

HUMAN BEHAVIOR, DEVELOPMENT and SOCIETY

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The journal has the following objectives:

- a). To stimulate the creation and synthesis of beneficial information, as well as its broad dissemination, especially in the varied fields of the humanities and social sciences,
- b). To foster a deeper understanding regarding the impact of business policies and practices on society, and
- c). To promote the adoption of best practices in communities through education, and to aid in the resolution of community issues for the betterment of society; this represents the development aspect referred to in its name.

Editorial Objectives

The editorial objectives are to advance knowledge through use of classical—or the creation of innovative—methods of investigation, and to foster the examination of cross-cultural issues to increase mutual understandings among diverse social groups. Encouraging cooperative studies and scholarly exchange across borders is a key aim, especially when these may have practical applications within the Southeast Asian region. The application of theoretical considerations to organizations, fields, and communities is also an outcome that is sought.

Journal Positioning

The journal is broadly based and has the potential to impact thinking and practices across a range of subject areas, dealing with substantive issues that arise in both developing and developed countries. It will likely appeal to readers with a broad appreciation of the social issues facing organizations, communities, and governments operating under varied challenges and constraints. Its contents are meant to appeal to both the academic community and practitioners in numerous areas of interest.

The positioning of the journal means that a variety of topics is covered in most issues. These, in turn, differ in their philosophical content, academic appeal, and practical implications.

Appropriate Content

The journal covers a broad spectrum of topics. These include, but are not limited to, anthropology, allied health focused on community issues and health education, education from the primary to the tertiary levels, literature, language use and acquisition, business, management, finance, geography, psychology, social sciences, philosophy, and theology. Well-executed studies that address interesting and significant topics in the areas mentioned above are particularly welcomed. All articles accepted should make significant contributions to understanding and add to the corpus of knowledge in their respective fields.

The following constitutes a partial list of topics that are considered potentially suitable for publication:

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2. Research about learning and teaching at all age and ability levels; topics include instructional methods, interventions, assessment, policies, and strategies, along with their impact on educational development.
3. Innovative and cost-effective approaches to health care, including promoting positive health outcomes in communities, creatively addressing addictive behavior, and the impact of health care interventions and policies.
4. Applied linguistic or linguistic studies that examine issues related to communication, language pedagogy and use, as well as theories and meaning of language.
5. Other humanities and social science areas such as anthropology, cross-cultural studies, and religious or biblical issues that explore historical, philosophical, or sociological topics in order to lead to a better understanding within societies.

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From the Editor

Human Behavior, Development and Society (HBDS) has been recognized as a Tier 1 journal by the Thai Journal Citation Index (TCI) with 5 five-year accreditation from 1 January 2025 to 31 December 2029. Therefore, all articles in the journal are indexed by the Thai-Journal Citation Index Centre (TCI), ASEAN Citation Index (ACI), and the EBSCO database.

The journal is an international, open-access, and interdisciplinary peer-reviewed journal published three issues a year by Asia-Pacific International University (AIU). *HBDS* publishes academic research articles in the humanities, social sciences, education, business administration, religion, health, public administration, development, tourism, and other social sciences areas that contribute to the development of the concepts, theories, as well as new knowledge for developing the community and society. The journal's scope is to advance knowledge through the use of classical methods of investigation and to foster the examination of cross-cultural issues that increase mutual understanding among diverse social groups within the international community, with a particular emphasis on Southeast Asia.

This is the first issue of *Human Behavior, Development and Society (HBDS)* for 2025. For this issue, there are 12 articles, ten of them were written by researchers external to the university, and two were authored by an AIU researcher. There is one academic article, four qualitative research articles, and seven quantitative research articles. We are delighted to see reports and findings from various disciplines including business, education, psychology, and sociology. Most articles in this issue reflect studies conducted in ASEAN contexts including Cambodia, the Philippines, and Thailand, as well as articles from China and Sri Lanka. We hope that this issue of *HBDS* will contribute to the development of society and serve as a source of information for various academic fields and research projects.

