is associated with a psychological broadening effect that empowers employees to extend their contributions beyond formal job descriptions. Such discretionary behaviors include participating in voluntary sustainability programs and engaging in activities that exceed routine expectations (Amah, 2020). Previous studies (Aboramadan et al., 2022; Chen et al., 2020) have confirmed that engagement is an important determinant of extra-role behaviors, particularly those connected with green institutional citizenship. For instance, Amah (2020) found that highly involved employees were proactive in generating innovative sustainability suggestions and voluntarily engaging in green initiatives, while Chen et al. (2020) emphasized that employees with higher GWE levels often promote sustainability awareness among peers, cultivating an environmentally conscious workplace culture. In HEI settings, Fawehinmi et al. (2022) demonstrated that academic staff who actively engaged in green activities went beyond routine expectations by implementing sustainability within teaching and research practices, ultimately improving institutional environmental performance. Based on this theoretical and empirical grounding, the following hypotheses are proposed: H4a: GWE positively affects employees' in-role Green Work Behavior in HEIs; H4b: GWE positively affects employees' extra-role Green Work Behavior in HEIs.

The Mediating Role of GWE

GWE has been conceptualized as a psychosomatic condition in which individuals exhibit substantial enthusiasm, vigor, and absorption in carrying out environmentally responsible tasks. Drawing upon the JDR framework, GHRM practices play as valuable organizational resources that can reinforce employee engagement by providing work opportunities and the necessary institutional support (Haque et al., 2024). When individuals demonstrate amplified levels of GWE, they tend to integrate sustainability principles into their professional responsibilities and actively support sustainability-friendly initiatives (Albrecht et al., 2023). Previous empirical investigations across diverse organizational contexts have highlighted the mediation effect of GWE in translating sustainability strategies into actual pro-environmental behaviors among employees. Within the hospitality sector, Abualigah et al. (2023) found that GHRM initiatives enhanced employee engagement, which then fostered both task-related and discretionary green behaviors. Similarly, in the information technology industry, Ojo et al. (2022) revealed that GHRM significantly promoted employees' green engagement, motivating them to adopt and reinforce eco-conscious practices in the workplace. In Higher Education Institutions (HEIs), the link between GHRM and environmentally responsible behaviors is also expected to be mediated by GWE, since universities and colleges rely extensively on the commitment of academic and administrative staff to implement sustainability policies (Aboramadan, 2022). When HEIs

introduce green-oriented training programs and establish performance-based incentives, employees are more likely to feel energized and committed to ecological objectives, thereby demonstrating stronger in-role and extra-role green behaviors (Aboramadan, 2022). Accordingly, this study proposes the following hypotheses:

H5a: GWE mediates the relationship between GHRM and employees' in-role green behavior.

H5b: GWE mediates the relationship between GHRM and employees' extra-role green behavior.

On the basis of these empirical findings, the conceptual model of this research, incorporating all proposed hypotheses, is illustrated in Figure 1.

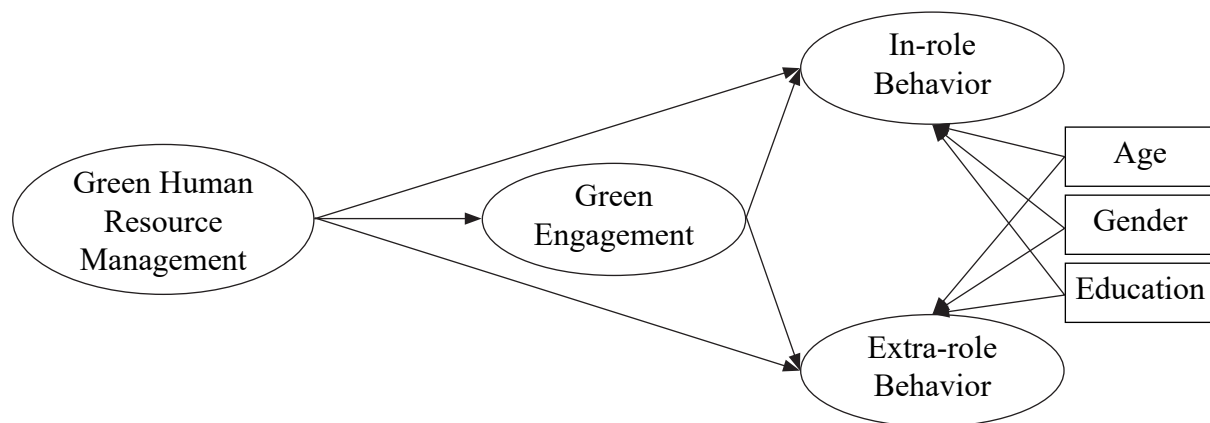


Figure 1 Proposed Research Framework

Methodology

Research Context and Population

This research was carried out among employees of four higher education institutions located in Shenyang, the largest urban center in northeastern China. The research population comprised of both teaching faculty and administrative personnel. Shenyang was chosen as the sampling site because it represents the capital of Liaoning Province and is historically known as one of the country's primary industrial cities. Its long-standing dependence on heavy industry has resulted in severe ecological pressures, including deteriorating air quality, high levels of particulate matter, and excessive carbon emissions (CEIC, 2023). The city has therefore been a key target for governmental environmental policies and sustainability initiatives that extend to organizational practices, including those of universities. In addition, Shenyang functions as the region's major educational hub, hosting more than 40 HEIs with over 710,000 full-time students and tens of thousands of staff members. Because of this concentration of institutions and their varied levels of engagement with sustainability, Shenyang provides a suitable context for examining GHRM and green behaviors in academic workplaces.

Sampling and Data Collection

Following Yamane's (1973) formula for sample size determination, the minimum required number of respondents was estimated at 400. To meet this target, 600 survey invitations were distributed to two universities in Shenyang, and a pilot test using 200 initial responses

was conducted to assess the suitability of the research design. The findings showed adequate reliability of the scales, with Cronbach's alpha values for each scale dimension being 0.893 (GHRM), 0.869 (GWE), 0.896 (in-role behavior), and 0.862 (extra-role behavior), which justified the appropriateness of a larger-scale survey. After receiving the approval of university administrators, the formal data collection was carried out using online self-administered questionnaires distributed via email and the WeChat platform. Surveyors facilitated the circulation of links, and participants were informed of the study's objectives, confidentiality guarantees, and data privacy rights through a cover letter included in the Microsoft Forms questionnaire. Data were collected over three weeks in April 2025, yielding 400 usable responses, equivalent to a 67 percent effective response rate.

Research Instruments and Measures

All measurement instruments were adapted from previously validated sources. The GHRM scale was originally designed by Dumont et al. (2017), comprising six items, while work engagement was measured using the six-item scale developed by Schaufeli et al. (2006) and later applied by Aboramadan (2022). Employee green work behavior was assessed through the scale of Bissing-Olson et al. (2013), which includes three items for in-role green behavior and three items for extra-role green behavior. Responses for all items were measured on a seven-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). Before the dissemination of the questionnaire, it was translated into simplified Chinese and back-translated into English by bilingual experts to ensure the accuracy of the translated texts. Results from the pilot study confirmed satisfactory reliability, with Cronbach's alpha values for all scales exceeding the commonly accepted threshold of 0.70, thus supporting the internal consistency of the measurement scales.

Data Analysis and Control Variables

The statistical procedure started with preliminary diagnostics, including evaluations of normal data distribution, common method bias, and scale validity and reliability by utilizing SPSS and AMOS programs, except using the Microsoft Excel program for calculating the HTMT ratio. Tests for multicollinearity were subsequently performed before proceeding to the main analysis. Structural Equation Modeling (SEM) using AMOS, coupled with path analysis and mediation testing, served as the primary analytical technique, while SPSS was employed for descriptive and preliminary statistics. Control variables were included to account for demographic impacts that may affect pro-environmental workplace behaviors. Previous studies have suggested that age can influence individual participation in sustainability-related activities (Pham et al., 2024), while gender has been related to differential levels of involvement, with female employees often showing higher engagement in sustainability programs compared to their male counterparts (Altassan & Ahmad, 2024; Islam et al., 2023). Educational attainment has also been underlined as a predictor of green behavior, as individuals with advanced degrees are often more capable of incorporating environmental considerations into their professional roles and research activities (Fawehinmi et al., 2020).

Results

The demographic characteristics of the respondents are summarized in Table 1, indicating that a slightly higher proportion of the participants were male, just over 53 percent. The majority

of respondents were between the ages of 27 and 58, equaling just over 77 percent, indicating a dominance of individuals within the mid-career and late-career stages. Educational types further indicated that a substantial portion of the sample held a PhD qualification, equaling over 44 percent, signifying a highly educated participant group.

Table 1 Sampled Participants' Profile

Variable	Category	Frequency	Percent
Gender	Women	186	46.5
	Men	214	53.5
Age Group	18-26	62	15.5
	27-42	144	36.0
	43-58	167	41.8
	59 or above	27	6.8
Education Type	High School	8	2.0
	Bachelor	46	11.5
	Master	156	39.0
	PhD	177	44.3
	Post-Doctoral	13	3.3

The assessment of data normality indicated that the skewness and kurtosis values fell within the recommended thresholds, ranging between -1.1 and 0.8 for skewness and -2.0 to 1.0 for kurtosis. These values align with the guidelines provided by Hair et al. (2019), signifying that the data follows a normal distribution pattern. Convergent validity was assessed by initially evaluating the factor loadings of each item. Items with loadings below the acceptable cutoff were discarded, after which composite reliability and Average Variance Extracted (AVE) values were computed. Both indices exceeded their respective minimum requirements, confirming the scale's convergent validity (shown in Table 2). Furthermore, the Heterotrait-Monotrait Ratio (HTMT) values were below the maximum acceptable limit of 0.85, thus verifying that discriminant validity was adequately achieved (Henseler et al., 2015).

The consistency of the measurement scale was further assessed using Cronbach's alpha values, all of which surpassed the generally accepted threshold of 0.6 (Henseler et al., 2015). This result demonstrated that the scale maintained acceptable reliability. Additionally, potential multicollinearity was examined through the Variance Inflation Factor (VIF) values. The VIF scores for the independent constructs, including GHRM (1.2) and GWE (1.2), remained well below the satisfactory value of 3.3 (Petter et al., 2007), indicating that multicollinearity did not pose a concern in the proposed structural model. Furthermore, the issue of Common Method Bias (CMB) was examined using Harman's single-factor test. The analysis indicated that the largest variance explained by a single factor was not over 42 percent, which is below the critical

threshold of 50 percent. This result provides evidence that CMB was not a significant issue in the study.

Table 2 Reliability and Validity

Dimension	CR	AVE	GWE	GHRM	In-role	Extra-role	Reliability
GWE	0.86	0.52	0.72	-	-	-	0.90
GHRM	0.91	0.63	0.40	0.80	-	-	0.87
In-role	0.90	0.74	0.63	0.41	0.86	-	0.89
Extra-role	0.86	0.68	0.60	0.41	0.53	0.82	0.86

Table 3 HTMT Ratio

HTMT RATIO	GWE	Extra-role	In-role	GHRM
GWE	-	-	-	-
Extra-role	0.52	-	-	-
In-role	0.57	0.37	-	-
GHRM	0.38	0.37	0.39	-

The SEM outcomes displayed in Table 4 reveal that the proposed framework demonstrated satisfactory goodness of fit, where the values of the chi-square to degrees of freedom ratio, the Goodness-of-Fit index (GFI), the Comparative Fit Index (CFI), and the Root Mean Square Error of Approximation (RMSEA) all fell within the thresholds recommended in the literature, thereby confirming the adequacy of the model fit (Kline, 2011). Furthermore, the findings highlight that GHRM and GWE exerted significant positive influences on employees' green behavioral outcomes. In examining the control variables, gender was the only factor that produced a statistically significant effect, whereas educational attainment and age did not yield sizeable impacts on employees' green behaviors. Consequently, these results provide empirical support for hypothesized relationships in H1-4, as shown in Figure 2.

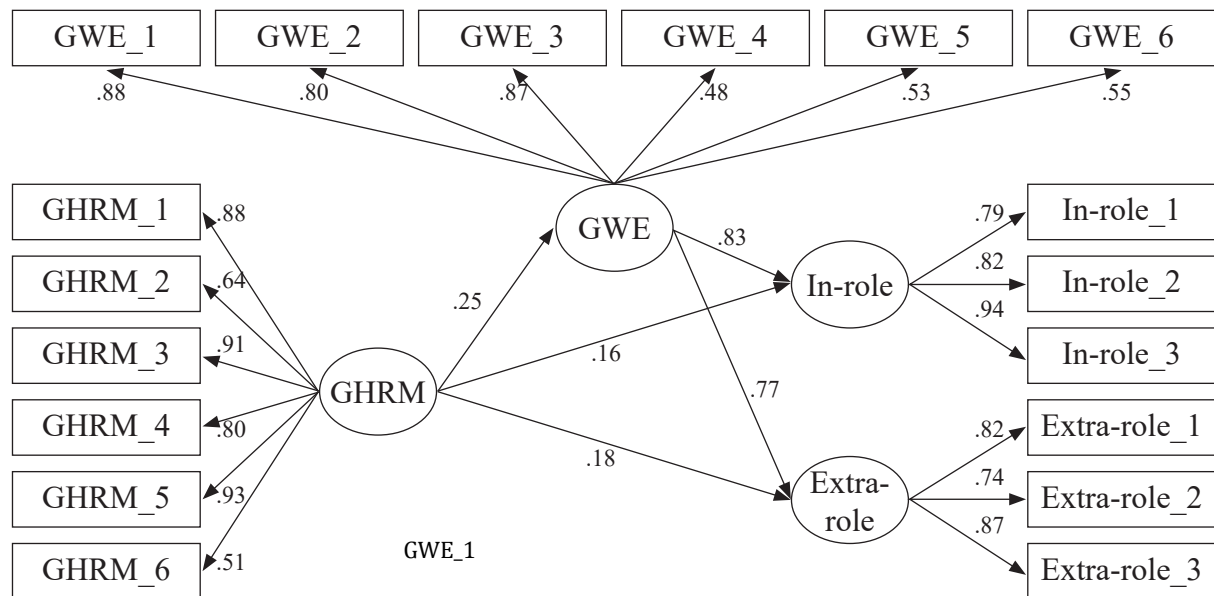


Figure 2 Modified Research Framework

Table 4 Path Analysis Estimate

			Estimate	S.E.	C.R.	P
GWE	<---	GHRM	.25	.04	6.8	***
In-role	<---	GWE	.83	.11	7.9	***
Extra-role	<---	GWE	.77	.11	7.3	***
In-role	<---	GHRM	.16	.05	3.2	.00
Extra-role	<---	GHRM	.18	.05	3.4	***
Extra-role	<---	Education	.12	.07	1.7	.08
Extra-role	<---	Gender	.38	.11	3.5	***
Extra-role	<---	Age	-.05	.07	-.78	.44
In-role	<---	Education	-.01	.06	-.18	.86
In-role	<---	Gender	.25	.10	2.5	.01
In-role	<---	Age	-.04	.06	-.59	.55

Source: Model fit indices: $\chi^2 = 3.58$ ($P < 0.00$), $df = 174$, $\chi^2/df = 1.76$, CFI = .97, GFI = .93, NFI = .94, TLI = .97, RMSEA = .04, *** = .001 significance level

The findings presented in Table 5 indicated that GWE exerts a stronger influence on employees' green behaviors compared to GHRM, although the direct relationships of both variables were statistically significant. Furthermore, the results indicate that the indirect impact of GHRM on employees' green behaviors, mediated through GWE, was greater than its direct influence. This finding suggests that GWE plays a partial mediating role in the relationship

between GHRM and employees' environmentally responsible actions. Consequently, both Hypothesis 5a and Hypothesis 5b are empirically validated.

Table 5 Mediating Effect of GWE

Relationship	Estimate	Bootstrapping		2-Tailed Significance
Bias-corrected 95% CI				
Direct Effects		LB	UB	
GHRM - GWE	.25	.16	.36	.001
GHRM - Extra-role	.18	.07	.28	.003
GHRM - In- role	.16	.05	.26	.008
GWE - Extra-role	.77	.58	1.00	.001
GWE - In- role	.83	.62	1.10	.001
Indirect Effects				
GHRM - Extra-role	.19	.13	.27	.000
GHRM - In- role	.21	.15	.29	.001

Discussion

The present study demonstrates that GHRM has a significant association with both in-role and extra-role environmentally responsible behaviors. This outcome is consistent with the findings of Dumont et al. (2017), who underlined the existence of a positive linkage between GHRM practices and employees' ecological conduct. The results also strengthen the relevance of SET, which posits that employees tend to reciprocate organizational support for environmental initiatives by engaging in job-specific as well as discretionary eco-friendly actions (Islam et al., 2021). Additionally, this research establishes a positive relationship between GHRM and GWE, aligning with the JDR framework that emphasizes how workplace resources foster motivation and involvement. Similar conclusions were also reported by Haque et al. (2024), who explained that exposure to sustainable HRM practices enhances employees' engagement at work. Further evidence from the current research reveals that GWE exerts positive impacts on both in-role and extra-role green behaviors. This suggests that employees who display higher levels of work engagement are more inclined to cultivate trusting relationships with their organizations, thereby resulting in environmentally responsible practices. Such findings are consistent with prior research, such as Ababneh (2021), who argued that engagement partially explains the association between GHRM and pro-environmental behaviors in organizational settings. Similarly, Kim et al. (2023) demonstrated that organizational leadership, when paired with GHRM practices, improves employee engagement and reinforces commitment to both mandatory and voluntary environmental activities. Moreover, the results underline the significant mediating role of GWE in the connection between GHRM and employees' ecological behaviors. This suggests that the influence of GHRM on workplace sustainability behaviors is not exclusively direct but also

functions through employees' engagement, as previously emphasized by Kania (2024). Similar evidence was also presented by Aboramadan (2022), who reported that GHRM practices not only enhance employee engagement but also promote pro-environmental behaviors, signifying that engagement serves as a crucial mechanism in translating organizational sustainability initiatives into employee action.