There are several changes in the published article in this issue of *HBDS*. The length of the abstract increases from 200 words to 800–900 words. The length of the article increases from 8–12 pages to 10–15 pages. Further, the number of published articles per issue will be changed from 12 articles to 10–15 articles, starting from the next issue.

We would like to invite readers to publish your valuable papers with us. More information may be found on our website, <https://www.tci-thaijo.org/index.php/hbds>. We would also appreciate comments or suggestions from you to help us improve the journal. Finally, we appreciate the hard work of authors, reviewers, editorial board members, executive board members, and journal staff members who have contributed to making this achievement a reality.

Assistant Professor Dr Damrong Satayavaksakoon, Editor

Human Behavior, Development and Society

Asia-Pacific International University

Causal Relationship of Certified Hotels' Performance in Thailand

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Abstract

Aim/Purpose: This study examined the causal relationship between corporate entrepreneurship, business network, adaptability, and performance in Safety and Health Administration (SHA) Extra Plus-certified hotels in Thailand. The research aimed to understand how various entrepreneurial and operational factors have contributed to the resilience and recovery of the hospitality sector in the post-COVID-19 era.

Introduction/Background: The COVID-19 pandemic significantly disrupted the global tourism industry, including Thailand's hotel sector. The SHA Extra Plus certification, which entailed collaboration between hotels and health authorities to ensure safety protocols, has emerged as a critical factor for recovery. This study investigated the relationships between key business practices and the operational performance of SHA Extra Plus hotels.

Methodology: A quantitative research methodology was employed for this investigation, utilizing structural equation modeling (SEM) to analyze the relationships between corporate entrepreneurship, business network, adaptability, and performance in SHA Extra Plus-certified hotels. A sample of 339 hotels was selected through stratified random sampling across six geographic regions in Thailand. The survey respondents comprised hotel executives and managers, specifically those responsible for operational and strategic decisions within these establishments. A questionnaire was developed to collect data on key constructs: corporate entrepreneurship, business network, adaptability, and performance. The data were analyzed to assess relationships between these constructs, employing a 5-point Likert scale to evaluate the perceived importance and impact of each factor. Descriptive and inferential statistics, including correlation analysis and path analysis through SEM, were applied to test the hypotheses and examine the strength of relationships among the variables.

Findings: The study's findings indicated that corporate entrepreneurship plays a significant role in enhancing both business networks and adaptability, which subsequently positively impact hotel performance. Specifically, corporate entrepreneurship was found to have a direct, positive influence on business networks ($\beta = .826$) and adaptability ($\beta = .501$), demonstrating that proactive leadership and innovation in hotel management can foster internal and external networks while promoting organizational flexibility. Business networks were found to significantly influence adaptability ($\beta = .267$) and performance ($\beta = .279$), emphasizing the importance of robust, collaborative partnerships in navigating the challenges of the post-pandemic tourism market. Adaptability also emerged as a critical driver of performance ($\beta = .281$), highlighting that hotels capable of adjusting rapidly to changes in market demand, health protocols, and customer expectations are more likely to succeed in the current volatile environment. The overall model demonstrated a high level of fit, with key fit indices such as RMSEA (.021), CFI (.995), and GFI (.941) indicating that the proposed model accurately represented the relationships between these factors.

Contribution/Impact on Society: This research contributes to the body of knowledge on the recovery and resilience of the hospitality industry by providing empirical evidence on the significance of corporate entrepreneurship, business networks, and adaptability in improving hotel performance. The study highlights the interconnectedness of these factors and offers valuable insights for hotel operators, policymakers, and industry practitioners seeking to navigate the complexities of post-

pandemic recovery. In particular, the findings suggest that hotels which embrace innovation, foster strong networks, and maintain organizational flexibility are better positioned to overcome crises and thrive in the long term. This research also contributes to the theoretical understanding of how dynamic capabilities, such as adaptability and entrepreneurial orientation, influence performance in the hospitality industry, offering a framework for future research and practice.

Recommendations: Based on these findings, it was recommended that hotel managers focus on enhancing corporate entrepreneurship by fostering a culture of innovation, risk-taking, and proactive problem-solving. Strengthening business networks through collaboration with external partners, such as healthcare providers and local businesses, is crucial for building resilience and facilitating rapid adaptation to shifting market conditions. Additionally, hotel operators should prioritize adaptability by encouraging continuous learning, empowering employees, and adopting flexible operational strategies that can be quickly adjusted in response to shifts in demand or external disruptions. These strategies are critical not only for short-term recovery, but also for ensuring long-term sustainability and competitiveness in an increasingly dynamic and uncertain global tourism market.

Research Limitation: The study was limited by its focus on SHA Extra Plus-certified hotels in Thailand, which may not fully represent the broader hospitality industry, especially those outside of the certification framework. The sample size, while adequate, was limited to a single country, and future studies could include a wider range of hotel types and geographic locations to increase the generalizability of the findings. Additionally, the research primarily relied on self-reported data from hotel managers, which may introduce biases or limit the depth of insights into operational challenges faced by staff members or customers.

Future Research: Future research could expand the scope of this study by examining the role of technology in enhancing adaptability and business networks in the hotel sector, particularly in the context of digital transformation and online customer engagement. Comparative studies between small, medium, and large hotels could also provide further insights into how organizational size and resources influence entrepreneurial behavior, adaptability, and performance. Additionally, researchers could explore the impact of external factors, such as government policies and international tourism trends, on the recovery and performance of SHA Extra Plus-certified hotels.

Keywords: *Corporate entrepreneurship, business networks, adaptability, hotel performance*

Introduction

Tourism in Thailand has been significantly impacted by the COVID-19 pandemic, which began in December 2019. The pandemic has not only affected the health of people worldwide, but has also posed severe challenges to the global tourism industry. In Thailand, tourism revenue declined by as much as 82.60% compared to pre-pandemic levels (Thailand Development Research Institute, 2021). International tourists, who represent a major source of income for Thailand, were forced to cancel all travel plans, resulting in a sustained economic downturn for the tourism sector. This situation has driven many organizations to adapt rapidly to ensure survival, with numerous companies shifting their working models to incorporate greater flexibility and freedom by utilizing technology and online support systems. These adaptations have enabled employees to work from anywhere, thereby reducing the risk of transmission and enhancing productivity (Pattanawongwaran, 2023).

When international travel was limited, hotels and other accommodations saw their busy crowds disappear almost overnight. The Ministry of Tourism and Sports and the Ministry of Public Health collaborated with private businesses to develop the Amazing Thailand Safety & Health Administration (SHA) standard, a certification given to hotels to assure travelers that they were government-approved as safe, and many businesses accepted this standard. The SHA standard was later improved to SHA Extra Plus, which connected hotels with hospitals to help with COVID-19 tests and emergency medical care. These measures were crucial for reopening the country and regaining trust among both local and international tourists (Thangjai et al., 2022).

Joining the SHA Extra Plus program has become an important factor in helping hotels and accommodations in Thailand recover after the COVID-19 crisis. By promoting hotels with this certification to international markets, businesses have attracted back tourists who are concerned about hygiene. This not only helps in business recovery, but also creates a solid foundation for proactive marketing in the future. Certified SHA Extra Plus operators can use this standard as a marketing tool to stand out from competitors, as well as build credibility and trust with tourists (Kamolsiriwat & Povatong, 2021). This certification also encourages operators to be flexible and ready to handle rapidly changing situations, which is essential for long-term business survival (Agmapisarn & Chantapong, 2022). Therefore, the research team investigated the causal relationship between the performance of SHA Extra Plus-certified hotels in Thailand and the impact of factors in the proposed model, with the aim of providing insights into how hotels in Thailand can better manage future crises and promote the sustainability of their businesses. The findings can be used as a guide to the development performance of SHA Extra Plus certified hotels.