Conclusion

The present study advances the discussion on GHRM by positioning it under the context of higher education, a sector where academic attention remains relatively narrow despite rising worldwide interest in sustainability. While the GHRM literature continues to expand, prior research has accentuated the necessity of examining how such practices function in academic institutions, which serves a pivotal role in cultivating environmentally responsible cultures (Miah et al., 2024). Responding to this necessity, the study developed and empirically validated a conceptual framework that explores the interaction between GHRM practices and sustainable outcomes. Specifically, the research incorporated GWE not only as a predictor but also as a mediation factor, thus offering a more nuanced understanding of its impact on green behaviors. This approach differs from the present work from earlier studies that relied on alternative mediators such as green knowledge, green passion, or empowerment (Miah et al., 2024). Additionally, unlike previous studies that tended to isolate obligatory work-related environmental actions from voluntary citizenship-oriented practices, this study simultaneously considered both forms of behavior as outcomes of GHRM (Wang et al., 2025). From a managerial viewpoint, the findings underline the necessity for higher education institutions to adopt proactive green strategies and institutionalize them within their operational frameworks. Universities and colleges, in particular, can position their workforce as advocates of sustainability by implementing GHRM practices into daily organizational routines. Implementing policies that strengthen workplace green behaviors enables these institutions to address ecological challenges more effectively, thereby contributing not only to organizational success but also to broader social sustainability. This requires HR professionals to integrate environmentally oriented initiatives into other strategic HRM priorities, such as performance and commitment-based systems. Importantly, such initiatives should extend beyond symbolic actions and encompass systematic staffing approaches, tailored green training programs, robust performance evaluation mechanisms, and comprehensive reward structures that motivate environmentally responsible behavior.

Limitations and Future Research

While the present research provides valuable contributions, several limitations require careful consideration. First, the study results rely exclusively on employees' self-reported responses, which introduces the possibility of social desirability and subjective bias that may influence the accuracy of the results. Second, the dataset was derived from a selected group of HEIs located within a single first-tier city in China, thus narrowing the diversity of perspectives and institutional contexts. Third, the cross-sectional nature of the design limits the capacity to establish definitive causal relationships between the proposed predictors and the observed outcomes. Fourth, the analysis focused solely on one mediating construct, GWE, in explaining the linkage between GHRM and employees' green behavioral outcomes, leaving other potential

factors unexplored. Finally, because the sample was confined to the context of Chinese HEIs, the extent to which the findings can be generalized to other industrial sectors or cultural environments remains limited. These limitations simultaneously highlight several promising areas and aspects for future research. First of all, to address the issue of self-reported bias, future studies could integrate multiple sources of evidence information including supervisor evaluations, peer assessments, interviews, or objective behavioral indicators, thus increasing the robustness of conclusions. Secondly, to improve the external validity of the findings, collecting broader samples to encompass HEIs across diverse regions and economic tiers within China would be beneficial. Moreover, cross-national or cross-cultural comparative studies could provide richer insights into the ways institutional and cultural contexts shape the effectiveness of GHRM practices. Thirdly, employing longitudinal research designs would also allow capturing relationship dynamics in employees' green behaviors and make stronger inferences about the causal connection between GHRM, GWE, and behavioral outcomes. Fourthly, besides GWE, future studies should examine alternative mediation factors, including perceptions of organizational green support, the role of environmentally oriented leadership, or the influence of green workplace climate, to construct a more holistic framework under which GHRM operates. Furthermore, examining moderation influences such as employees' levels of environmental commitment or the organization's adaptive green capacities could help to specify boundary conditions of GHRM effectiveness. Lastly, extending research to other industries, including manufacturing, healthcare, and the public sector, would discover sector-specific challenges and opportunities, thereby contributing to a more comprehensive understanding of the applicability and impact of GHRM across diverse organizational landscapes.

Recommendation

From the study's outcomes, several recommendations can be put forward for both scholars and managerial professionals. First, higher education institutions should normalize GHRM within core HRM policies to stimulate both in-role and extra-role green behaviors. In the case of Chinese universities, this could involve the creation of dedicated sustainability teams responsible for overseeing the design and execution of green strategies. Recruitment efforts should favor candidates who possess pro-environmental values and proficiencies, while training and professional development initiatives can be modified to strengthen employees' environmental knowledge and skills, allowing them to contribute significantly both within and outside their current roles. Furthermore, universities can integrate sustainability metrics into appraisal systems and offer both financial and non-financial rewards, such as additional leave or professional growth opportunities, to encourage behaviors like paper conservation and energy efficiency. Second, the recognition of GWE as a key mediating factor between GHRM and green outcomes highlights the importance of cultivating an institutional climate that vigorously supports employee engagement in sustainability. This can be achieved by fostering collaborative innovation hubs, rewarding employee-inspired environmental initiatives, and encouraging participatory decision-making in sustainability-related policy development. Establishing partnerships across universities and with external parties, including governmental agencies, industries, and international organizations, can further promote the exchange of knowledge and industrial best practices. Initiatives such as multi-disciplinary conferences, joint research collaborations, and community-focused environmental projects can deepen engagement and

broaden the impact of green behaviors. Universities may also benefit from employing subtle behavioral interventions, such as reminders to minimize printing, provision of waste sorting and recycling facilities, and promotion of adopting digital platforms, all of which can enhance GWE and lower ecological footprints in higher education settings. Finally, universities should establish continuing monitoring systems to evaluate the effectiveness of GHRM initiatives. Regular environmental audits, collection of employee feedback on the effectiveness of sustainability programs, and benchmarking against international best practices can provide valuable insights for continuous improvement. By implementing such evaluative mechanisms, Chinese HEIs can refine their strategies, strengthen accountability, and move toward achieving long-term sustainability targets.

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Psychological Antecedents of Trust in Work-based Education in Bangkok

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Abstract

Trust is a critical determinant of successful collaboration and performance in multicultural Work-based Education (WBE) programs, yet limited research has examined its psychological antecedents in cross-cultural internship contexts. Drawing on Social Cognitive Theory (SCT), this study investigates how emotional intelligence (EQ), proactive personality, resilience, growth mindset, and empathy influence trust formation among interns in multicultural workplace environments. A cross-sectional survey was conducted with 429 university students enrolled in WBE programs in Thailand, all of whom had completed at least three months of internship experience. Data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) to examine direct effects and the influence of control variables, including gender, age, academic year, GPAX, internship duration, and internship days per week. EQ ($\beta = 0.215$, $p < 0.001$), Growth mindset ($\beta = 0.216$, $p < 0.001$), and Empathy ($\beta = 0.339$, $p < 0.001$) showed significant positive relationships with trust, supporting H1, H4, and H5. Proactive personality ($\beta = 0.073$, $p = 0.064$) and resilience ($\beta = 0.056$, $p = 0.121$) were not significant predictors, leading to the rejection of H2 and H3. Among control variables, only gender exhibited a small but significant effect on trust ($\beta = -0.079$, $p = 0.049$). The findings underscore the pivotal role of interpersonal and cognitive-emotional attributes, particularly empathy, EQ, and growth mindset, in fostering trust in multicultural WBE settings. These results refine SCT's application to relational outcomes, demonstrating that attributes directly facilitating interpersonal connection are more influential for rapid trust formation than individual behavioral orientations or coping mechanisms, and offering practical implications for universities, organizations, and policymakers to design targeted interventions that strengthen trust-building competencies in future professionals.

Keywords: Emotional Intelligence, Growth Mindset, Empathy, Trust, Work-based Education

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Introduction

The modern labor market demands more than just technical expertise (Benabed et al., 2022; Li, 2024; Rotatori et al., 2021; Weerasombat et al., 2022). As industries continue to evolve due to digital transformation and economic restructuring, graduates are increasingly required to possess a combination of professional and psychological competencies in order to succeed in real-world environments (Alomari, 2023; Diugowanets & Kurei, 2021; Shkurat & Uzbek, 2024; World Economic Forum, 2025). In Thailand, the Thailand 4.0 initiative promotes a value-based economy driven by innovation and human capital development (Li, 2024; Naruetharadhol et al., 2022). Within this national framework, Work-based Education (WBE) programs, particularly internships, have become essential for bridging the gap between academic learning and workplace readiness (Mitsea et al., 2021; Panyapiwat Institute of Management, 2025).

Internships in WBE settings offer students direct exposure to professional expectations while fostering the development of both technical and soft skills (Fergusson, 2022; Finley, 2023). Among the latter, trust stands out as a key relational factor that can significantly shape the quality of the internship experience (Alsayed, 2022; Bin Ibrahim, 2024; Chen & Sriphon, 2022). Trust between interns and their supervisors or colleagues plays a vital role in encouraging psychological safety, facilitating open feedback, supporting learning engagement, and enhancing an intern's integration within the workplace (Chen & Sriphon, 2022; Dirks & de Jong, 2022; Giannoccaro & Iftikhar, 2022).

Despite its recognized importance, trust has not been extensively studied within the context of WBE internships in emerging economies such as Thailand (Kattiyapornpong & Almeida, 2022; Scott & Guan, 2023). While many studies have focused on trust in long-term employment relationships, few have examined how interns build trust during short-term placements (Bin Ibrahim, 2024; Dirks & de Jong, 2022; Nyhan & Marlowe Jr, 1997). Since internships are often limited in duration and inherently transitional, identifying the psychological traits that help students form trusting relationships can help stakeholders create more meaningful and supportive learning environments.

This study focuses on five psychological traits: emotional intelligence, proactive personality, resilience, growth mindset, and empathy, and their influence on internship performance. Trust is examined as a mediating factor that may explain how these traits impact performance outcomes. The study is grounded in Social Cognitive Theory (SCT), which posits that human behavior is shaped by the interaction of personal characteristics, behavioral patterns, and environmental influences (Bandura, 1978, 1986, 1999; Bandura & Walters, 1977; Bandura & Wessels, 1997). Through this lens, traits such as emotional intelligence and empathy are seen as enabling mechanisms that help interns self-regulate, observe social cues, and develop self-efficacy, ultimately influencing their ability to build trust in workplace settings (Afifah et al., 2024; Ahad et al., 2021; Atta et al., 2024; Bandura & Wessels, 1997; Lee & Lim, 2023).

Existing literature supports the role of these traits in academic and workplace performance. For example, emotional intelligence enhances social awareness and communication (Afifah et al., 2024; Quílez-Robres et al., 2023; Ratasuk, 2023a), a growth mindset promotes continuous learning and adaptability (Macnamara & Burgoyne, 2023; Rogers et al., 2023), and empathy facilitates interpersonal understanding and cooperation (Guidi & Traversa, 2021; Nembhard et al., 2023; Weisz & Cikara, 2021). However, few studies have explored these variables together or investigated their relationship with trust in the context of university internships, particularly in non-Western cultural settings.

Research Objectives

1. Investigate how five psychological attributes influence internship performance, both directly and indirectly through the mediating role of trust.
2. Focus on university students who have completed at least three months of Work-based Education (WBE) internships in Bangkok.
3. Contribute to academic understanding by extending Social Cognitive Theory to relational outcomes in work-based learning, and offer practical insights for improving internship programs in universities, host organizations, and policy frameworks across Thailand.

Literature Review

This literature review examines key psychological factors influencing trust in work-based education programs. It highlights relevant theories and prior research to frame the study's focus on emotional intelligence, proactive personality, resilience, growth mindset, and empathy in building trust among interns.

Trust

Trust refers to an individual's confidence in the reliability, integrity, and fairness of colleagues, supervisors, and the broader organizational system (Braganza et al., 2021; Dirks & de Jong, 2022; Ratasuk, 2022; Schilke et al., 2021). It is commonly defined as a willingness to be vulnerable to another party based on positive expectations of their intentions and behaviors. In organizational and educational contexts, trust plays a foundational role in fostering open communication, collaboration, psychological safety, and team cohesion (Bin Ibrahim, 2024; Chen & Sriphon, 2022). Dirks and de Jong (2022) emphasize that trust is a dynamic construct with cognitive, emotional, and behavioral dimensions, shaped by perceptions of benevolence, reliability, and integrity. In internship settings, trust is particularly relevant due to the short-term nature of the experience and the need for interns to quickly build relationships with supervisors and peers (Bin Ibrahim, 2024; Lin & Chen, 2022; Ratasuk & Charoensukmongkol, 2019). When interns perceive trust in their learning environment, they are more likely to engage in knowledge sharing, seek feedback, and demonstrate initiative. As bin Ibrahim (2024) notes, trust enhances supervisor-employee interaction quality, contributing to both task performance and emotional engagement. Trust also provides a psychological foundation for navigating ambiguity and unfamiliar tasks, which are common in real-world work environments (Hao & Han, 2022). In this study, trust is examined as a mediating variable between psychological attributes, such as emotional intelligence, empathy, and growth mindset, and internship performance. Interns who experience trust in their work environment are expected to feel more supported, motivated, and willing to take interpersonal risks that foster learning. By focusing on trust as a relational outcome, this study contributes to the literature by clarifying how individual psychological traits influence the intern's ability to build meaningful professional relationships, particularly within the cultural and organizational context of Thai WBE programs.

Emotional Intelligence (EQ)

Emotional Intelligence (EQ) refers to an individual's capacity to perceive, understand, and regulate emotions in oneself and others to support effective interpersonal interactions and decision making (Afifah et al., 2024; Quílez-Robres et al., 2023; Ratasuk, 2023a). This

competency includes skills such as empathy, emotional awareness, self-regulation, and social adaptability, which are critical for navigating complex social environments. In academic and organizational research, EQ has been identified as a crucial determinant of various outcomes, including leadership effectiveness, teamwork, communication, and psychological well-being (Coronado-Maldonado & Benítez-Márquez, 2023; Görgens-Ekermans & Roux, 2021; Grobelny et al., 2021). High EQ individuals tend to manage stress more effectively and foster trustful, cooperative workplace relationships (Alsayed, 2022; Mishra & Dev, 2024; Prasse, 2021).

Empirical studies support EQ's impact on professional and academic success. For example, Baba et al. (2021) found that leaders' emotional intelligence significantly influenced transformational leadership among nursing staff during the COVID-19 pandemic. Likewise, Alzoubi and Aziz (2021) linked EQ to reduced burnout and higher engagement among university students, while Ahad et al. (2021) demonstrated a positive correlation between EQ and academic performance in vocational settings. These findings underscore EQ's broader significance in enhancing motivation, reducing stress, and improving interpersonal communication skills that are vital in internship environments.

This study applies EQ as a key psychological factor expected to influence trust formation between interns and workplace stakeholders. In the short term, the socially intensive setting of internships, particularly within culturally nuanced environments like Thailand, EQ supports interns in navigating unfamiliar social dynamics, interpreting feedback constructively, and building rapport with supervisors and colleagues. In line with Social Cognitive Theory, EQ contributes to the development of self-efficacy through emotional regulation and adaptive learning (Bandura & Wessels, 1997). Therefore, this study investigates how EQ fosters trust and promotes successful adjustment and performance within Work-based Education (WBE) programs in Thailand.

Proactive Personality

Proactive personality refers to a stable individual disposition characterized by the tendency to take initiative, anticipate and act on opportunities, and persist in efforts to bring about meaningful change (Bateman & Crant, 1993). Rather than passively responding to environmental conditions, individuals with a proactive personality actively shape their surroundings through self-directed behavior (Irwin et al., 2022; Lee et al., 2023). This trait has been widely studied in organizational psychology due to its strong links to innovation, leadership, and long-term career success. Proactive individuals tend to exhibit behaviors such as problem-solving, networking, and seeking feedback, all of which enhance their ability to integrate and contribute within workplace environments (Rutman, 2023; Seibert et al., 2001).

Recent research further emphasizes the relational benefits of proactivity. Proactive interns tend to earn supervisors' trust by consistently demonstrating initiative, reliability, and the ability to navigate workplace challenges (Irwin et al., 2022; Lin & Chen, 2022; Rutman, 2023). Trust has been identified as a key mediating mechanism linking proactive personality to improved job outcomes (Hao & Han, 2022; Lee & Lim, 2023). For example, Hao and Han (2022) found that trust in leaders significantly enhances the relationship between proactive personality and voice behavior, while Irwin et al. (2022) showed that trust facilitates access to feedback and developmental opportunities. These findings suggest that trust is not only an outcome of proactive behavior but also a channel through which proactivity leads to performance enhancement.

In this study, proactive personality is examined as a potential predictor of trust in internship settings. Given the short duration and high demands of WBE internships, interns who take initiative and engage proactively are expected to be perceived as dependable and motivated, thereby fostering rapid trust development. Understanding this dynamic provides valuable insight into how interns can strategically build professional relationships and how host organizations can support early trust-building. This perspective also contributes to the broader literature by linking proactive personality to trust within culturally specific, time-bound work-based education environments.

Resilience

Resilience is broadly defined as the ability to recover from adversity, adapt positively to stress, and maintain psychological well-being under pressure (Diab & Green, 2024; Manner-Beldeon et al., 2024; Pantaruk et al., 2025). It involves flexibility, perseverance, and emotional regulation that allow individuals to sustain functioning in high-pressure or uncertain environments. In academic and organizational research, resilience has been widely acknowledged as a protective factor that promotes mental health, coping capacity, and sustained task performance (Nair et al., 2023). These qualities are especially valuable in internship settings, where individuals are often faced with unfamiliar tasks and social dynamics within limited timeframes.

Resilient interns demonstrate consistent performance and adaptability, which strengthens their credibility and encourages others to perceive them as dependable (Dirks & de Jong, 2022). This reliability fosters trust, which in turn opens access to professional support, feedback, and developmental opportunities. Empirical findings by Giannoccaro and Iftikhar (2022) illustrate, through agent-based simulations, how trust enhances the adaptive capacity of resilient systems, which is a mechanism that can similarly apply to individual workplace behaviors. In this study, resilience is therefore explored not only as a direct psychological asset but also as a potential antecedent to trust-building in the internship environment.

By consistently demonstrating problem-solving ability and emotional control, resilient interns are more likely to gain the trust of supervisors and colleagues, which in turn reinforces engagement and enhances internship performance. This highlights the role of resilience in converting individual adaptability into relational strength. Within the cultural and organizational landscape of Thai WBE programs, understanding how resilience influences trust contributes important insights into how students succeed in transitional, high-expectation settings. This application advances the literature by positioning resilience as both a personal and relational asset in early career development.

Growth Mindset

Growth mindset refers to the belief that intelligence and abilities can be developed through sustained effort, learning, and perseverance (Macnamara & Burgoyne, 2023; Yeh et al., 2023). Individuals with a growth mindset tend to embrace challenges, view setbacks as learning opportunities, and actively seek feedback to improve. This mindset has been widely recognized in educational and organizational psychology for its role in promoting motivation, adaptability, and long-term achievement (Rogers et al., 2023; Zarrinabadi et al., 2022). For example, Nalipay et al. (2021) found that targeted growth mindset interventions significantly reduced test anxiety and improved academic engagement, primarily when focused on beliefs about learning and intelligence. Similarly, Billingsley et al. (2023) demonstrated that a growth mindset predicts

higher levels of grit and academic success, reinforcing its relevance for persistence and learning effectiveness.

In workplace settings, especially in early career training such as internships, a growth mindset supports openness to feedback, continuous skill development, and proactive engagement with new responsibilities. As Zarrinabadi et al. (2022) illustrated, the growth mindset also contributes to the formation of positive learning emotions and a strong self-concept, both critical for navigating unfamiliar professional environments. Interns who demonstrate a growth mindset are often perceived as teachable and dedicated, qualities that can foster trust in supervisor-intern relationships. This aligns with Social Cognitive Theory, which emphasizes that self-directed learning and personal beliefs, such as a growth mindset, reinforce self-efficacy and influence behavioral adaptation (Bandura, 1978; Bandura & Wessels, 1997).

In this study, growth mindset is examined as a psychological attribute that enhances trust-building and internship performance. Interns who consistently demonstrate effort, receptiveness to feedback, and persistence in the face of difficulty are more likely to gain supervisors' trust and perform effectively in WBE settings. This approach extends the application of growth mindset theory to relational dynamics in work-based education, particularly within the cultural and organizational context of internships in Thailand.

Empathy

Empathy refers to the ability to understand, share, and respond to the emotions of others compassionately and constructively (Guidi & Traversa, 2021; Nembhard et al., 2023; Ratasuk et al., 2025; Weisz & Cikara, 2021). It encompasses both cognitive and affective components and plays a crucial role in promoting team cohesion, emotional well-being, and effective interpersonal interactions (Bedir et al., 2023; Zivkovic, 2022). For example, Bedir et al. (2023) highlighted empathy's role in strengthening social support and mental health among university students, while Zivkovic (2022) emphasized its importance in leadership during organizational crises. In workplace contexts, empathy facilitates collaboration, enhances communication, and contributes to favorable conflict resolution (Bedir et al., 2023; Raza et al., 2023). From a service perspective, Raza et al. (2023) described empathy as the cognitive ability of employees to understand customer concerns, reinforcing its value in professional and interpersonal effectiveness.

In internship environments, empathy becomes especially critical as students transition into professional roles. It helps them decode unspoken social norms, respond appropriately to others' needs, and integrate more smoothly into workplace cultures. Bandura's Social Cognitive Theory (1978, 1986) provides a valuable framework for understanding how empathy operates in these contexts. Through observational learning and social interaction, empathetic interns acquire professional behaviors, build meaningful relationships, and engage in effective communication (Bandura & Wessels, 1997). Chong et al. (2021) further emphasized that empathy enhances adaptability and collaborative functioning in dynamic learning environments, reinforcing its relevance to internship success.

In this study, empathy is examined as a key psychological attribute that influences both trust-building and internship performance. Interns with high empathy are more likely to foster psychological safety, contribute to supportive team environments, and receive constructive feedback from supervisors. These relational advantages enable deeper learning, higher engagement, and stronger performance. By integrating empathy into the trust-performance

framework, this research adds to a growing body of evidence showing that emotional and interpersonal competencies are critical to successful outcomes in Work-Based Education programs.

Social Cognitive Theory (SCT)

Social Cognitive Theory (SCT), introduced by Bandura (1986), explains human behavior as the result of dynamic and reciprocal interactions between personal factors, behaviors, and environmental influences. Key constructs include self-efficacy, or belief in one's capabilities (Bandura, 1982), self-regulation, which involves goal-setting and self-monitoring (Bandura, 1991), and observational learning, where individuals learn by watching others (Bandura & Walters, 1977). These mechanisms are central to how people adapt, learn, and perform in real-world contexts.

SCT emphasizes reciprocal determinism, the idea that individuals shape and are shaped by their environment through continuous feedback loops (Bandura, 1978). In work-based learning, interns observe professional models, set personal goals, and adjust behavior based on feedback and support, reinforcing SCT's principles (Cook & Artino Jr, 2016; Gibson, 2004). The theory is widely applied to education, health, and organizational settings to examine behavioral change and learning outcomes (Brown et al., 2011; Lent et al., 1994).

In this study, SCT provides the foundation for understanding how psychological traits, such as emotional intelligence and growth mindset, influence internship performance through mechanisms like trust, learning behaviors, and motivation. By applying SCT in the WBE context in Thailand, the research highlights how personal agency, environmental cues, and social learning shape intern success in culturally diverse, real-world settings.

Hypothesis Development

This study is grounded in Social Cognitive Theory (SCT), which explains behavior as a result of dynamic interactions between personal factors, behavior, and the environment (Bandura, 1986). SCT highlights that individuals learn through observation, self-regulation, and the development of self-efficacy, which refers to beliefs about their ability to succeed in specific situations (Bandura & Wessels, 1997; Islam et al., 2023). In the context of Work-based Education (WBE), where interns must quickly adapt to professional environments, SCT provides a valuable lens to examine how internal psychological attributes influence performance and trust-building behaviors. This study focuses on five key personal factors: emotional intelligence, proactive personality, resilience, growth mindset, and empathy. Emotional intelligence enables interns to manage stress, regulate emotions, and communicate effectively, thereby enhancing workplace performance (Afifah et al., 2024; Liu et al., 2022). Proactive personality reflects personal agency, aligning with SCT's view of individuals as active participants who shape their environment through initiative and feedback seeking (Chong et al., 2021; Zhang et al., 2022). Resilience supports self-regulation by allowing interns to persist through challenges and maintain performance under pressure (Bandura, 1986; Nakhostin-Khayyat et al., 2024). A growth mindset, grounded in self-efficacy, fosters persistence and continuous learning in response to feedback and difficulty (Bandura, 1986; Tan et al., 2023). Finally, empathy enhances social learning and trust building by helping interns interpret social cues, collaborate effectively, and navigate workplace norms (Lee & Lim, 2023; Raza et al., 2023). These psychological traits are expected to influence internship performance directly and indirectly through the development of trust, offering a comprehensive understanding of intern success within SCT's reciprocal framework.

Emotional Intelligence and Trust

Emotional Intelligence (EQ) enhances interns' ability to regulate emotions, interpret social cues, and communicate effectively, all of which contribute to building trust in workplace relationships (Alsayed, 2022; Prasse, 2021). According to Social Cognitive Theory (SCT), such self-regulatory and interpersonal competencies foster social learning and reinforce self-efficacy in managing interactions. Research shows that emotionally intelligent individuals are more likely to earn supervisors' trust, which facilitates feedback, support, and ultimately, better performance (Lee & Lim, 2023; Mishra & Dev, 2024). In internship settings, this dynamic is critical, as trust accelerates adjustment and professional growth. Thus, the following hypothesis is proposed:

H1: Emotional Intelligence has a positive relationship with trust among interns in Work-based Education programs.

Proactive Personality and Trust

Proactive personality reflects a consistent tendency to take initiative, solve problems, and effect change, behaviors that align with Social Cognitive Theory (SCT)'s emphasis on personal agency and reciprocal interaction. Proactive interns actively seek feedback, demonstrate responsibility, and manage challenges, all of which signal dependability and foster trust with supervisors and colleagues (Irwin et al., 2022; Lin & Chen, 2022). Studies show that proactive personality is positively associated with trust in leadership, especially in structured environments (Hao & Han, 2022), and that trust mediates its relationship with job performance (Lee et al., 2023). These patterns support SCT's principle that individual traits influence and are reinforced by social environments. Therefore, the following hypothesis is proposed:

H2: Proactive Personality has a positive relationship with trust among interns in work-based education programs.

Resilience and Trust

Resilience, the capacity to manage challenges and maintain stability under pressure, aligns with SCT's concept of self-regulation and adaptive learning. Resilient interns consistently demonstrate reliability and perseverance, which enhances their credibility and fosters trust with supervisors and peers (Diab & Green, 2024; Manner-Beldeon et al., 2024; Pantaruk et al., 2025). Trust mediates the relationship between resilience and job performance, serving as a key pathway through which steady behavior translates into improved outcomes (Dirks & de Jong, 2022; Nair et al., 2023). This dynamic reflects SCT's feedback loop, where personal coping strategies elicit supportive social responses that reinforce trust. Therefore, the following hypothesis is proposed:

H3: Resilience has a positive relationship with trust among interns in Work-based Education programs.

Growth Mindset and Trust

A growth mindset, the belief that abilities can be developed through effort and feedback, aligns with SCT's emphasis on self-efficacy, outcome expectations, and reciprocal learning. Interns who hold this mindset are more likely to persist through challenges, embrace feedback, and demonstrate a willingness to learn, all of which signal reliability and openness to supervisors (Ahsan, 2025; Richardson et al., 2021). These behaviors foster trust, which serves as a key mediating factor linking growth mindset to job performance (Razai et al., 2023; Wang et al., 2021). Although the direct effects of growth mindset on performance may vary (Macnamara &

Burgoyne, 2023), its indirect impact through trust is substantial. In line with SCT, these adaptive behaviors elicit supportive responses from the environment, reinforcing trust-building processes. Therefore, the following hypothesis is proposed:

H4: Growth Mindset has a positive relationship with trust among interns in Work-based Education programs.

Empathy and Trust

Empathy, the capacity to understand and respond to others' emotions, supports trust building by promoting emotional connection, psychological safety, and supportive communication (Atta et al., 2024; Wu et al., 2022). Within the SCT framework, empathy represents a cognitive affective personal factor that influences social behaviors and environmental feedback. Empathetic interns are more likely to create meaningful workplace relationships, fostering mutual respect and trust with colleagues and supervisors (Atta et al., 2024; Lin & Wang, 2023; Schilling & Kauffeld, 2024). Trust serves as a key mediator between empathy and performance, as it enhances collaboration, communication, and openness to feedback (Yue et al., 2022). While empathy may not directly predict performance, it indirectly contributes by establishing a trust-based environment essential for growth. In line with SCT, these behaviors are reinforced through social interaction, making empathy a vital driver of trust. Therefore, the following hypothesis is proposed:

H5: Empathy has a positive relationship with trust among interns in Work-based Education programs.

Methodology

This section details the research design, sampling, data collection, and analytical methods used to investigate psychological attributes influencing trust in Thai internship teams.

Sample and Data Collection Procedure

This study employed an online survey method using Google Forms to collect data from university students who had completed at least three months of internship in Thailand under the Work-based Education (WBE) model. Participants were recruited from five large online communities, each with over 100,000 members actively engaged in internship opportunities. The questionnaire, administered in Thai, was designed to ensure clarity and accessibility for the target group. Participation was voluntary, and respondents were assured of anonymity and confidentiality. Respondents were further informed that their participation was entirely voluntary and that their responses would remain anonymous. Completed questionnaires were submitted digitally, and data collection was conducted from March to June 2025. To reduce potential bias and ensure consistent interpretation, the collected data were numerically transformed prior to analysis, as recommended by Podsakoff et al. (2024). This approach enabled the researcher to reach a broad, culturally diverse sample reflective of the WBE landscape in Thailand.

Measurement

Emotional Intelligence (EQ) was measured using the 16-item Wong and Law Emotional Intelligence Scale (WLEIS), which includes four dimensions: Self-emotional appraisal, others' emotional appraisal, use of emotion, and regulation of emotion (Wong & Law, 2002). Items were rated on a five-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree), with examples such as "I am aware of my emotions as I experience them."

Proactive personality was assessed using a 10-item scale developed by Bateman and Crant (1993). This scale captures individuals' tendencies to take initiative and enact change. Sample item: "I am constantly on the lookout for new ways to improve my work."

Resilience was measured using the Brief Resilience Scale (Ahmad et al., 2021), comprising six items that assess the ability to recover from stress. Participants responded on a five-point Likert scale. Example item: "I tend to bounce back quickly after hard times."

Growth mindset was evaluated using four items adapted from Dweck's mindset framework (Dweck, 2006). The items assess beliefs about the potential to develop abilities through effort. A sample statement is: "I believe I can always substantially improve my skills."

Empathy was measured through the Interpersonal Reactivity Index (IRI), focusing on the Perspective Taking and Empathic Concern subscales adapted for workplace contexts (Raimondi et al., 2023). These subscales capture cognitive and affective empathy relevant to team interaction.

Trust, the dependent variable, was measured using a seven-item scale adapted from Ratasuk (2024), which evaluates perceptions of integrity, reliability, and benevolence. Supervisors also assessed interns' trustworthiness using a parallel form of the instrument. All responses used a five-point Likert scale.

Data Analysis Method

Partial Least Squares Structural Equation Modeling (PLS-SEM) was employed to analyze the data, using SmartPLS version 4.0. PLS-SEM was chosen due to its suitability for complex models with multiple constructs, its robustness with smaller sample sizes, and its ability to handle non-normal data distributions (Hair et al., 2019; Ratasuk, 2023b). Preliminary tests confirmed that the data violated multivariate normality assumptions, further justifying the use of PLS-SEM. The analysis involved two stages: First, assessing the measurement model for reliability and validity; second, evaluating the structural model to test hypothesized relationships and control variables. Bootstrapping with 5,000 resamples was conducted to determine the significance of path coefficients.

Research Results

This section presents the findings of the study, beginning with an assessment of the measurement model's validity and reliability, followed by the evaluation of structural relationships among the key psychological attributes and trust. The results also include an analysis of control variables to understand their influence on trust within multicultural internship teams. Statistical evidence is provided to support the hypothesized relationships and the overall model fit. A total of 429 students participated in the survey, yielding an 85.8% response rate. The majority were female (69.5%), and most fell into the 19-20 year age range (56.6%), followed by those aged 22 or above (19.6%). Nearly half were second-year students (44.5%), with smaller proportions in the first, third, and fourth years. Academic performance was generally strong, with over one-third (37.1%) achieving a GPAX of 3.50-4.00, and a similar share (34.3%) scoring 3.00-3.49. Most internships lasted three months (70.9%), and the majority worked six days per week (61.3%), followed by five days (31.5%). These demographic patterns, as shown in Table 1, provide context for interpreting the relationships between individual characteristics and internship performance outcomes.

Table 1 Characteristics of Respondents

Characteristics	Categories	Descriptive Statistics	
		Frequency	Percentage (%)
Gender	Male	131	30.5%
	Female	298	69.5%
Age	18	43	10.0%
	19	128	29.8%
	20	115	26.8%
	21	59	13.8%
	22 or Above	84	19.6%
Academic Year	1st Year	85	19.8%
	2nd Year	191	44.5%
	3rd Year	76	17.7%
	4th Year	77	17.9%
GPAX	Less than 2.00	6	1.4%
	2.00 - 2.49	35	8.2%
	2.50 - 2.99	82	19.1%
	3.00 - 3.49	147	34.3%
	3.50 - 4.00	159	37.1%
Duration of Internship at the Organization (Months)	3 Months	304	70.9%
	6 Months	59	13.8%
	9 Months	48	11.2%
	12 Months or More	18	4.2%
Number of Internship Days per Week at the Organization	1 Day	8	1.9%
	2 Days	1	0.2%
	3 Days	2	0.5%
	4 Days	9	2.1%
	5 Days	135	31.5%
	6 Days	263	61.3%
	7 Days	11	2.6%

Source: Author's Calculation.

Convergent validity was evaluated through factor loadings, Composite Reliability (CR), and Average Variance Extracted (AVE), as shown in Table 2. All items demonstrated strong factor loadings above the recommended threshold of 0.70, confirming item reliability. Composite reliability values ranged between 0.902 and 0.936, exceeding the minimum acceptable level of 0.70, indicating excellent internal consistency. AVE values ranged from 0.626 to 0.708, surpassing the 0.50 benchmark, thus confirming that constructs explain a substantial portion of the variance in their indicators and establishing convergent validity. In addition, reliability was examined using Composite Reliability (CR) and Cronbach's Alpha (CA), ranging from 0.864 to 0.917, which were well above the 0.70 threshold (Fornell & Larcker, 1981; Hair et al., 2019; Zhu & Ratasuk, 2024), confirming strong internal consistency and reliability of the measurement scales shown in Table 2 (Fornell & Larcker, 1981; Hair et al., 2019; Yang & Ratasuk, 2024).

Table 2 Convergent Validity (Factor Loading, Composite Reliability (CR)), and Average Variance Extract (AVE)

Variables	Question Items	Factor Loading	Composite Reliability (CR)	Cronbach's Alpha (CA)	Average Variance Extract (AVE)
Emotional Intelligence (EQ)	EQ1: I can recognize and understand my own emotions while working.	0.766	0.909	0.88	0.626
	EQ2: I can control my emotions well in stressful situations.	0.807	-	-	-
	EQ3: I can understand the emotions of colleagues and supervisors.	0.769	-	-	-
	EQ4: I can adapt and manage my emotions appropriately to fit the situation.	0.839	-	-	-
	EQ5: I can maintain motivation at work even when facing challenges.	0.781	-	-	-
	EQ6: I adjust my emotional expressions to maintain good relationships with colleagues and supervisors.	0.783	-	-	-
Proactive Personality (PP)	PP1: I often seek opportunities for self-development during my internship.	0.811	0.902	0.902	0.648
	PP2: I usually take the initiative to solve problems without waiting for instructions.	0.809	-	-	-
	PP3: I try to find new ways to work more efficiently.	0.851	-	-	-
	PP4: I am determined to achieve my personal goals.	0.776	-	-	-
	PP5: I often encourage others to try more effective work methods.	0.774	-	-	-

Table 2 Convergent Validity (Factor loading, Composite Reliability (CR)), and Average Variance Extract (AVE) (Con.)

Variables	Question Items	Factor Loading	Composite Reliability (CR)	Cronbach's Alpha (CA)	Average Variance Extract (AVE)
Resilience (Re)	Re1: I can recover quickly from mistakes or setbacks.	0.816	0.93	0.91	0.69
	Re2: I can maintain a positive attitude in a stressful work environment.	0.856	-	-	-
	Re3: I can cope with and adapt well to changes in job responsibilities.	0.828	-	-	-
	Re4: I can manage the stress that comes with internship work.	0.842	-	-	-
	Re5: I can perform effectively even when facing challenges or obstacles.	0.845	-	-	-
	Re6: I view difficulties during my internship as learning and growth opportunities rather than obstacles.	0.798	-	-	-
Growth Mindset (GM)	GM1: I believe that success during an internship can be developed through effort and learning.	0.841	0.936	0.917	0.708
	GM2: I believe challenges during internships are growth opportunities.	0.867	-	-	-
	GM3: I am open to constructive feedback and use it to improve my skills.	0.83	-	-	-
	GM4: I see failure at work as a learning opportunity and a chance to improve.	0.845	-	-	-
	GM5: I continuously seek new knowledge and skills to enhance my internship performance.	0.85	-	-	-
	GM6: I actively seek feedback from supervisors and colleagues to improve and develop myself.	0.813	-	-	-
Empathy (Em)	Em1: I try to understand the perspectives and emotions of my colleagues.	0.839	0.915	0.885	0.684
	Em2: I adjust my communication style to suit the people I work with.	0.841	-	-	-
	Em3: I can sense the feelings and concerns of colleagues and supervisors.	0.815	-	-	-
	Em4: I strive to create a positive work environment.	0.805	-	-	-
	Em5: I am aware of and can effectively respond to the emotional needs of colleagues and clients.	0.835	-	-	-

Table 2 Convergent Validity (Factor loading, Composite Reliability (CR)), and Average Variance Extract (AVE) (Con.)