Literature Review

Corporate Entrepreneurship

The concept of corporate entrepreneurship encapsulates the distinctive attributes of individuals who manage organizations in a manner that fosters innovation, drives change, and maximizes the utilization of organizational resources. This encompasses critical areas such as financial management, investment strategies, human resource development, and the integration of technology into operational processes (Tajeddini & Trueman, 2016). To navigate the complexities of ever-evolving business landscapes, managers must demonstrate decision-making proficiency and creative problem-solving capabilities. These skills are essential for anticipating and addressing future challenges that may threaten organizational sustainability, as emphasized by Hill et al. (2021).

The unprecedented disruptions caused by the COVID-19 pandemic underscored the vulnerabilities of industries such as tourism, particularly in the hospitality sector, where hotels faced significant operational and financial challenges. In this context, the role of entrepreneurs and hotel managers became instrumental in ensuring the resilience and survival of both organizations and their workforces. As noted by Bai et al. (2016), fostering strong relationships between employees and entrepreneurial leaders cultivates a supportive network that facilitates collaborative innovation. Such networks not only drive organizational creativity, but also inspire personnel to contribute innovative ideas, thereby enhancing an organization's adaptive capacity.

Organizational entrepreneurship, therefore, plays a pivotal role in guiding entities toward success, even in highly uncertain and volatile environments. This underscores the importance of understanding their relationships with business networks, which serve as critical enablers of entrepreneurial initiatives. The conceptual framework and research hypotheses presented in this study are grounded in prior scholarly contributions, including those of Bai et al. (2016), which have collectively provided a robust theoretical foundation for exploring this dynamic interplay.

The following hypothesis is proposed to examine the relationship between corporate entrepreneurship and business networks:

H_1 : Corporate entrepreneurship has a direct positive impact on business networks.

In the context of hotel management during the COVID-19 pandemic, hotel operators were compelled to adopt strategic adaptations to align with rapidly changing circumstances, with a particular focus on encouraging customer re-engagement with their services. These adaptation strategies encompassed modifications to products and services to address the unpredictable and evolving demands of consumers. Organizations were required to navigate significant disruptions in business operations to mitigate uncertainty and minimize risks that could adversely affect consumer engagement. The challenges posed by the pandemic underscored the critical importance of adaptability in ensuring organizational resilience, as highlighted by Păvăluc (Melinte) et al. (2020). This dynamic highlights the relationship between organizational entrepreneurship and adaptability, which forms a central theme in this study.

The conceptual framework and research hypotheses were informed by prior scholarly contributions, including studies by Păvăluc (Melinte) et al. (2020) and Kamolsiriwat and Povatong (2021), which collectively provided a robust theoretical foundation for exploring this relationship. Based on this foundation, the following hypothesis was proposed:

H₂: Corporate entrepreneurship has a direct positive impact on adaptability.

Furthermore, the expansion of robust business networks has emerged as a key driver of innovation within the hotel industry. However, the extent to which organizations capitalize on these opportunities depends on the entrepreneurial mindset of leaders, particularly their willingness to assume financial risks and strategically allocate resources to explore new avenues for growth. This perspective is supported by the research of Tajeddini et al. (2020), which elucidated the relationship between organizational entrepreneurship and performance. The conceptual framework and research hypotheses were further substantiated by studies such as Abou-Moghli and Al-Abdallah (2018), along with Tajeddini et al. (2020), which collectively reinforced the significance of this relationship.

Based on the evidence presented, the following hypothesis was proposed:

H₃: Corporate entrepreneurship has a direct positive impact on organizational performance.

Business Networks

Business networks play a pivotal role in facilitating organizational operations and achieving strategic objectives. The presence of a well-established network enables businesses to achieve their goals more efficiently and effectively compared to operating in isolation (Sangperm, 2022). Furthermore, the exchange of information within these networks enhances members' negotiating power, leading to favorable outcomes and agreements that benefit the organization (Tajeddini et al., 2020). In contemporary business environments, organizations are increasingly expanding their networks to support decision-making processes, leveraging the collective expertise and resources of network participants to address diverse challenges. Business networks are thus instrumental in driving organizational progress and goal attainment.