Variables	Question Items	Factor Loading	Composite Reliability (CR)	Cronbach's Alpha (CA)	Average Variance Extract (AVE)
Trust (Tr)	Tr1: I feel comfortable asking colleagues for help and support during the internship.	0.736	0.92	0.895	0.657
	Tr2: I believe my supervisor/mentor gives fair and honest feedback about the internship.	0.839	-	-	-
	Tr3: I believe my colleagues are well-intentioned and care about my interests.	0.841	-	-	-
	Tr4: I feel comfortable expressing opinions and concerns during the internship.	0.789	-	-	-
	Tr5: I believe my internship organization has a good work culture and ethics.	0.829	-	-	-
	Tr6: I believe my supervisor/mentor and colleagues value me and respect my opinions.	0.825	-	-	-

Source: Author's Calculation.

Discriminant validity was evaluated using the Heterotrait-Monotrait Ratio of Correlations (HTMT) (Henseler et al., 2015; Naing & Ratasuk, 2024), a robust criterion for assessing construct distinctiveness, as shown in Table 3. HTMT values below 0.90 indicate adequate discriminant validity, with values below 0.85 preferred. In this study, HTMT ratios ranged from 0.648 to 0.922. As illustrated in Table 3, most construct pairs were below the 0.90 threshold, except for Empathy and Growth Mindset, which slightly exceeded it at 0.922. Despite this marginal exceedance, all HTMT ratios were statistically significant ($p \leq 0.05$), indicating that the constructs remain sufficiently distinct for analysis, though Empathy and Growth Mindset share some conceptual overlap.

Table 3 HTMT Ratio

	EQ	PP	Re	GM	Em	Tr
EQ	-	-	-	-	-	-
PP	0.859***	-	-	-	-	-
Re	0.88**	0.882**	-	-	-	-
GM	0.855***	0.829***	0.869**	-	-	-

Table 3 HTMT Ratio (Con.)

	EQ	PP	Re	GM	Em	Tr
Em	0.888**	0.88**	0.882**	0.922	-	-
Tr	0.723***	0.648***	0.687***	0.729***	0.765***	-

Source: Author's Calculation. *** = $p \leq 0.001$, ** = $p \leq 0.01$, * = $p \leq 0.05$, EQ = Emotional Intelligence, PP = Proactive Personality, Re = Resilience, GM = Growth Mindset, Em = Empathy, Tr = Trust

Multicollinearity was evaluated by the Variance Inflation Factor (VIF). All VIF values ranged between 2.097 and 4.678, below the conservative cutoff of 5.0 (Hair et al., 2019; Lyu & Ratasuk, 2024; Ratasuk & Charoensukmongkol, 2019), indicating no multicollinearity concerns. This ensures that predictor constructs do not exhibit problematic linear dependencies that could bias path coefficient estimates. Jarque-Bera and Robust Jarque-Bera tests confirmed the non-normal distribution of all primary variables. While this violates assumptions of covariance-based SEM, it does not affect the validity of PLS-SEM results, which accommodate non-normal data. The model fit was evaluated using several indices. The Average Path Coefficient (APC) was 0.099 ($p = 0.009$), indicating statistically significant path strengths. The Average R-squared (ARS) was 0.587 ($p < 0.001$), and the Average Adjusted R-Squared (AARS) was 0.576 ($p < 0.001$), demonstrating strong explanatory power. Multicollinearity diagnostics showed an Average Block VIF (AVIF) of 2.492 and an Average Full Collinearity VIF (AFVIF) of 2.622, both within acceptable limits (<5 and ideally <3.3). The Tenenhaus Goodness of Fit (GoF) was 0.700, indicating excellent model quality. Simpson's Paradox Ratio (SPR) was 0.636, slightly below the ideal threshold of 0.7, suggesting some caution in interpreting aggregated effects. However, the R-squared Contribution Ratio (RSCR) was 0.985, and both the Statistical Suppression Ratio (SSR) and Nonlinear Bivariate Causality Direction Ratio (NLBCDR) were 0.909, confirming robustness against suppression and nonlinear causality issues.

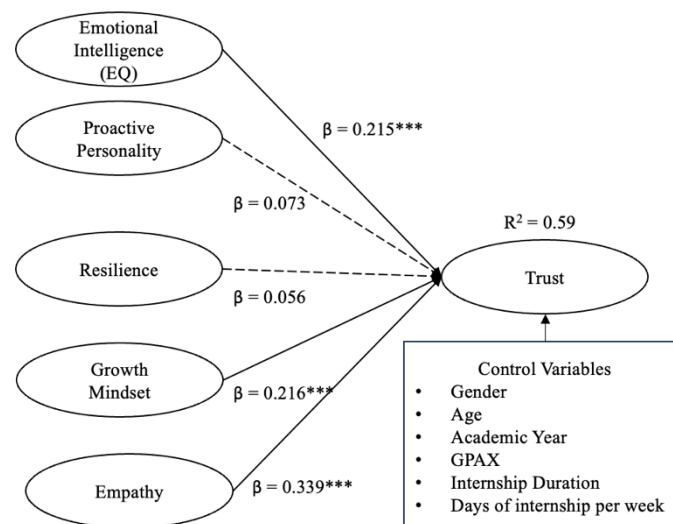


Figure 1 Conceptual Model

Figure 1 presents the results of the regression analysis examining the effects of Emotional Intelligence (EQ), proactive personality, resilience, growth mindset, and empathy on trust among interns. The analysis revealed that emotional intelligence ($\beta = 0.215$, $p < 0.001$), growth mindset ($\beta = 0.216$, $p < 0.001$), and empathy ($\beta = 0.339$, $p < 0.001$) all had significant positive effects on trust. These findings indicate that higher levels of EQ, growth mindset, and empathy are associated with greater trust among interns in multicultural teams.

In contrast, proactive personality ($\beta = 0.073$, $p = 0.064$) and resilience ($\beta = 0.056$, $p = 0.121$) did not have statistically significant effects on trust, as their p-values exceeded the conventional threshold of 0.05. This suggests that, within this sample, proactive personality and resilience are not significant predictors of trust in the internship context.

Overall, the results highlight the importance of emotional intelligence, growth mindset, and empathy as key psychological attributes that foster trust in multicultural internship teams in Thailand.

Control Variables

The analysis of control variables revealed that gender was the only factor with a statistically significant effect on trust ($\beta = -0.079$, $p = 0.049$), suggesting a small but meaningful influence of gender differences on trust formation. In contrast, age ($\beta = -0.017$, $p = 0.363$), academic year ($\beta = 0.023$, $p = 0.319$), GPAX ($\beta = -0.006$, $p = 0.447$), internship duration ($\beta = -0.050$, $p = 0.150$), and number of internship days per week ($\beta = 0.018$, $p = 0.357$) were not statistically significant, as their p-values exceeded the conventional 0.05 threshold. These findings indicate that, aside from gender, the demographic and academic characteristics considered exerted minimal influence on trust in this internship context.

Discussion and Conclusion

This study investigated the influence of Emotional Intelligence (EQ), proactive personality, resilience, growth mindset, and empathy on trust formation among interns in multicultural Work-based Education (WBE) programs in Thailand. The results of the PLS-SEM estimations provided nuanced insights into these relationships, offering support for some hypothesized effects while challenging others.

Consistent with Hypothesis H1, Emotional Intelligence (EQ) demonstrated a significant positive relationship with trust ($\beta = 0.215$, $p < 0.001$). EQ enhances interns' capacity to regulate emotions, interpret social cues, and communicate effectively, skills that are critical for fostering trust in workplace relationships (Alsayed, 2022; Prasse, 2021). In line with Social Cognitive Theory (Bandura & Wessels, 1997), these self-regulatory and interpersonal competencies promote social learning and strengthen self-efficacy in managing interactions. Previous studies have shown that emotionally intelligent individuals are more likely to earn supervisors' trust, which facilitates constructive feedback, support, and improved performance (Lee et al., 2023; Mishra & Dev, 2024). Within multicultural WBE internships in Thailand, higher EQ enables interns to navigate cultural nuances, adapt communication styles, and build rapport, thereby accelerating adjustment and professional growth. This finding reinforces prior evidence highlighting EQ's role in promoting trust and effective collaboration in workplace contexts (Alsayed, 2022; Mishra & Dev, 2024).

In line with Hypothesis H4, Growth Mindset (GM) demonstrated a significant positive relationship with trust ($\beta = 0.216$, $p < 0.001$). A growth mindset, the belief that abilities can be developed through effort and feedback, aligns with Social Cognitive Theory's emphasis on

self-efficacy, outcome expectations, and reciprocal learning. Interns who hold this mindset are more likely to persist through challenges, embrace constructive feedback, and demonstrate a willingness to learn, signaling reliability and openness to supervisors (Ahsan, 2025; Richardson et al., 2021). These behaviors foster trust, which in turn plays a mediating role in linking growth mindset to job performance (Razai et al., 2023; Wang et al., 2021). Although the direct effects of growth mindset on performance may vary (Macnamara & Burgoyne, 2023), its indirect influence through trust appears substantial. In multicultural WBE settings, such adaptive behaviors elicit supportive responses from colleagues and supervisors, accelerating interns' integration and reinforcing trust-building processes.

In line with Hypothesis H5, Empathy (Em) emerged as the strongest predictor of trust, demonstrating a significant positive relationship ($\beta = 0.339$, $p < 0.001$). Empathy, the capacity to understand and respond to others' emotions, supports trust formation by fostering emotional connection, psychological safety, and supportive communication (Atta et al., 2024; Wu et al., 2022). Within the Social Cognitive Theory framework, empathy represents a cognitive-affective personal factor that shapes social behaviors and elicits positive environmental feedback. Empathetic interns are more likely to develop meaningful workplace relationships, cultivating mutual respect and trust with colleagues and supervisors (Atta et al., 2024; Lin & Wang, 2023; Schilling & Kauffeld, 2024). Trust, in turn, enhances collaboration, communication, and receptiveness to feedback, thereby indirectly contributing to performance outcomes (Yue et al., 2022). Although empathy may not directly predict performance, its role in establishing a trust-based environment is critical, particularly in multicultural WBE settings where relational harmony is highly valued. These findings underscore empathy's central role as a driver of trust and effective workplace relationships.

Contrary to Hypothesis H2, the analysis found no statistically significant relationship between Proactive Personality and trust ($\beta = 0.073$, $p = 0.064$), leading to the rejection of the hypothesis. Proactive personality reflects a consistent tendency to take initiative, solve problems, and effect change. These behaviors align with Social Cognitive Theory's emphasis on personal agency and reciprocal interaction. While prior studies have linked proactive personality to trust in leadership and positive workplace outcomes (Hao & Han, 2022; Irwin et al., 2022; Lin & Chen, 2022) and suggested that trust mediates its relationship with performance (Lee & Lim, 2023), such effects were not observed directly in this study's context. One possible explanation is that expressions of proactivity may be interpreted differently across cultures. In hierarchical or high-context environments, overt initiative from junior members may not always be perceived as trust-building. Alternatively, the influence of proactive personality on trust may operate indirectly, potentially through mediating variables not examined in this model.

Contrary to Hypothesis H3, Resilience did not show a statistically significant relationship with trust ($\beta = 0.056$, $p = 0.121$), resulting in the rejection of the hypothesis. Resilience, the capacity to manage challenges and maintain stability under pressure, aligns with Social Cognitive Theory's concept of self-regulation and adaptive learning. While prior studies indicate that resilient individuals demonstrate reliability and perseverance, thereby enhancing credibility and fostering trust (Diab & Green, 2024; Manner-Beldeon et al., 2024; Pantaruk et al., 2025), these effects were not evident in the current study's context. One possible explanation is that resilience is primarily an internal coping mechanism. Its influence on trust may be indirect, operating through behavioral manifestations that require more extended observation than the typical internship period allows. In short-term WBE settings, team members may not readily

perceive resilience unless it is expressed through visible actions, which other situational or interpersonal factors may also shape.

A comparison of these results indicates that interpersonal, relational, and cognitive-emotional attributes, namely Emotional Intelligence, Growth Mindset, and Empathy, exert a more direct and substantial influence on trust formation in multicultural WBE internship teams than individual behavioral orientations or coping mechanisms such as Proactive Personality and Resilience. This pattern suggests that, in short-term and socially intensive internship contexts, cultivating skills that facilitate mutual understanding, openness, and emotional connection is paramount for rapid trust development. The powerful effect of empathy underscores the role of emotional resonance and perspective-taking in bridging cultural differences and fostering high-quality, trust-based relationships.

Concerning control variables, only gender demonstrated a statistically significant, albeit small, effect on trust ($\beta = -0.079$, $p = 0.049$), potentially reflecting subtle gender-related dynamics in trust perceptions within multicultural teams. Other demographic and internship-specific factors (age, academic year, GPAX, internship duration, and days of internship per week) were not significant predictors. These findings reinforce the conclusion that core psychological attributes have a more decisive impact on trust formation than demographic characteristics or structural features of the internship experience.

Theoretical Contributions

This study advances theoretical understanding of trust formation in Work-based Education (WBE) programs within multicultural contexts by extending the application of Social Cognitive Theory (SCT). The findings demonstrate that specific personal factors, Emotional Intelligence, Growth Mindset, and Empathy, directly enhance trust by fostering interpersonal connection, openness, and mutual understanding in short-term, socially intensive professional settings. In line with SCT's principles of reciprocal determinism and self-efficacy, these attributes translate into observable behaviors that elicit trust from supervisors and peers, reinforcing positive social exchanges. The results also clarify that not all positive psychological attributes exert the same influence. While cognitive-emotional and relational factors have substantial direct effects, behavioral orientations (Proactive Personality) and internal coping mechanisms (Resilience) show limited direct impact. This distinction refines SCT's applicability to relational outcomes, highlighting the salience of attributes that facilitate immediate social integration in culturally diverse environments.

Empirically, the study provides context-specific evidence from an under-researched setting, Thailand, where little prior work has examined psychological antecedents of trust in internship contexts. By focusing on formative, short-term professional relationships, the research addresses a critical gap in the literature, offering insights into how universal relational capacities, such as empathy, emotional intelligence, and a growth mindset, transcend cultural variations in authority and communication norms. The non-significant results for proactive personality and resilience further contribute by identifying potential cultural or contextual moderators that limit their direct role in trust formation. Collectively, these findings enrich both theory and practice by deepening understanding of trust-building mechanisms in WBE programs and informing the development of culturally responsive internship models.

Practical Contributions

This study offers evidence-based guidance for stakeholders in Work-based Education (WBE) and international internship programs. For universities, the results indicate that Emotional Intelligence (EQ), Growth Mindset (GM), and Empathy (Em) exert the most potent positive effects on trust and performance. These findings suggest the integration of targeted training modules (such as workshops on emotional regulation, perspective-taking, adaptive learning, and intercultural communication) into curricula and career preparation programs to enhance students' interpersonal competencies.

In contrast, Proactive Personality (PP) and Resilience (Re) showed no significant direct effects in the structured, short-term internship context studied. However, these traits may be more influential in less structured or longer-term settings with greater autonomy or sustained challenges. Therefore, while EQ, Growth Mindset, and Empathy should receive priority in training, PP and Re should remain part of skill development initiatives to prepare students for diverse future work environments. For host organizations, the results support designing onboarding and mentorship programs that explicitly cultivate empathy and emotional intelligence, for example, through mentor-mentee pairing, feedback skills training for supervisors, and cross-cultural exchange activities. While Proactive Personality and Resilience may have limited short-term impact in structured internships, targeted assignments or projects could still encourage their expression. For students, the findings highlight the importance of actively developing relational and cognitive-emotional skills to strengthen workplace relationships. Even if some traits appear less impactful in structured internships, they remain valuable for long-term career adaptability. At the policy level, the results provide empirical support for initiatives that create trust-enabling environments in WBE programs, aligning with workforce readiness goals under Thailand 4.0, such as university-industry collaborations on intercultural and trust-building training.

Limitations and Future Research

While this study advances understanding of trust formation in multicultural Work-based Education (WBE) settings, several limitations warrant consideration. First, the cross-sectional design constrains causal inference between psychological attributes and trust. Longitudinal research would better capture the temporal dynamics and potential bidirectional influences of these relationships. Second, although multi-source data collection was employed to reduce common method bias, reliance on self-reported measures for psychological attributes may still introduce subjective bias. Future studies could incorporate behavioral observations or implicit measures to strengthen validity. Third, the sample was drawn exclusively from WBE programs in Thailand, which, despite including participants from multiple nationalities, may limit generalizability to other forms of work-based learning, industry sectors, or cultural contexts.

Future research could examine potential moderators such as cultural intelligence, leadership style (for instance, servant or transformational leadership), and organizational culture to determine how they shape the strength or direction of the observed relationships. Further exploration of the specific behavioral expressions of Emotional Intelligence, Growth Mindset, and Empathy that most effectively foster trust across cultural contexts would also be valuable. Additionally, given the non-significant results for Proactive Personality and Resilience, future work could investigate indirect pathways (such as mediation through communication quality, collaboration, or cultural adaptation) to uncover conditional effects and contextual boundaries of these constructs in trust formation.

Conclusion

This study advances understanding of the psychological foundations of trust in multicultural Work-based Education (WBE) settings by demonstrating the significant positive effects of Emotional Intelligence, Growth Mindset, and Empathy on trust formation, alongside more limited direct contributions from Proactive Personality and Resilience. Grounded in Social Cognitive Theory, the findings highlight that cognitive-emotional and relational attributes play a more immediate role in fostering trust than behavioral orientations or internal coping mechanisms, particularly in short-term, socially intensive professional contexts. By situating these relationships within the under-researched, cross-cultural environment of WBE programs in Thailand, the study contributes both theoretical clarity and practical guidance for preparing interns to integrate effectively into diverse workplace settings. These insights underscore the importance of cultivating psychological attributes that promote openness, understanding, and connection, thereby enhancing professional adjustment and performance in an increasingly globalized workforce.

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Factorial Components Affecting Students' Perceived Learning Outcomes and Satisfaction in Principles of Marketing Course: Implications for ASEAN Qualifications

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Abstract

This study aimed to examine the levels of personal factors related to teaching and learning in the Principles of Marketing course and to analyze the key components influencing students' perceived learning outcomes and satisfaction. A quantitative research design was employed, using a questionnaire as the primary data collection instrument. Convenience sampling was applied to select 400 undergraduate students enrolled in the Principles of Marketing course. The data were analyzed using descriptive statistics and Exploratory Factor Analysis (EFA), with Principal Component Analysis and Varimax rotation. The results of the data suitability test showed that the KMO value was .907 and Bartlett's Test was statistically significant, indicating the appropriateness of the dataset for factor analysis. The analysis extracted eight principal components: (1) teaching quality and learning environment; (2) motivation and learning skills; (3) support and prior knowledge; (4) learning outcomes and satisfaction; (5) assessment system; (6) active learning behaviors; (7) content quality and relevance; and (8) instructional media and educational technology. The findings highlight that successful learning in the Principles of Marketing course does not stem from a single factor but results from an interplay among teacher-related, learner-related, content-related, environmental, and technological dimensions. Among these, teaching quality and the learning environment emerged as the most influential components. The study provides valuable insights for enhancing instructional practices and strengthening course quality assurance in higher education.

Keywords: Principles of Marketing, Factor Analysis, Perceived Learning Outcomes, Learning Satisfaction, Learning Motivation, Teaching Quality, Educational Technology

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Introduction

The establishment of the ASEAN Economic Community (AEC) in 2015 has generated significant structural changes in the regional economy, particularly by promoting the free flow of skilled labor (ASEAN Secretariat, 2015; Kuroiwa, 2021). This development has led to the creation of a larger and more competitive labor market (Corong & Aguiar, 2019). In this context, marketing education plays a critical role in developing human resources with the competencies needed to drive business at the regional level. Consequently, graduate production can no longer focus solely on the demands of the domestic labor market; instead, it must take into account international standards and global recognition to support labor mobility and enhance the comparability and quality of education across countries (Bernardo, 2018; Jaweng, 2025).

ASEAN member states have jointly developed the ASEAN Qualifications Reference Framework (AQRF) as a regional mechanism emphasizing the assessment of learning outcomes. Thailand completed the referencing of its National Qualifications Framework (NQF) to the AQRF on January 31, 2020 (Office of the Education Council Secretariat, 2020). This achievement reflects the Thai government's strong commitment to improving the quality of national education in alignment with international standards and regional development directions. Critically, the AQRF is fundamentally structured around the assessment of learning outcomes across eight competency levels, emphasizing what learners are expected to know, understand, and be able to do upon completion of their studies (ASEAN Secretariat, 2015; Office of the Education Council Secretariat, 2020). This outcome-based orientation implies that the quality of higher education can no longer be evaluated solely through traditional metrics such as examination scores, but must also encompass learners' subjective perceptions of what they have gained — making Perceived Learning Outcomes (PLO) a directly relevant indicator for assessing alignment with AQRF standards.

Despite clear policy structures and qualification frameworks, curriculum development in practice continues to face substantial challenges. Carter (2016). This misalignment between curriculum design and regional standards is likely to affect not only graduates' labor market readiness, but also students' satisfaction with their learning experience — particularly when they perceive a disconnect between what is taught and what the regional economy demands (Choi & Lee, 2024)—critically observed that marketing curriculum development in Thailand tends to remain anchored in a nationalistic perspective and lacks concrete integration with the ASEAN Economic Community context. Such limitations raise important questions regarding students' readiness and their perceived value of the learning outcomes they acquire. Accordingly, this study aims to investigate the factors influencing students' decisions to study marketing, as well as their perceptions of learning outcomes and satisfaction with the Principles of Marketing course. The findings are intended to inform pedagogical reform and curriculum development that transcend existing limitations and better prepare students for opportunities and challenges in the ASEAN labor market.

In the context of business education, marketing is a fundamental discipline. The Principles of Marketing course is one of the core foundational subjects that students in business and management programs must understand, as it serves as a key mechanism for analyzing market needs and developing proactive strategic planning (Hair et al., 2019). Therefore, students enrolled in this course constitute an important target group for this research, as marketing knowledge is essential to effective management and customer value creation. However, teaching and learning

at the higher education level often face challenges arising from learner diversity, particularly students from different educational backgrounds (arts–languages and science–mathematics streams). Moreover, the majority of students—approximately 89.5% according to survey data—lack direct work or internship experience in marketing. These differences contribute to substantial variability in students’ perceptions of learning outcomes and satisfaction with the course (Choi & Lee, 2024).

In recent years, numerous studies have focused on identifying factors influencing academic achievement and students’ perceptions (Zhao & Zhang, 2022). The findings often indicate complex interrelationships among variables. In line with this, the present study examines multiple components, including Learning Motivation (LM), Learning Skills (LS), Learning Behavior (LB), Prior Knowledge (PK), and Support Systems (SS), which represent key internal factors contributing to active learning (Choi & Lee, 2024). At the same time, external factors such as content quality, Media and Technology (MT), Assessment Systems (AS), teaching quality, and the Learning Environment (LE) directly influence students’ perceptions (Sutthichai, 2023).

As established by the AQRF and Thailand’s aligned NQF, the benchmark for educational quality in the ASEAN context is anchored in demonstrable learning outcomes rather than procedural compliance alone (ASEAN Secretariat, 2015; Office of the Education Council Secretariat, 2020). Learning success, therefore, cannot be explained solely by quantitative indicators such as examination scores or academic achievement. Learning success, therefore, cannot be explained solely by quantitative indicators such as examination scores or academic achievement. Increasing emphasis is now placed on Perceived Learning Outcomes (PLO) and Learning Satisfaction (SAT), which reflect learners’ positive attitudes toward learning and the quality of instruction they receive (Kriengsak, 2022). The factors influencing these outcome variables are complex and multidimensional, encompassing both internal behavioral factors (e.g., motivation, skills, learning behaviors, and prior knowledge) and external environmental factors (e.g., content quality, instructional effectiveness, media and technology, and instructor support). Most previous studies have examined these relationships in isolation, leaving a gap in structural analyses that can systematically group and clarify the interrelationships among these complex factors (Smith & Jones, 2021).

To address this gap, the present study employs EFA, a statistical technique well-suited to organizing a large number of observed variables into theoretically meaningful latent constructs (Zhao & Zhang, 2022). The identification of eight significant underlying components, such as teaching quality, learning environment, instructional media, and technology, confirms that learning is not driven by any single factor, but rather by clusters of interrelated influences. Understanding this underlying factor structure enables the systematic identification of instructional dimensions that should be strategically improved in order to maximize their impact on students’ perceived learning outcomes and learning satisfaction (Bandura, 2020).

Objective

To analyze the principal components of factors associated with the teaching and learning processes in the Principles of Marketing course among undergraduate students.

Literature Review

This study aims to identify the underlying factor structure that influences students' learning outcomes and learning satisfaction. To achieve this objective, a comprehensive conceptual framework is required—one that integrates internal learner-related factors, external environmental factors, and key outcome variables, as described below.

Social Cognitive Theory

The primary theoretical framework used to explain the interaction among the variables in this study is Social Cognitive Theory, proposed by Bandura (2020). This theory posits that learning is not merely a passive response to external stimuli; rather, it is a dynamic process resulting from reciprocal interactions among three core components, referred to as Triadic Reciprocal Causation, namely:

Personal Factors: These include learners' beliefs, motivation, abilities, and internal skills. In the context of this study, personal factors are represented by variables such as MS, LM, LS, and PK.

Behavior: This component refers to learners' actions and response patterns, such as LB.

Environmental Factors: These encompass the physical and social environments that influence learners. In this study, environmental factors correspond to external variables such as instructional and content quality, MT, AS, LE, and SS.

Social Cognitive Theory provides a meaningful theoretical structure for categorizing the observed variables subjected to EFA. It emphasizes that learning outcomes and student satisfaction do not arise from a single factor but rather from the systematic interaction of multiple dimensions.

Higher Education Service Quality Model

Higher education is increasingly conceptualized as a form of service in which students are regarded as service recipients. Accordingly, the Higher Education Service Quality Model (Sutthichai, 2023) serves as an important framework for explaining external factors influencing student satisfaction. This model classifies the quality of the learning experience into two primary dimensions:

Technical Quality: Refers to what is taught—the core academic content of the course. This dimension is associated with the accuracy, relevance, and currency of course content, as well as the appropriateness of the AS.

Functional Quality: Refers to how the service is delivered, encompassing the instructional process itself. This dimension includes teaching quality, the use of Media and MT, SS, and LE. Perceived service quality in these dimensions is directly associated with Learning Satisfaction (SAT), as high-quality educational services are more likely to generate positive learning experiences that meet or exceed students' expectations.

Perceived Learning Outcomes and Learning Satisfaction

This study adopts outcome variables that emphasize qualitative dimensions beyond mere academic performance or numerical achievement.

PLO: According to Kriengsak (2022), PLO reflects students' subjective evaluations of the extent to which they have gained knowledge, understanding, or skills from a particular course. It serves as an important indicator of learning success, particularly regarding learners' sense of ownership and self-efficacy in the learning process.

SAT: As defined by Choi and Lee (2024), learning satisfaction represents an overall positive attitude formed through the comparison between students' expectations of the Principles of Marketing course and their actual learning experiences. The identified factor components function as key drivers of satisfaction. When these components—such as teaching quality or media and technology—meet or exceed learners' expectations, higher levels of learning satisfaction are likely to occur.

Methodology

Population and Sample

The sample comprised 400 students, selected using convenience sampling. The sample size was determined using the criterion recommended by Hair et al. (2019), which suggests a minimum ratio of 5 to 10 observations per observed variable for factor analysis. The present study included 73 observed variables across 12 constructs; a ratio of approximately 5:1 yields a minimum requirement of 365 respondents. A sample of 400 was therefore deemed sufficient and appropriate, yielding an approximately 5.5:1 ratio of observations per variable, which satisfies the recommended threshold. The majority of respondents were between 17 and 22 years of age and had diverse secondary-level educational backgrounds, including both arts and science streams.

Research Instrument

The questionnaire items were developed with reference to established scales and conceptual frameworks from prior literature. Specifically, items measuring Learning Motivation (LM) and Learning Skills (LS) were adapted from Pintrich and De Groot (1990) and Zimmerman (2002). Learning Behavior (LB) items were grounded in self-regulated learning frameworks proposed by Pintrich (2003). Prior Knowledge (PK) items drew from constructivist learning principles outlined by Ausubel (1968) and Piaget (1970). Support Systems (SS) items were informed by Vygotsky's (1978) social development theory model of student persistence. Items related to Teaching Effectiveness (TE) and Content Quality (CQ) were adapted from Biggs and Tang (2011). Assessment System (AS) items were developed based on Black and Wiliam (2009) and Biggs and Tang (2011). Media and Technology (MT) items were derived from Mayer's (2009) Cognitive Theory of Multimedia Learning. Learning Environment (LE) items were informed by Sutthichai (2023). Finally, Perceived Learning Outcomes (PLO) items were based on Kriengsak (2022), and Learning Satisfaction (SAT) items were adapted from Choi and Lee (2024).

Section 1: Demographic and Background Information

This section collected general information about the students, including gender, age, secondary education background (field of study), prior work or internship experience in marketing, expected examination scores, expected course grade, midterm examination score, time spent on self-study, learning resources used outside the classroom, preferred learning methods, and topics perceived as most difficult in the course.

Section 2: Factors Related to Teaching and Learning

This section measured factors associated with content and curriculum quality, teaching effectiveness, instructional media and technology, assessment systems, learning environment, learning motivation and intention, learning skills and abilities, learning behavior and participation, prior knowledge, social support, learning satisfaction, and perceived learning outcomes.

Data Analysis

Data were analyzed using descriptive statistics, followed by EFA. The EFA was conducted using Principal Component Analysis (PCA) with Varimax rotation to classify observed variables into coherent factor structures based on their interrelationships.

The suitability of the data for factor analysis was confirmed by a Kaiser–Meyer–Olkin (KMO) measure of sampling adequacy of 0.907, indicating an excellent level of adequacy. Additionally, Bartlett’s Test of Sphericity was statistically significant at the 0.05 level, demonstrating that the correlation matrix was appropriate for exploratory factor analysis.

Data Collection

Data were collected through an onsite field survey conducted between March 2025 and August 2025, corresponding to the instructional period of the Principles of Marketing course. The data were obtained from students enrolled in the course at a public university.

The research team administered the questionnaires to all students registered in the course. Completed questionnaires were subsequently screened for completeness and accuracy to ensure that the required sample size was met before proceeding to data analysis in the subsequent stages of the study.

Results**Personal Factors Related to Students’ Learning in Principles of Marketing**

A total of 400 students aged 17-22 years participated in the study, with an average age of 18.5 years, representing late adolescents or university students. The sample was predominantly female (79.8%), with males comprising 19.5% and 0.7% not reporting gender. Regarding educational background, most students completed a high school curriculum in Arts-Language (50.8%), followed by Science-Math (30.5%), Arts-Math (8.3%), Commerce-Accounting (4.3%), Vocational (3.5%), and Others (2.8%).

Students’ expected exam scores were mostly moderate to low, with 58.8% expecting 20–30 points, 14.5% expecting just passing, 11.5% expecting above 30 points, 8.3% expecting full/high scores, and 7.0% expecting below 20 points. Self-assessment analysis indicated that most students rated themselves as “Good,” with Science-Math students showing the highest proportion of “Very Good” ratings (12.3%), while Arts-Language students had the highest proportion of “Moderate” ratings (35.9%).

EFA identified ten key factors influencing learning in Principles of Marketing: Content Quality (CQ), Teaching Effectiveness (TE), M, AS, LE, LM, LS, LB, PK, and SS. Outcome variables included SAT and PLO. KMO and Bartlett’s Test confirmed sample adequacy, and Principal Component Analysis with Varimax rotation supported the identified factor structure.

Table 1 Presents the Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy and Bartlett's Test of Sphericity

KMO and Bartlett's Test	Statistics
Kaiser-Meyer-Olkin Measure of Sampling Adequacy	.907
Bartlett's Test of Sphericity	-
Approx. Chi-Square	11129.422
df	2628
Sig.	.000

Based on Table 1, The KMO value was .907, indicating excellent suitability of the data for factor analysis, as values above .9 are considered "marvelous" (Kaiser, 1974). Bartlett's Test of Sphericity yielded an approximate chi-square of 11,129.422 with 2,628 degrees of freedom and a significance level of 0.000 ($p < .05$), confirming that the correlation matrix was not an identity matrix and that the variables were sufficiently correlated for factor analysis.

Subsequently, PCA with Varimax rotation identified eight distinct components.

Table 2 Presents the Results of Principal Component Analysis (PCA) After Varimax Rotation

Variable	Element 1	Element 2	Element 3	Element 4	Element 5	Element 6	Element 7	Element 8
TE3	.690	-	-	-	-	-	-	-
LE3	.650	-	-	-	-	-	-	-
TE5	.648	-	-	-	-	-	-	-
TE1	.647	-	-	-	-	-	-	-
TE6	.640	-	-	-	-	-	-	-
TE2	.626	-	-	-	-	-	-	-
TE4	.622	-	-	-	-	-	-	-
TE7	.607	-	-	-	-	-	-	-
LE1	.590	-	-	-	-	-	-	-
LE4	.583	-	-	-	-	-	-	-
LE5	.565	-	-	-	-	-	-	-
LE2	.563	-	-	-	-	-	-	-

Table 2 Presents the Results of Principal Component Analysis (PCA) After Varimax Rotation (Con.)

Variable	Element 1	Element 2	Element 3	Element 4	Element 5	Element 6	Element 7	Element 8
LM5	-	.672	-	-	-	-	-	-
LM2	-	.670	-	-	-	-	-	-
LS4	-	.670	-	-	-	-	-	-
LM3	-	.658	-	-	-	-	-	-
LM1	-	.649	-	-	-	-	-	-
LM4	-	.617	-	-	-	-	-	-
LM6	-	.616	-	-	-	-	-	-
LM7	-	.598	-	-	-	-	-	-
LS3	-	.591	-	-	-	-	-	-
LS2	-	.582	-	-	-	-	-	-
LS1	-	.541	-	-	-	-	-	-
SS2	-	-	.718	-	-	-	-	-
PK5	-	-	.717	-	-	-	-	-
PK1	-	-	.694	-	-	-	-	-
SS1	-	-	.668	-	-	-	-	-
SS4	-	-	.659	-	-	-	-	-
PK2	-	-	.655	-	-	-	-	-
SS5	-	-	.641	-	-	-	-	-
SS3	-	-	.621	-	-	-	-	-
PK3	-	-	.603	-	-	-	-	-
PK4	-	-	.598	-	-	-	-	-
PLO3	-	-	-	.697	-	-	-	-
SAT2	-	-	-	.694	-	-	-	-
SAT5	-	-	-	.688	-	-	-	-
PLO2	-	-	-	.655	-	-	-	-
SAT4	-	-	-	.642	-	-	-	-

Table 2 Presents the Results of Principal Component Analysis (PCA) After Varimax Rotation (Con.)

Variable	Element 1	Element 2	Element 3	Element 4	Element 5	Element 6	Element 7	Element 8
SAT1	-	-	-	.615	-	-	-	-
SAT3	-	-	-	.615	-	-	-	-
PLO1	-	-	-	.581	-	-	-	-
PLO4	-	-	-	.528	-	-	-	-
PLO5	-	-	-	.508	-	-	-	-
AS1	-	-	-	-	.690	-	-	-
AS6	-	-	-	-	.677	-	-	-
AS3	-	-	-	-	.666	-	-	-
AS4	-	-	-	-	.659	-	-	-
AS5	-	-	-	-	.645	-	-	-
AS2	-	-	-	-	.635	-	-	-
AS7	-	-	-	-	.621	-	-	-
LB3	-	-	-	-	-	.671	-	-
LB4	-	-	-	-	-	.637	-	-
LB6	-	-	-	-	-	.633	-	-
LB5	-	-	-	-	-	.617	-	-
LB2	-	-	-	-	-	.605	-	-
LB7	-	-	-	-	-	.589	-	-
LB1	-	-	-	-	-	.561	-	-
CQ1	-	-	-	-	-	-	.676	-
CQ4	-	-	-	-	-	-	.657	-
CQ7	-	-	-	-	-	-	.647	-
CQ2	-	-	-	-	-	-	.637	-
CQ6	-	-	-	-	-	-	.632	-
CQ3	-	-	-	-	-	-	.584	-
CQ5	-	-	-	-	-	-	.568	-

Table 2 Presents the Results of Principal Component Analysis (PCA) After Varimax Rotation (Con.)