In addition to fostering collaboration, business networks provide access to specialized expertise, enabling the development and implementation of strategies that enhance organizational performance (Sangperm, 2022). This perspective is supported by studies such as Rocca and Snehota (2014) and Tajeddini et al. (2020), which underscore the significance of networks in improving adaptability and operational efficiency. Based on this evidence, the following hypothesis was proposed:

H₄: Business networks have a direct positive impact on adaptability.

Research on business alliances across various organizational levels highlights their role in enhancing innovation capabilities. Business networks facilitate the exchange of resources, knowledge, and technology among partners, enabling organizations to develop innovative solutions and respond more effectively to market dynamics. This enhances competitive advantage and contributes to overall organizational performance. According to Bouncken et al. (2022), entrepreneurs' ability to cultivate and leverage networks is critical for fostering corporate innovation, meeting customer demands, and improving sales efficiency. The importance of networking capabilities is particularly pronounced in small organizations or startups, which often face intense competition and resource constraints.

The relationship between business networks and organizational performance was further substantiated by research from Saleh and Harvie (2024), Sangperm (2022), and Bouncken et al. (2022). These studies collectively emphasized the transformative potential of business networks in driving innovation and enhancing performance. Based on this foundation, this hypothesis was proposed:

H₅: Business networks have a direct positive impact on organizational performance.

Adaptability

Organizational adaptability encompasses both short-term and long-term adjustments, requiring a dynamic approach to managing internal operations in response to evolving circumstances. Hotel entrepreneurs must demonstrate flexibility in adapting to changing conditions while overseeing organizational processes. This adaptability is especially critical during periods of crisis, where the

ability to anticipate and mitigate future risks is essential for ensuring business survival and facilitating a return to stability (Jantapong & Ekmapaisarn, 2021).

Managers who possess the capacity to swiftly respond to emerging opportunities, risks, and internal changes are better positioned to secure a competitive advantage for their organizations. Such responsiveness not only enhances operational resilience, but also enables more effective alignment with consumer demands, ultimately contributing to improved organizational outcomes. The relationship between adaptability and performance is well-documented in the literature, as evidenced by studies conducted by Fathi et al. (2021) and Paepuang and Powathong (2021). These studies underscore the significance of adaptability as a driver of organizational success.

Based on this theoretical foundation, the following hypothesis was proposed:

H_6 : Adaptability has a direct positive impact on organizational performance.

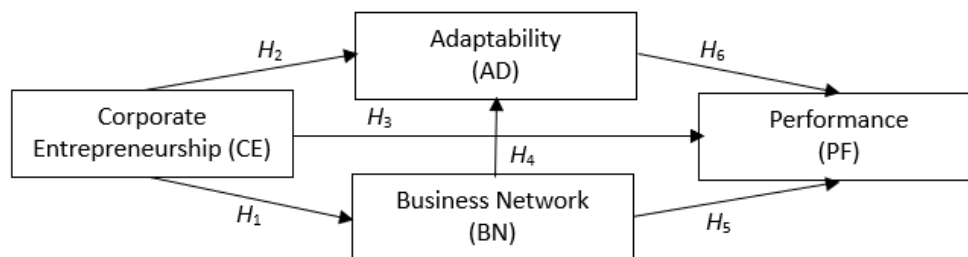
Performance

Organizational performance is a multifaceted construct that encompasses the reduction of redundancies in operational processes, thereby enhancing work efficiency through strategic adaptation in the aftermath of a crisis (Comfort et al., 2001). Traditionally, many organizations have prioritized financial metrics as the primary indicators of operational effectiveness. However, Kaplan and Norton (1996) argue that an over-reliance on financial measures is insufficient for achieving long-term organizational goals. Instead, they advocate for a balanced approach that integrates financial strategies with non-financial perspectives, such as internal processes, learning, and growth, to provide a more comprehensive evaluation of progress over time. This shift is particularly relevant in light of the evolving nature of business operations, which necessitates diverse methodologies to ensure sustained success.