Variable	Element 1	Element 2	Element 3	Element 4	Element 5	Element 6	Element 7	Element 8
MT3	-	-	-	-	-	-	-	.686
MT1	-	-	-	-	-	-	-	.679
MT2	-	-	-	-	-	-	-	.659
MT4	-	-	-	-	-	-	-	.657
MT6	-	-	-	-	-	-	-	.640

Based on Table 2, all factor loadings were .508 or higher, exceeding the recommended threshold of 0.5 (Hair et al., 2019), indicating acceptable levels for interpretation.

The eight components were named according to their underlying constructs, reflecting the key factors influencing students' learning outcomes in the Principles of Marketing course.

Table 3 Presents the Results of the Item Selection for Component 1

No.	Var	Observe	Component Weight
1	TE3	The instructor organizes diverse learning activities.	.690
2	LE3	Classmates actively cooperate in learning activities.	.650
3	TE5	The instructor encourages student participation in learning.	.648
4	TE1	The instructor explains the content in an easily understandable way language.	.647
5	TE6	The instructor treats all students equally.	.640
6	TE2	The instructor uses real-life examples to support teaching.	.626
7	TE4	The instructor responds to students' questions thoroughly.	.622
8	TE7	The instructor summarizes key points in each session.	.607
9	LE1	The classroom atmosphere supports learning.	.590
10	LE4	Students exchange opinions with one another.	.583
11	LE5	Students can easily access learning resources.	.565
12	LE2	The classroom is adequately equipped with facilities.	.563

Based on Table 3, the highest loading was for “The instructor organizes diverse learning activities” (.690), highlighting the importance of designing varied and learner-appropriate activities. This was followed by “Classmates actively cooperate in learning activities” (.650) and “The instructor encourages student participation” (.648), showing that both teaching and social factors significantly influence perceived learning environment quality.

Other instructor-related items, such as “The instructor explains content in an easily understandable language” (.647), “The instructor treats all students equally” (.640), and “The instructor uses real-life examples” (.626), align with learner-centered teaching and authentic learning approaches (Biggs & Tang, 2011).

Variables related to physical and supportive learning environments, including “The classroom atmosphere supports learning” (.590), “Students exchange opinions” (.583), “Students can easily access learning resources” (.565), and “The classroom is adequately equipped” (.563), had slightly lower loadings but were still acceptable (Hair et al., 2019).

Overall, Component 1 represents the dimension of classroom learning environment and instructional management, encompassing the instructor’s role, student interactions, and the overall learning atmosphere in a systematic manner.

Table 4 Presents the Results of Item Selection for Component 2

No.	Var	Observe	Component Weight
1	LM5	I try to understand rather than just memorize	.672
2	LM2	I am interested in the content of the Principles of Marketing course	.670
3	LS4	I can summarize the key points of the content	.670
4	LM3	I want to learn more about marketing	.658
5	LM1	I recognize the relevance of this course to my future career	.649
6	LM4	I have clear learning goals for this course	.617
7	LM6	I am willing to put effort into learning this course	.616
8	LM7	I feel challenged when learning new content	.598
9	LS3	I can relate new knowledge to prior knowledge	.591
10	LS2	I can distinguish main points from minor details	.582
11	LS1	I can take effective notes while listening to lectures	.541

Based on Table 4, the items in Component 2 primarily reflect the dimension of “learning motivation combined with students’ learning process skills.” The highest loading was for “I try to understand rather than just memorize” (.672), indicating students’ tendency toward deep learning. This was followed by “I am interested in the content of the Principles of Marketing course” and “I can summarize the key points of the content,” both with loadings of 0.670, reflecting intrinsic motivation and the ability to process core content.

Items such as “I want to learn more about marketing” (.658) and “I recognize the relevance of this course to my future career” (.649) indicate long-term goal-oriented motivation, while

“I have clear learning goals for this course” (.617) and “I am willing to put effort into learning this course” (.616) reflect self-regulation and commitment. “I feel challenged when learning new content” (.598) highlights a positive attitude toward learning difficulties, a key factor in student development.

Regarding learning skills, “I can relate new knowledge to prior knowledge” (.591) and “I can distinguish main points from minor details” (.582) indicate analytical and integrative thinking, whereas “I can take effective notes while listening to lectures” (.541), though the lowest loading, remains acceptable (Hair et al., 2019).

Thus, Component 2 can be labeled “Learning Motivation and Learning Skills,” encompassing intrinsic motivation, goal clarity, effort, challenge orientation, and cognitive processing skills, consistent with theories linking learning motivation to deep learning strategies (Pintrich & De Groot, 1990; Zimmerman, 2002).

Table 5 Presents the Results of Item Selection for Component 3

No.	Var	Observe	Component Weight
1	SS2	I have classmates who help each other and share knowledge	.718
2	PK5	I can relate prior knowledge to new content	.717
3	PK1	I have prior knowledge about business	.694
4	SS1	I receive support from my family for learning	.668
5	SS4	The university provides sufficient additional learning resources	.659
6	PK2	I have studied marketing on my own before	.655
7	SS5	I can access help when I encounter learning problems	.641
8	SS3	The instructor provides consultation outside class when needed	.621
9	PK3	I have work or business experience	.603
10	PK4	I understand basic business terminology	.598

Based on Table 5, all items in Component 3 exhibited relatively high factor loadings ranging from .598 to .718, indicating a clear and well-defined component. The highest loading was SS2, “I have classmates who help each other and share knowledge” (.718), followed by PK5, “I can relate prior knowledge to new content” (.717), and PK1, “I have prior knowledge about business” (.694), highlighting the importance of peer learning and prior knowledge in enhancing learning effectiveness in the Principles of Marketing course.

Items related to support from the learning environment, such as SS1, “I receive support from my family for learning” (.668), SS4, “The university provides sufficient additional learning resources” (.659), and SS3, “The instructor provides consultation outside class when needed” (.621), indicate that this component encompasses social support from family, peers, and the institution. This aligns with the concept of social support and learning environment, which emphasizes the role of social networks in motivation and academic success.

Furthermore, items representing prior knowledge (PK2, PK3, PK4) with loadings between .603 and .655 reflect the academic foundation that enables students to comprehend new content

effectively, consistent with constructivist theories emphasizing learning through connection to existing knowledge structures (Piaget, 1970; Ausubel, 1968).

Overall, Component 3 can be interpreted as “Support and Prior Knowledge,” highlighting its critical role in students’ preparedness and learning potential. This component should be strategically fostered in higher education, particularly in courses emphasizing analytical thinking and knowledge application, such as Principles of Marketing.

Table 6 Presents the Results of Item Selection for Component 4

No.	Var	Observe	Component Weight
1	PLO3	I can analyze marketing case studies	.697
2	SAT2	I feel that I have learned useful new knowledge	.694
3	SAT5	I am confident in the knowledge gained from this course	.688
4	PLO2	I can explain key marketing concepts	.655
5	SAT4	I would recommend this course to junior students	.642
6	SAT1	Overall, I am satisfied with the teaching methods of this course	.615
7	SAT3	I feel that my learning time is well-spent	.615
8	PLO1	I understand the fundamental principles of marketing well	.581
9	PLO4	I can apply the knowledge in practice	.528
10	PLO5	I am willing to take more advanced marketing courses	.508

Based on Table 6, all items in Component 4 exhibited factor loadings ranging from .508 to .697, indicating moderate to relatively high levels and meeting commonly accepted criteria for exploratory factor analysis (Hair et al., 2019).

The highest loading was PLO3, “I can analyze marketing case studies” (.697), followed by SAT2, “I feel that I have learned useful new knowledge” (.694), and SAT5, “I am confident in the knowledge gained from this course” (.688), reflecting both higher-order cognitive learning outcomes and students’ satisfaction/self-confidence as a result of their learning experience.

Items PLO2 and PLO1, with loadings of .655 and .581, respectively, indicate understanding of key marketing concepts and fundamental principles, while PLO4 and PLO5, though slightly lower (.528 and .508), reflect the ability to apply knowledge and readiness for advanced study. This aligns with Outcomes-Based Education (OBE) and Bloom’s Taxonomy, progressing from “understanding” to “analysis” and “application” (Anderson & Krathwohl, 2001).

Satisfaction-related items (SAT1, SAT3, SAT4), with loadings between .615-.642, show that perceived satisfaction, the value of learning experiences, and the intention to recommend the course are integrated with cognitive learning outcomes, consistent with previous research highlighting the impact of learning experience quality on academic achievement and students’ attitudes (Astin, 1993; Biggs & Tang, 2011).

Therefore, Component 4 can be interpreted as “Learning Outcomes and Satisfaction,” reflecting both students’ academic abilities in marketing and their positive perceptions of the course’s value and benefits, indicating the direct effectiveness of instructional practices.

Table 7 Presents the Results of Item Selection for Component 5

No.	Var	Observe	Component Weight
1	AS1	The exams reflect the course content comprehensively	.690
2	AS6	The instructor provides feedback on learning outcomes	.677
3	AS3	The number of exam questions is appropriate for the allocated time	.666
4	AS4	The grading criteria are fair	.659
5	AS5	Multiple assessment methods are used (tests, assignments, participation)	.645
6	AS2	The difficulty level of the exams is appropriate for the students	.635
7	AS7	Assessments promote student learning	.621

Based on Table 7, the items in Component 5 primarily reflect the “quality, appropriateness, and fairness of learning assessment.”

The highest loading was “The exams reflect the course content comprehensively” (.690), indicating that students place strong importance on alignment between instruction and assessment. This was followed by “The instructor provides feedback on learning outcomes” (.677) and “The number of exam questions is appropriate for the allocated time” (.666), highlighting the role of feedback and context-appropriate assessment design.

Other items, such as “The grading criteria are fair” (.659) and “Multiple assessment methods are used (tests, assignments, participation)” (.645), emphasize transparency and diversity in assessment methods, consistent with the concept of Assessment for Learning. Additionally, “The difficulty level of the exams is appropriate for the students” (.635) and “Assessments promote student learning” (.621) indicate that students perceive assessment as a tool for learning development, not merely for evaluating achievement.

Therefore, Component 5 can be labeled “Assessment System,” aligning with Constructive Alignment principles that emphasize the connection between learning objectives, teaching activities, and assessment (Biggs & Tang, 2011), as well as the Assessment for Learning approach, which promotes continuous learner development (Black & Wiliam, 2009).

Table 8 Presents the Results of Item Selection for Component 6

No.	Var	Observe	Component Weight
1	LB3	I prepare before attending class each time	.671
2	LB4	I regularly review the lessons after class	.637
3	LB6	I cooperate in group activities	.633
4	LB5	I ask questions when I have doubts	.617
5	LB2	I pay attention during lectures	.605
6	LB7	I submit assignments on time	.589
7	LB1	I attend classes regularly	.561

Based on Table 8, the items in Component 6 primarily reflect “students’ learning behaviors and responsibility” before, during, and after class.

The highest loading was “I prepare before attending class each time” (.671), indicating that prior preparation is a key behavior that enhances learning effectiveness. This was followed by “I regularly review the lessons after class” (.637) and “I cooperate in group activities” (.633), reflecting self-discipline and active participation in collaborative learning, which are essential 21st-century skills.

Items such as “I ask questions when I have doubts” (.617) and “I pay attention during lectures” (.605) indicate active learning behaviors, while “I submit assignments on time” (.589) and “I attend classes regularly” (.561) reflect responsibility and self-management in ongoing learning. Although these latter loadings are slightly lower, they remain acceptable according to exploratory factor analysis criteria (Hair et al., 2019).

Therefore, Component 6 can be labeled “Proactive Learning Behavior,” encompassing preparation, participation, responsibility, and self-management in a systematic learning process. This aligns with Self-Regulated Learning theories, which suggest that such behaviors are positively associated with academic achievement (Zimmerman, 2002; Pintrich, 2003).

Table 9 Presents the Results of Item Selection for Component 7

No.	Var	Observe	Component Weight
1	CQ1	The content of the Principles of Marketing course is up-to-date and current	.676
2	CQ4	Each chapter is clearly connected to the others	.657
3	CQ7	The content can be applied in daily life	.647
4	CQ2	The content aligns with labor market needs	.637
5	CQ6	The content includes diverse examples and case studies	.632
6	CQ3	The topics are organized in a proper and logical sequence	.584
7	CQ5	The amount of content is appropriate for the allocated classtime	.568

Based on Table 9, the items in Component 7 primarily reflect the “quality and appropriateness of course content,” including aspects of currency, coherence, connectivity, and practical applicability (Pichit, 2024).

The highest loading was “The content of the Principles of Marketing course is up-to-date and current” (.676), indicating that students perceive the importance of content aligned with current contexts and changes in the business environment. This was followed by “Each chapter is clearly connected to the others” (.657) and “The content can be applied in daily life” (.647), reflecting the systematic structure of the course and the ability to apply knowledge in practice—key features of effective course design and development.

Other items, such as “The content aligns with labor market needs” (.637) and “The content includes diverse examples and case studies” (.632), highlight the connection between classroom learning and real-world work contexts, consistent with competency-based learning and Outcome-Based Education (OBE) principles that emphasize learner readiness for professional practice (Biggs & Tang, 2011). Although “The topics are organized in a proper and logical sequence” (.584) and “The amount of content is appropriate for the allocated class time” (.568) have slightly lower loadings, they remain acceptable and reflect the balance and appropriateness of course content structure, which is critical for effective learning management (Reigeluth & Carr-Chellman, 2009; Hair et al., 2019).

Therefore, Component 7 can be labeled “Content Quality and Appropriateness,” encompassing content currency, alignment with labor market demands, systematic structure, and the potential for practical application in daily life and future professional contexts.

Table 10 Presents the Results of Item Selection for Component 8

No.	Var	Observe	Component Weight
1	MT3	The use of videos and visual media helps to understand the content effectively	.686
2	MT1	Teaching materials are clear and complete	.679
3	MT2	Presentation slides are appropriately designed and easy to follow	.659
4	MT4	The technology used in teaching generates student interest	.657
5	MT6	Learning media are appropriate for the content	.640

Based on Table 10, the items in Component 8 primarily reflect the “quality and effectiveness of media and technology in teaching and learning.”

The highest loading was “The use of videos and visual media helps to understand the content effectively” (.686), indicating that students recognize the role of visual and multimedia resources in enhancing understanding of complex content. This was followed by “Teaching materials are clear and complete” (.679) and “Presentation slides are appropriately designed and easy to follow” (.659), reflecting the importance of instructional media quality in terms of content clarity and structured information aligned with learning principles.

Additionally, “The technology used in teaching generates student interest” (.657) and “Learning media are appropriate for the content” (.640) highlight that selecting suitable technologies and instructional media can stimulate motivation and engagement in the learning process. This aligns with the Cognitive Theory of Multimedia Learning, which posits that properly designed multimedia enhances learners’ information processing and understanding (Mayer, 2009), as well as principles of Active Learning through digital technology integration (Reigeluth & Carr-Chellman, 2009).

Therefore, Component 8 can be labeled “Media and Instructional Technology,” encompassing the quality of instructional media, appropriateness of technology, and the role of media in promoting understanding and engagement in a systematic learning process.

Discussion

The results of the Exploratory Factor Analysis (EFA) indicate that the factors influencing academic achievement in the course Principles of Marketing for logistics students can be classified into eight principal components. Among these, Factor 1, “Teaching Quality and Learning Environment,” contains the largest number of observed variables (12 items), underscoring the critical importance of instructional effectiveness and a learning environment conducive to student engagement and understanding. This is followed by Factor 2, “Learning Motivation and Learning Skills” (11 items), which highlights the significance of internal student-related factors. The emergence of these eight factors is consistent with learning theories that conceptualize academic success as the interaction between external factors, such as teaching quality, educational technology, and assessment systems, and internal factors, including motivation, learning skills, and learning behaviors. These findings suggest that achievement in the Principles of Marketing course does not result from any single factor in isolation, but rather from the combined influence of multiple dimensions involving instructors, learners, course content, pedagogical approaches, support systems, and technology.

Notably, the factor comprising the greatest number of variables—Teaching Quality and Classroom Learning Environment—demonstrates the pivotal role of instructors and the overall learning atmosphere in shaping students’ perceptions of understanding, engagement, and psychological safety in the learning process. At the same time, the factor Learning Motivation and Learning Skills reflects the importance of internal learner attributes, particularly deep motivation and analytical thinking skills, which form the foundation of sustainable and meaningful learning. Furthermore, the finding that PLO and SAT load onto the same factor provides empirical support for the notion that meaningful learning experiences foster positive long-term attitudes toward both the course and the academic discipline. This result aligns with the theoretical perspectives of Biggs and Tang (2011) and Astin (1993), who argue that high-quality learning experiences simultaneously enhance academic achievement and learner satisfaction.

The identification of PLO as a key factor is also directly aligned with the core principles of the AQRF, which emphasize learning outcomes as the primary basis for the comparability of qualifications across countries. Students’ perceptions that they have acquired the expected knowledge and skills, therefore, serve as an important indicator of educational effectiveness in meeting regional standards. However, given that Thailand has already aligned its National Qualifications Framework with the AQRF, an important question arises: Do current curricula produce the learning outcomes sufficient to ensure graduates’ competitiveness in the ASEAN labor market?

Moreover, the finding that Teaching Quality and Learning Environment exerts the strongest influence on students' perceived learning outcomes and satisfaction should be considered within a broader ASEAN context. As noted by Carter (2016), the development of marketing curricula in Thailand remains largely constrained by a nationalistic perspective. While teaching quality may be satisfactory within the domestic context, it may not be adequate to prepare graduates for competition at the international level. Consequently, learning environments should be designed to foster students' understanding of cultural diversity and market dynamics across ASEAN countries, thereby equipping them with the competencies required to operate effectively in cross-cultural environments, which are a defining characteristic of the ASEAN Economic Community.

Conclusion

This study provides empirical evidence on the structural factors influencing learning outcomes in the Principles of Marketing course in higher education. The findings identify eight key components that collectively explain students' learning outcomes and perceptions, reflecting a comprehensive view of instructional quality, learning environment, learning motivation, instructional design, and assessment practices. These components are consistent with learner-centered and outcome-based education frameworks.

The results highlight that effective learning outcomes are achieved through a holistic instructional approach that integrates faculty competency development, appropriate use of instructional media and technology, active learning strategies, and assessment systems aligned with intended learning outcomes. The proposed framework offers practical implications for curriculum administrators and educators in improving course design, instructional practices, and internal quality assurance processes in higher education institutions.

From an academic perspective, the identified components provide a conceptual foundation for future empirical studies. Further research is recommended to validate the proposed model using Confirmatory Factor Analysis (CFA) and to examine causal relationships among instructional factors, learning outcomes, and student satisfaction through Structural Equation Modeling (SEM). Expanding the scope of investigation to other academic disciplines and institutions would enhance the generalizability of the findings.