In this context, entrepreneurs with an innovative mindset play a pivotal role in driving organizational performance. Their ability to identify and capitalize on new opportunities, coupled with active engagement in strategic initiatives, fosters consistent growth, and enhances the organization's competitive position (Navin et al., 2025). By balancing financial and non-financial metrics, organizations can develop a more holistic understanding of their performance, enabling them to adapt effectively to dynamic market conditions and achieve sustainable success.

The conceptual framework presented in this study, as illustrated in Figure 1, provides a structured approach to examining the interrelationships among key variables influencing organizational performance.

Figure 1 Research Conceptual Framework



Methodology

Population and Sample

The target population for this study was comprised of hotels in Thailand that were awarded the SHA Extra Plus certification in 2023, totaling 2,862 establishments. This information was obtained from the online database of SHA Extra Plus-certified hotels, as provided by the Tourism Authority of Thailand (accessed on April 8, 2023). To determine the appropriate sample size, the researchers utilized the formula proposed by Krejcie and Morgan (1970), which yielded a sample size of 339 hotels.

To ensure representativeness, a proportional stratified random sampling method was employed. The sample was distributed across the six geographic regions of Thailand in proportion to the number of SHA Extra Plus-certified hotels in each region. Specifically, the distribution was as follows: Northern region (31 hotels), Central region (77 hotels), Northeastern region (12 hotels), Eastern region (45 hotels), Western region (13 hotels), and Southern region (161 hotels).

In addition to the stratified sampling approach, purposive sampling was used to select participants who hold managerial or operational roles within the selected hotels. These individuals are directly responsible for managing and overseeing the operations of SHA Extra Plus-certified establishments in Thailand, ensuring their insights are relevant to the study's objectives.

Instruments

A structured questionnaire was employed as the primary data collection instrument in this quantitative study. The questionnaire was developed based on established concepts, theories, and relevant literature pertinent to the study's objectives. It was divided into three distinct sections.

The first section gathered demographic information about the respondents, such as gender, age, educational attainment, years of work experience, and current job position. The second and third sections focused on the main variables under investigation, comprising a total of 42 items. These variables include corporate entrepreneurship (12 items), derived from the conceptual frameworks of Tajeddini et al. (2020); business networks (10 items), adapted from the work of Sangperm (2022); adaptive capabilities (9 items), informed by the research of Fathi et al. (2021); and performance (11 items), developed based on the theoretical foundation provided by Comfort et al. (2001) and Kaplan and Norton (1996).

A 5-point Likert scale was utilized to measure respondents' perceptions of the importance of each item, ranging from "very low importance" to "very high importance." To ensure the validity of the instrument, it was evaluated by three subject-matter experts who assessed item-objective congruence (IOC). The resulting IOC values ranged from .60 to 1.00, meeting the standards proposed by Louangrath and Sutanapong (2018).

Reliability testing was conducted using a pilot sample of 30 respondents not included in the main study. Cronbach's alpha coefficients were calculated for each scale, yielding values above the threshold of .70. These results indicated that the questionnaire demonstrated high internal consistency and reliability, aligning with the criteria established by Hair et al. (2006). Thus, the instrument was deemed robust and suitable for collecting accurate and reliable data for this study.

Data Collection and Analysis

The research team employed a systematic approach to data collection by directly contacting hotel managers via telephone to solicit their participation in completing the survey. Following their consent, the survey link was distributed to the selected participants, and the data collection process spanned approximately one month, concluding in July 2023. A total of 339 completed and valid questionnaires were received, meeting the predetermined sample size requirements. The responses were subsequently coded to facilitate further statistical analysis.