In the context of the ASEAN Economic Community, the findings also offer implications for regional curriculum development. Comparative studies across ASEAN higher education institutions, investigations into regional labor market demands, and curriculum evaluation aligned with the AQRF would contribute to strengthening graduate competencies, supporting labor mobility, and enhancing the international competitiveness of higher education graduates.

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Thailand's Grand Strategy for Higher Education: Reimagining Universities as the Nation's Brain in the ASEAN Context

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Abstract

Thailand's higher education reform has primarily focused on enhancing university efficiency, establishing quality assurance mechanisms, and aligning with labor market demands. While these initiatives have generated measurable improvements, they remain fragmented and predominantly operational, offering limited contribution to long-term national strategic capacity. This article argues that such limitations stem not from implementation failure but from a constrained conceptualization of universities' role in national governance.

Drawing on the perspective of Grand Strategy, this study reframes universities as strategic institutions that generate national intelligence rather than merely deliver educational services. Building upon Nayef Al-Rodhan's triadic intelligence framework (2016), the article introduces the Nation Brain System Model, integrating knowledge intelligence, moral intelligence, and digital intelligence within higher education governance. Within this framework, *Thainess* is conceptualized as national consciousness, research and artificial intelligence function as enabling cognitive mechanisms, and wisdom emerges as the sustaining condition for long-term societal development.

The article further situates Thailand's higher education system within the ASEAN strategic environment, proposing that universities operate not only as national cognitive cores but also as interconnected nodes within a regional intelligence network. By linking higher education governance with ethical foundations, digital transformation, and regional connectivity, this study contributes an integrative framework to educational administration and public policy literature, offering strategic direction beyond incremental reform.

Keywords: Higher Education Policy, Educational Administration, Grand Strategy, Nation Brain System, ASEAN

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Introduction

Higher education systems are no longer confined to their traditional mandates of teaching and research. Across many national contexts, universities have gradually assumed strategic roles in shaping innovation capacity, policy deliberation, and social cohesion. This shift reflects broader transformations driven by technological disruption, economic restructuring, and demographic change. As a result, higher education has become increasingly embedded within national development strategies rather than positioned at their periphery.

In Thailand, higher education reform has unfolded through multiple waves of policy intervention, including the establishment of quality assurance regimes, curriculum standardization, and competency-based education initiatives (Mulder et al., 2010). These reforms have strengthened institutional accountability and operational efficiency. However, their cumulative impact has been uneven (World Bank, 2019). Universities continue to operate largely as autonomous organizations that respond to short-term policy directives, rather than as strategic partners that contribute systematically to national governance and long-term development.

From an educational administration perspective, this condition points to a deeper structural issue. The primary limitation of Thai higher education reform lies not in technical design or institutional capacity, but in strategic orientation. Reform initiatives are frequently implemented as discrete administrative projects, disconnected from an overarching framework that links higher education to long-term national goals. Consequently, institutional missions become fragmented, and system-level coherence remains underdeveloped.

This challenge is further intensified by Thailand's positioning within the ASEAN regional environment. Cross-border mobility, digital transformation, and regional policy alignment are increasingly shaping the expectations of higher education systems. Universities are now required to operate simultaneously within national regulatory frameworks and regional knowledge networks. Yet existing reform approaches rarely address this dual positioning coherently.

This article proposes that a Grand Strategy perspective offers a viable conceptual framework for addressing these limitations. By conceptualizing universities as the “nation's brain”, higher education institutions can be understood as the cognitive core of national development—integrating knowledge production, ethical orientation, and technological capability. At the same time, situating Thai universities within the ASEAN strategic context highlights their potential role as regional knowledge nodes contributing to collective intelligence beyond national boundaries.

The purpose of this article is therefore to develop a conceptual and policy-oriented framework that reimagines Thai universities as strategic institutions embedded within both national governance and the ASEAN regional system. Through the proposed National Brain System Model, the study seeks to bridge higher education governance, ethical foundations, and regional connectivity in a manner consistent with long-term national and regional development.

Higher Education Reform and Policy Fragmentation in Thailand

Thai higher education has historically been shaped by centralized governance structures designed to ensure quality, equity, and standardization. While these arrangements have provided stability and accountability, they have also produced bureaucratic rigidity and limited institutional adaptability. Policy reforms have tended to prioritize measurable outputs such as accreditation results, graduate employability indicators, and international rankings.

Although these metrics are important, their dominance has encouraged compliance-oriented behavior rather than strategic innovation. Universities often focus on meeting regulatory benchmarks instead of developing long-term institutional capacities aligned with national priorities. As a result, higher education reform becomes fragmented, with individual initiatives operating in isolation rather than contributing to a coherent system.

Educational administration research suggests that such conditions constrain universities' ability to function as strategic institutions. When higher education organizations are positioned primarily as service providers within a regulatory framework, their contribution to national intelligence production, policy experimentation, and ethical leadership remains underdeveloped. This fragmentation becomes more pronounced as Thailand seeks to align its higher education system with regional ASEAN initiatives that require flexibility, collaboration, and strategic autonomy.

This fragmentation reflects not only administrative inefficiency but also a deeper structural weakness in the governance logic of Thai higher education. When reform agendas are driven primarily by externally imposed indicators, universities are encouraged to respond tactically rather than strategically. Compliance becomes rational institutional behavior, while long-term institutional learning and strategic differentiation are deprioritized. Over time, this dynamic erodes universities' capacity to articulate distinctive missions and to invest in capabilities that extend beyond short-term regulatory cycles (Kaplan & Norton, 1996).

From an educational administration perspective, such governance conditions limit universities' ability to operate as strategic organizations. Rather than functioning as adaptive knowledge institutions capable of sense-making, experimentation, and foresight, universities are positioned as delivery mechanisms within a tightly controlled policy framework. This positioning constrains their role in generating national intelligence, shaping public policy discourse, and cultivating ethical leadership for complex societal challenges (Brew, 2010; Kezar & Maxey, 2014; Al-Rodhan, 2016). The result is a higher education system that performs administrative functions efficiently but struggles to contribute strategically to national transformation.

The problem becomes more acute in the context of regional integration. ASEAN higher education initiatives emphasize collaboration, mobility, mutual recognition, and institutional autonomy as foundations for regional competitiveness (ASEAN University Network, 2019). These objectives require universities to possess sufficient strategic discretion to form partnerships, develop niche expertise, and engage in cross-border knowledge production. Fragmented and compliance-driven governance, however, limits Thai universities' ability to participate meaningfully in such initiatives, reducing regional alignment to formal participation rather than substantive integration.

Moreover, the dominance of output-based metrics reinforces internal fragmentation within institutions themselves. Teaching, research, and community engagement are often treated as separate compliance domains rather than integrated components of a unified institutional strategy. This separation weakens interdisciplinary collaboration and discourages universities from addressing complex national and regional problems that require holistic approaches (Brew, 2010; Kezar & Maxey, 2014). As a consequence, higher education reform initiatives accumulate without generating systemic coherence or cumulative strategic impact.

In this context, higher education reform in Thailand risks becoming an incremental and reactive process rather than a transformative one. Without an overarching strategic frame-

work that aligns institutional autonomy, accountability, and national priorities, reforms remain fragmented across agencies, programs, and funding mechanisms. Universities adapt to policy signals individually, but the system as a whole lacks the capacity to evolve as an integrated national knowledge infrastructure capable of responding to technological disruption and competence transformation (Brynjolfsson & McAfee, 2014; Mulder et al., 2010).

Addressing policy fragmentation, therefore, requires a fundamental rethinking of universities' role in Thailand's development strategy. Higher education institutions must be conceptualized not merely as regulated service providers, but as strategic actors entrusted with long-term knowledge creation, ethical leadership development, and policy experimentation. Such a shift is consistent with the logic of a grand strategy, in which institutional capacities must align with long-term national objectives rather than short-term tactical control (Luttwak, 2009). Only through such a shift can higher education reform move beyond fragmented compliance and toward a coherent system that supports Thailand's aspirations in the ASEAN region and the global knowledge economy (Farrell & Newman, 2019).

Grand Strategy and Higher Education Governance

Grand Strategy refers to the alignment of long-term national objectives with political, economic, cultural, and technological resources (Luttwak, 2009). Unlike sector-specific policy approaches, it emphasizes systemic coherence, strategic foresight, and institutional coordination across multiple domains.

Applied to higher education governance, a Grand Strategy perspective implies a fundamental shift in how universities are conceptualized within the policy system. Rather than functioning solely as implementers of ministerial directives, universities are understood as strategic institutions capable of generating national intelligence, informing public policy, and enhancing societal resilience.

From this perspective, higher education reform is not merely an administrative exercise but a strategic undertaking that shapes national capacity to respond to complexity and uncertainty. Without such a framework, reform initiatives risk remaining incremental and reactive, particularly in an increasingly competitive and interconnected ASEAN environment.

Building on this perspective, Grand Strategy offers an analytical lens that reveals the structural limitations of fragmented higher-education governance. As Luttwak (2009) emphasizes, grand strategy is not concerned with optimizing individual sectors in isolation, but with orchestrating institutions so that their collective capacities reinforce long-term national objectives. In the absence of such orchestration, even well-designed reforms risk producing localized efficiency gains without contributing to systemic resilience or strategic coherence.

When applied to higher education governance, this insight underscores the inadequacy of indicator-driven reform models. Performance metrics such as rankings, employability rates, and accreditation scores may improve surface-level outcomes, but they do not necessarily enhance a nation's strategic intelligence or adaptive capacity (Kaplan & Norton, 1996). Without an overarching strategic framework, these indicators function as fragmented control mechanisms rather than as instruments for institutional learning and strategic alignment.

A Grand Strategy approach, therefore, requires universities to be repositioned as core components of the national intelligence infrastructure. This role extends beyond knowledge transmission and workforce preparation to include policy analysis, foresight generation, ethical deliberation, and the cultivation of strategic leadership (Al-Rodhan, 2016). Universities, in this

sense, operate as cognitive and normative institutions that support state capacity in navigating uncertainty, technological disruption, and geopolitical interdependence.

Educational administration scholarship reinforces this argument by highlighting the importance of institutional autonomy and integrative governance. Brew (2010) and Kezar and Maxey (2014) demonstrate that universities are most effective when teaching, research, and societal engagement are aligned within a coherent strategic mission. Fragmented governance regimes, by contrast, encourage siloed compliance and inhibit universities' ability to address complex problems that cut across disciplinary and organizational boundaries.

The relevance of Grand Strategy becomes particularly evident in the ASEAN context. Regional higher education initiatives emphasize collaboration, mobility, and mutual recognition, all of which presuppose a degree of strategic autonomy and institutional discretion (ASEAN University Network, 2019). Without a grand strategic orientation at the national level, Thai universities face structural constraints that limit their ability to engage meaningfully in regional knowledge networks. Participation risks becoming procedural rather than transformative, weakening Thailand's position within the ASEAN higher education ecosystem.

Furthermore, rapid technological change amplifies the strategic importance of higher education governance. Brynjolfsson and McAfee (2014) argue that advanced economies increasingly depend on institutions capable of fostering creativity, systems thinking, and ethical judgment—capacities that cannot be engineered through fragmented administrative controls alone. Similarly, Mulder et al. (2010) emphasize that competence development requires integrative institutional environments rather than narrowly optimized performance silos.

From a Grand Strategy perspective, higher education reform must therefore move beyond incremental policy adjustments toward a reconfiguration of governance logic. Universities should be governed through frameworks that balance accountability with strategic autonomy, enabling them to contribute to long-term national objectives while remaining responsive to societal needs. Such a shift aligns higher education governance with broader strategic imperatives, including economic resilience, regional integration, and ethical leadership in an interconnected world (Farrell & Newman, 2019).

In sum, incorporating Grand Strategy into higher education governance reframes reform as a nation-building endeavor rather than a technocratic exercise. It positions universities as strategic actors within a coordinated national system, capable of generating intelligence, shaping policy, and sustaining societal resilience. Without this reframing, higher education reform risks remaining fragmented, reactive, and misaligned with Thailand's long-term aspirations in the ASEAN region and the global knowledge economy.

Higher Education and the ASEAN Strategic Environment

National higher education systems do not operate in isolation. For ASEAN member states, higher education increasingly functions within a regional strategic environment characterized by economic integration, labor mobility, digital transformation, and shared governance challenges. Thailand's higher education reform must therefore be understood in relation to both domestic policy objectives and regional dynamics.

ASEAN initiatives such as the ASEAN University Network, regional qualification frameworks, and cross-border research collaboration reflect an emerging architecture of regional knowledge governance. Within this environment, universities serve as conduits for policy learning, talent circulation, and normative alignment across member states.

From a Grand Strategy perspective, ASEAN should be viewed not merely as a competitive arena but as an extended cognitive space. Thai universities are positioned not only to produce national human capital but also to enhance Thailand's role as a regional knowledge hub contributing to ASEAN's collective resilience, innovation capacity, and ethical governance.

Building on this understanding, the ASEAN strategic environment reshapes the role of higher education from a nationally bounded system into a regionally embedded governance mechanism. As economic integration deepens and labor mobility increases, universities increasingly mediate flows of talent, knowledge, and norms across national boundaries. In this context, higher education systems become critical infrastructures for regional coordination rather than merely domestic policy instruments (ASEAN University Network, 2019).

ASEAN initiatives such as the ASEAN University Network, regional qualification frameworks, and collaborative research platforms signal a gradual shift toward shared governance in knowledge production. These mechanisms facilitate policy learning among member states, promote mutual recognition of competencies, and encourage convergence around quality standards and academic norms. However, participation in this emerging architecture requires universities to possess strategic autonomy and adaptive capacity—conditions that are difficult to achieve within fragmented, compliance-driven national governance regimes (Brew, 2010; Kezar & Maxey, 2014).

From a Grand Strategy perspective, ASEAN should not be conceptualized solely as a competitive arena in which universities seek ranking advantages or student market share. Rather, ASEAN constitutes an extended cognitive space in which knowledge institutions collectively contribute to regional intelligence, resilience, and normative coherence (Luttwak, 2009; Al-Rodhan, 2016). Within such space, universities function as strategic nodes that translate national priorities into regional contributions and, conversely, internalize regional norms into domestic institutional practice.

For Thailand, this reframing has significant strategic implications. Thai universities are positioned not only to produce national human capital but also to act as regional knowledge hubs that support ASEAN's collective capacity for innovation, ethical governance, and policy experimentation. This role requires universities to engage in cross-border research addressing shared challenges such as digital transformation, demographic change, sustainability, and governance reform—areas that demand integrative and interdisciplinary approaches (Brynjolfsson & McAfee, 2014; Mulder et al., 2010).

However, fragmented higher education governance constrains Thailand's ability to fully realize this potential. When universities are tightly bound by indicator-based controls and short-term accountability cycles, their capacity to initiate long-term regional partnerships and invest in strategic niche expertise is diminished. As a result, regional engagement risks becoming symbolic rather than transformative, reinforcing procedural compliance without generating substantive regional impact (Kaplan & Norton, 1996).

The strategic environment is further complicated by global interdependence and geopolitical competition. Farrell and Newman (2019) demonstrate that power increasingly operates through institutional networks that shape standards, information flows, and regulatory norms. In this landscape, higher education systems function as instruments of soft power and strategic influence. ASEAN's ability to act as a coherent knowledge region depends, in part, on the strategic alignment of its member states' higher education governance frameworks.

Consequently, Thailand's higher education reform must be situated within a dual strategic horizon: Strengthening domestic institutional capacity while simultaneously enhancing regional integration. A Grand Strategy approach provides the conceptual foundation for aligning these objectives by coordinating higher education governance with broader national and regional priorities. Without such alignment, Thailand risks underutilizing its universities as strategic assets within the ASEAN knowledge ecosystem.

In sum, higher education in the ASEAN strategic environment cannot be effectively governed by fragmented national policies alone. It requires a coordinated strategic framework that recognizes universities as regional actors embedded within a shared cognitive and normative space. By embracing this perspective, Thailand can reposition its higher education system as a driver of regional resilience, innovation, and ethical governance within ASEAN and the broader global knowledge economy.

Universities as the Nation's Brain

The metaphor of the "nation's brain" provides a conceptual lens for understanding the integrative role of universities in modern societies. Analogous to the human brain, which coordinates perception, reasoning, and decision-making, universities integrate knowledge creation, ethical reflection, and technological capability.

In Thailand, universities possess substantial intellectual and human capital. However, institutional fragmentation and governance constraints have limited their capacity to function as a coordinated system. Reimagining universities as the nation's brain requires a shift from compliance-based governance toward strategic autonomy combined with public accountability.

Importantly, this reframing does not imply abandoning regulatory oversight. Rather, it emphasizes governance arrangements that enable universities to contribute proactively to national and regional strategy while remaining aligned with public values, cultural identity, and ethical standards.

Building on this metaphor, conceptualizing universities as the nation's brain highlights their function as integrative cognitive institutions rather than isolated organizational units. In complex societies, strategic capacity depends not merely on the accumulation of information but on the ability to synthesize knowledge, interpret uncertainty, and guide collective decision-making. Al-Rodhan (2016) emphasizes that effective national intelligence emerges from the interaction between cognition, ethics, and strategic foresight—an interaction that universities are uniquely positioned to facilitate.

Within this framework, universities perform multiple interdependent functions analogous to neurological processes. Research activities generate new knowledge and exploratory insight; teaching and learning systems develop cognitive capacity and ethical judgment; and institutional engagement with society enables feedback, adaptation, and policy learning. When these functions operate in silos, the system loses its integrative capacity, much like a brain impaired by disrupted neural connectivity (Brew, 2010; Kezar & Maxey, 2014).

In the Thai context, the challenge lies not in the absence of intellectual capital but in the fragmentation of governance mechanisms, which inhibits systemic coordination. Indicator-driven oversight and short-term accountability cycles prioritize localized performance while weakening collective sense-making across the higher education system. From a strategic management perspective, this reflects a misalignment between governance instruments and long-term strategic objectives (Kaplan & Norton, 1996). As a result, universities are unable to operate as a coherent cognitive infrastructure capable of supporting national strategy.

Reimagining universities as the nation's brain, therefore, necessitates a recalibration of governance arrangements. Strategic autonomy must be expanded to allow institutions to experiment, collaborate, and invest in long-term capability development, while public accountability mechanisms should focus on strategic contribution rather than narrow compliance. Such a balance aligns with the logic of grand strategy, in which institutions are coordinated toward enduring national objectives rather than managed through fragmented tactical controls (Luttwak, 2009).

This reconceptualization is particularly salient in the context of technological transformation and regional interdependence. Brynjolfsson and McAfee (2014) argue that societies entering the second machine age require institutions capable of ethical judgment, adaptive learning, and systems thinking—capacities that extend beyond technical skill formation. Similarly, Mulder et al. (2010) emphasize that competence development depends on integrative environments that align cognitive, social, and ethical dimensions of learning.

At the regional level, universities functioning as the nation's brain also enhance Thailand's position within ASEAN's shared cognitive space. By contributing policy-relevant research, regional leadership development, and ethical frameworks for cooperation, Thai universities can support collective resilience and normative coherence across ASEAN (ASEAN University Network, 2019; Farrell & Newman, 2019). This role transforms higher education from a domestically bounded sector into a strategic platform for regional intelligence and soft power.

Ultimately, conceptualizing universities as the nation's brain reframes higher education governance as a matter of strategic state capacity rather than administrative control. It underscores the need for governance systems that enable coordination, learning, and foresight across institutions while preserving alignment with public values and cultural identity. Without such a shift, universities risk remaining underutilized assets—rich in potential but constrained by fragmented governance—rather than functioning as the cognitive core of national and regional strategy.

Conceptual Framework: The Nation Brain System Model

1. Theoretical Foundation

The Nation Brain System Model draws on Nayef Al-Rodhan's triadic intelligence framework (Al-Rodhan, 2016), which highlights the interplay among knowledge intelligence, moral intelligence, and digital intelligence in sustainable governance. This article adapts the framework to higher education policy by positioning universities as the institutional locus where these forms of intelligence converge.

2. Nation Brain System Model



3. Explanation of the Model

Within the model, universities function as the nation's cognitive core. Knowledge intelligence supports research capacity, policy analysis, and strategic foresight. Moral intelligence, grounded in Thainess, provides ethical orientation, social cohesion, and cultural continuity. Digital intelligence enables adaptation to artificial intelligence, big data, and emerging technologies.

These dimensions interact dynamically rather than hierarchically. Their integration within higher education institutions generates national wisdom, defined as the capacity for sustainable and ethically grounded development. In the ASEAN context, universities also function as interconnected nodes within a regional intelligence network, facilitating cross-border knowledge exchange and policy learning.

Strategic Alignment across System Levels

National Policy Level

At the national level, higher education policy should evolve from regulatory control toward strategic partnership. Universities can support evidence-based policymaking, digital governance, and long-term human capital strategy, particularly in areas of regional relevance such as labor mobility and technological standards within ASEAN (ASEAN University Network, 2019; Farrell & Newman, 2019).

Institutional Governance Level

At the institutional level, university leadership must balance academic autonomy with strategic accountability. Strategic management tools may be adapted to support coherence between institutional missions, national priorities, and regional engagement, provided they respect the distinctive nature of academic work.

Faculty and Academic Practice Level

At the faculty level, academics function as cognitive agents within the National Brain System. Their roles increasingly involve interdisciplinary research, policy engagement, and adaptive pedagogy. Professional development should therefore emphasize strategic, analytical, and regional competencies alongside disciplinary expertise.

Policy Implications for Educational Administration

The Nation Brain System Model offers several implications for educational administration and public policy. First, universities should be evaluated not only on operational performance but also on their contribution to national and regional intelligence. Second, higher education governance must integrate ethical and digital considerations into strategic decision-making. Third, coordination across national and ASEAN policy levels is essential to achieve systemic coherence (Schwab, 2017; Brynjolfsson & McAfee, 2014; Kaplan & Norton, 1996).

For Thailand, this perspective highlights the strategic value of universities in enhancing regional influence through knowledge diplomacy, ethical leadership, and digital governance rather than competition based solely on international rankings (Sooksomchitra & Sooksomchitra, 2014).

From an educational administration perspective, the Nation Brain System Model offers an alternative to fragmented reform approaches by emphasizing integration and strategic alignment. Rather than prescribing specific policy instruments, the model provides a conceptual lens for understanding higher education as a living system embedded within national and regional governance (Brew, 2010; Kezar & Maxey, 2014).

By situating universities simultaneously as national cognitive cores and ASEAN knowledge nodes, the framework extends the existing higher education policy literature and addresses the challenges of regional interdependence.

Conclusion

Thailand's higher education system stands at a strategic crossroads. Incremental reforms have improved efficiency and accountability but remain insufficient to address systemic challenges. This article argues that conceptualizing universities within a Grand Strategy framework—while situating them in the ASEAN strategic environment—can enhance their role as strategic institutions.

Through the integration of knowledge intelligence, moral intelligence rooted in Thinness, and digital intelligence, the Nation Brain System Model provides a pathway toward sustainable, ethically grounded, and regionally connected national development.

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Introductions for Manuscript Preparation

Manuscript Printing

The submitted manuscript must have the following specifications:

- 1) It must be 10 – 15 pages in length, printed on one side of A4 paper, with the margins (top, bottom, left, and right) of 1 inch (2.54 cm.). Set to single columns.
- 2) Manuscript should be as concise and precise as possible.
- 3) Abstract printed in 1 column.
- 4) All contents and references are printed in 1 column with 1 cm of indentation.
- 5) The simplified font is Times New Roman, with details as specified below:

Format Requirements for Each Component of the Manuscript	Font Size	Labeling
Title	18 (CT)	bold
Author's Name (Name/Surname)	12 (CT)	bold
Author's Affiliation / E-mail	9 (LJ)	First-page footer
Abstract Title	14 (LJ)	bold
Abstract Content (Single column)	12 (LJ)	regular
Keywords Title	14 (LJ)	bold
Keywords	12 (LJ)	regular
Topics	14 (LJ)	bold
Content	12 (LJ)	regular
References Head	14 (LJ)	bold
References (Alphabetically (A – Z))	12 (LJ)	regular
Table Title (On top of the table)	12 (LJ)	bold
Table Content (On top of the table)	12 (LJ)	regular
Figure Title; Chart Title (Under the figure or chart)	12 (CT)	bold
Figure Content; Chart Content (Under the figure or chart,)	12 (CT)	regular
Source Head (Under the table/ the figure/ chart)	9 (LJ)	bold
Source Content (Under the table/ the figure/ chart)	9 (LJ)	regular

Components of the Article

1. Manuscript title
2. Name of every Author, with identification of affiliation office or university and country
3. Corresponding Author E-mail, identify only the e-mail of main author or the manuscript coordinator
4. Abstract must have the length of not more than 300 words, and must have Keywords of 3-5 words or phrases.
5. Content of manuscript
 - 5.1 Research article comprises: Introduction, Research Objective (s), Literature Review, Methodology, Results, Discussion, Conclusion, and Recommendations (If any)
 - 5.2 Academic article comprises: Introduction, Content, Conclusions, and Recommendations (If any)
6. References, using the format of APA (7th edition)
7. Figures, Charts, Tables, or other illustrations must be numbered, with correct reference of their sources. They must be clear, and distinctive, and not violate the copyright of the others.

The Examples of Presentation of Tables, Figures, and Charts

Table 1 Title of Table ...

“Table 1” printed in Times New 12 point font face, bold letters, left alignment

“Title of Table...” printed in Times New 12 point font face, normal letters

List		
(Each topic printed in Times New 12 point font face, bold letters, in the center of the table and in the center of each line)	Number	Percentage
Content (Times New 12 point font face, normal letters, in the center of the table and in the center of each line)	1	70
Content (Times New 12 point font face, normal letters, in the center of the table and in the center of each line)	2	30
Total	4	100

Sources or Remarks: Details.....

“Sources or Remarks:” printed in Times New 9 point font face, bold letters, left alignment

“Details...” printed in Times New 9 point, normal letters

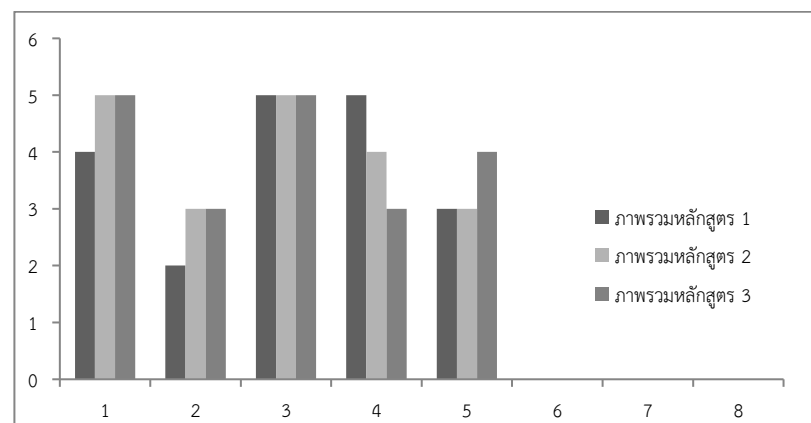


Figure 1 Name of Figure, Chart...

Sources or Remarks: Details.....

“Figure 1” printed in Times New 12 point font face, bold letters, center of the page
 “Name of Figure, Chart...” printed in Times New 12 point font face, normal letters
 “Sources or Remarks:” printed in Times New 9 point font face, bold letters, left alignment
 “Details...” printed in Times New 9 point, normal letters

As such, Tables, Figures, Charts, and Equations can be printed in one column, depending on the size, clarity, and appropriateness.

Quotations

Printed in Times New 12 point font face.

1. Quotations in the Contents

Format	Quotation (In front of the sentence)	Quotation (At the end of the sentence)
One author	Coghlan (1993)	(Coghlan, 1993)
Two authors	Mohsen and Mohammad (2011)	(Mohsen & Mohammad, 2011)
Three or more authors	Burkart et al. (1997)	(Burkart et al., 1997)
Organization	Ministry of Education (2020)	(Ministry of Education, 2020)
Organization using abbreviation	First quotation: National Institute of Development Administration (NIDA, 2018) Next quotation: NIDA (2018)	First quotation: (National Institute of Development Administration [NIDA], 2018) Next quotation: (NIDA, 2018)
Quotation from the document (Specify page number)	Shaw (2017, p. 172) or Shaw (2017, pp. 172-180)	(Shaw, 2017, p. 172) or (Shaw, 2017, pp. 172-180)
Quotation from interviews	J. M. Sun (Personal communication, August 18, 2021)	(Sun, J. M., Personal communication, August 18, 2021)

2. References at the End of the Article

All documents that have been quoted must be listed in the References at the end of the article. The list must be alphabetically ordered based on the reference sources and surname of the author. The reference format should follow that of APA (7th edition).

2.1 Format of Reference Based on Number of Authors

Authors	Reference at the End of Article
One author	Surname,/ First alphabet of name being a capital letter.
Two authors	Surname,/First alphabet of name being a capital letter./&/Surname of second author,/First alphabet of name being a capital letter.
3-20 Authors	Surname,/First alphabet of name being a capital letter./Surname,/First alphabet of name being a capital letter./Surname,/First alphabet of name being a capital letter./ (Number 1-19 authors),/&/Surname,/First alphabet of name being a capital letter. (Number 20 author)
21 Authors or more	Surname,/First alphabet of name being a capital letter./ (Number 1-19 authors),/././Surname,/First alphabet of name being a capital letter. (The last author)

2.2 Format of Reference Based on Documents

2.2.1 Journals

1) Journal (Printed)

Surname,/First alphabet of name being a capital letter./(A.D. year)./Article title./*Journal title*,
/////Volume(No.),/first page-last page of article in the journal.

Kraikunasai, J., Chongcharoen, K., Ngudgratoke, S., & Pukchanka, P. (2017). A causal model of administrative factors affecting educational quality in vocational school. *Panyapiwat Journal*, 9(2), 171-184.

2) Journal (Electronic)

Surname,/First alphabet of name being a capital letter./(A.D. year)./Article title./*Journal title*,
/////Volume(No.),/first page-last page of article in the journal./http://doi.org/xxxx or URL

Wachayee, N. (2014). Relationship between strategic performance based budgeting system and law on the budgetary procedures. *Jurisprudence Journal Naresuan University*, 7(2), 152-178. <http://doi.org/10.14456/nulj.2014.9>

Sittichai, O., & Silcharu, T. (2021). Guidelines for creating competitive advantage for processed food industry cluster. *Panyapiwat Journal*, 13(2), 12-26. <https://so05.tci-thaijo.org/index.php/pimjournal/article/view/240994>

2.2.2 Books

1) Book (Printed)

Surname,/First alphabet of name being a capital letter./(A.D. year)./Book title/(Edition)./Publisher.

* In case of no publication date, put n.d.

* In case of first edition, do not specify the edition.

* In case of no specification of publisher, put n.p.

Ritcharoon, P. (2016). *Principles of measurement and evaluation*. House of Kermyst.

Yamane, T. (1967). *Statistics: An introductory analysis* (2nd ed.). Harper and Row.

2) Book (Electronic without DOI)

Surname,/First alphabet of name being a capital letter./(A.D. year)./Book title/(Edition)./URL

* In case of no publication date, put n.d.

* In case of first edition, do not specify the edition.

* In case of no specification of publisher, put n.p.

Department of Primary Industries and Mines. (2017). *Benchmarking industrial logistics performance index supply chain performance index logistics scorecard*. <https://dol.dip.go.th/files/article/attachments/dol/3e30ca4fc9f964feeb57fce3fc602c04.pdf>

3) Chapter in a Book

Surname,/First alphabet of name being a capital letter./(A.D. year)./Title of chapter or article./
/////In/First alphabet of editor's name being a capital letter/Surname/(Ed. or Eds.),/Book
/////title/(pp./page numbers)./Publisher.

Chin, W. W. (1998). The partial least squares approach to structural equation modeling. In G. A. Marcoulides (Ed.), *Modern methods for business research* (pp. 295-336). Lawrence Erlbaum Associates.

2.2.3 Thesis

1) Thesis (Printed)

Surname,/First alphabet of name being a capital letter./(A.D. year)./Title of thesis/[Master's thesis
/////or Doctoral dissertation]./Name of educational institution.

Seangsri, W. (2009). *An analysis and development of school network administration model in northeastern rural area* [Doctoral dissertation]. Chulalongkorn University.

2) Thesis (Electronic)

First Format

Surname,/First alphabet of name being a capital letter./(A.D. year)./Title of thesis/[Master's thesis
/////or Doctoral dissertation]./Name of website./URL

Lin, Q. (2020). *the influence of music teachers' competence on job performance-moderator role of interactive behavior* [Doctoral dissertation]. Panyapiwat Institute of Management Library. <http://elibrary.pim.ac.th/Record/833578>

Second Format

Surname,/First alphabet of name being a capital letter./(A.D. year)./Title of thesis/(UMI number or
/////other numbers)/[Doctoral dissertation or Master's thesis,/Name of university]./Name of
/////database.

Lope, M. D. (2014). *Perceptions of global mindedness in the international baccalaureate middle years programme: The relationship to student academic performance and teacher characteristics* (Order No. 3682837) [Doctoral dissertation, University of Maryland]. ProQuest Dissertations and Theses Global.

2.2.4 Research Report

Surname,/First alphabet of name being a capital letter./(A.D. year)./Title/(Report No. if given)./
/////Publisher./http://doi.org/xxxx or URL

National Cancer Institute. (2019). *Taking time: Support for people with cancer* (NIH Publication No. 18-2059). U.S. Department of Health and Human Services, National Institutes of Health. <https://www.cancer.gov/publications/patient-education/takingtime.pdf>

2.2.5 Electronic Media

Surname,/First alphabet of name being a capital letter./(A.D. year,/month/date)./Article title./
/////Name of website./URL

* In case of no publication date, put n.d.

* In case of only A.D. year appears, put only A.D. year

* In case of the author's name and the website name being the same, cut the website name

Minister of Tourism and Sport. (2020, January 9). *Bangkok flea markets: Adventurous shopping experience*. Tourism Thailand. <https://www.tourismthailand.org/Articles/bangkok-flea-markets-adventurous-shopping-experience>

Millburn, J. F. (2021). *How to start a successful blog in 2021*. The minimalists. <https://www.the.minimalists.com/blog/>

2.2.6 Articles/documents presented in academic conference (Proceedings)

Surname,/First alphabet of name being a capital letter./(A.D. year)./Title of article./In/First
/////alphabet of the editor's name being a capital letter./Surname/(Ed. or Eds.),/Name of
/////conference topic./Name of conference/(pp./page numbers)./Name of database./
/////https://doi.org/xxxx or URL

Phinitchai, S., Nawaratana, N., & Tanthanuch, J. (2021). Distributional-based analysis for health care insurance claim data. In *Globalization revisited: Building organization resilience with digital transformation. The 4th PIM International Conference* (pp. 715-725). Panyapiwat Institute of Management. <https://conference.pim.ac.th/zh/wp-content/uploads/2021/03/I-Social-Sciences-and-Humanities-Part-1.pdf>

2.2.7 Documents for the Conference

Surname,/First alphabet of name being a capital letter./(A.D. year./month/date)./Topic of
/////conference./In/First alphabet of the Chair Person's name being a capital letter./Surname/
/////Chair./Name of conference/[Symposium]./Name of conference organizer./Place of
/////conference.

Wasi, N., Poonpolkul, P., & Thephasdin na Ayudhya, C. (2021, September 30). Policy design for coping with aging society. In N. Wasi (Chair), *Future world money: Developing Thai digital currency* [Symposium]. BOT Symposium 2021: Building a Resilient Thailand. Bank of Thailand. <https://www.pier.or.th/conferences/2021/symposium/>

2.2.8 Interview Documents

Surname,/First alphabet of name being a capital letter./(A.D. year./month/date of the interview).
/////Interviewed by/First alphabet of the interviewer's name being a capital letter./Surname
/////Tape recording./Position of interviewee (If any)./Place of interview.

Chearavanont, S. (2021, September 30). Interviewed by N. Wanakijpaiboon [Tape recording]. Executive Chairman of Charoen Pokphand Group, Bangkok.

2.2.9 Newspapers

1) Newspaper (Printed)

Surname,/First alphabet of the author's name being a capital letter./(A.D. year./month/date)./
/////Topic or article title./Name of newspaper./first page-last page.

Sriwattanachai, R. (2014, October 24). The prefabricated generation of seasoning sauce market. *POST TODAY*, B3-B4.

2) Newspaper (Electronic)

Surname,/First alphabet of the author's name being a capital letter./(A.D. year,/month/date)./ /////Topic or article title./Name of newspaper./URL

Bangkok post and reuters. (2021, October 8). UK eases travel rules for countries including Thailand. *Bangkok Post*. <https://www.bangkokpost.com/thailand/general/2194651/uk-eases-travel-rules-for-countries-including-thailand>

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