Descriptive statistics were utilized to examine the fundamental characteristics of the sample group. Frequency distributions and percentages were calculated to provide a comprehensive overview of the demographic profiles of the respondents, including variables such as gender, age, educational attainment, work experience, and job position. Additionally, basic statistical measures, including the mean and standard deviation, were computed for each variable to summarize the central tendencies and variability of the data. Correlation coefficients were also analyzed to explore the relationships between the variables, and to describe the underlying data characteristics.

To address the research objectives and test the hypotheses, inferential statistics were employed using Structural Equation Modeling (SEM). This advanced statistical technique was applied to analyze both direct and indirect relationships among the key constructs: entrepreneurial orientation, business networks, adaptive capabilities, and the performance of SHA Extra Plus-certified hotels in Thailand.

SEM provided a robust framework for evaluating the hypothesized relationships and assessing the overall fit of the proposed model.

The model fit was rigorously evaluated using multiple statistical criteria, as recommended by Hair et al. (2010). These criteria included: (a) the Chi-square value relative to degrees of freedom (χ^2/df), which should not exceed 2.00; (b) the Goodness of Fit Index (GFI) and Adjusted Goodness of Fit Index (AGFI), both of which should exceed 0.95; (c) the Root Mean Square Residual (RMR), which should be less than .05; and (d) the Root Mean Square Error of Approximation (RMSEA), which should also be less than .05. These metrics ensured that the model demonstrated an acceptable level of fit and validity, thereby supporting the reliability of the findings.

Results

The survey revealed that 286 were managers and 53 were owners. Most respondents were male (56.30%), aged 30–40 (51.90%), and held a bachelor's degree (76.70%). Over half (55.80%) had 5 to 10 years of work experience. Geographically, 47.80% of SHA Extra Plus-certified hotels were in the southern region, with 22.70% in the central region. The majority operated as limited companies (77.30%), had been in business for 5 to 10 years (68.40%), and employed 50 to 100 staff (61.70%). The primary customer base was Thai nationals (61.40%).

The analysis of survey results concerning entrepreneurial orientation, business networks, adaptive capability, and hotel performance in Thailand indicated that respondents attributed the highest level of importance to adaptive capability, with a mean score of 4.80. This was closely followed by corporate entrepreneurship, which received a mean score of 4.77. Hotel performance and business network were rated slightly lower, with mean scores of 4.61 and 4.60, respectively. The relationships between these variables are further detailed in Table 1, which presents the correlation coefficients.

Table 1 *Correlation Matrix*

Variable	CE	BN	AD	PF
Corporate Entrepreneurship (CE)				
Business Network (BN)	.441**			
Adaptability (AD)	.580**	.488**		
Performance (PF)	.443**	.531**	.468**	
Mean (\bar{x})	4.77	4.60	4.80	4.61
Standard deviation (SD)	0.383	0.490	0.349	0.403
Conclusion	Highest	Highest	Highest	Highest

Note. *r*, ***p* < .01.

The results of the causal relationship path analysis demonstrated that the proposed model exhibited a strong alignment with the empirical data, as supported by the statistical values and model fit indices that satisfied all the predefined criteria. Specifically, the Chi-square value was 289.56 with 252 degrees of freedom (*df*), yielding a *p*-value of .052. The ratio of Chi-square to degrees of freedom (χ^2/df) was 1.149, which was below the threshold of 2.00, consistent with the standard recommended by Byrne (2013). Additionally, the Goodness of Fit Index (GFI) was .941, exceeding the recommended threshold of .90, while the Comparative Fit Index (CFI) reached .995, also surpassing the .90 benchmark. Furthermore, the Root Mean Square Error of Approximation (RMSEA) was .021, falling well below the .08 criterion suggested by Hair et al. (2006). These findings confirm that the model demonstrated an excellent fit to the data, with all fit indices meeting or exceeding the required thresholds. Further details regarding the model are illustrated in Figure 2.

Figure 2 Results of Final Model

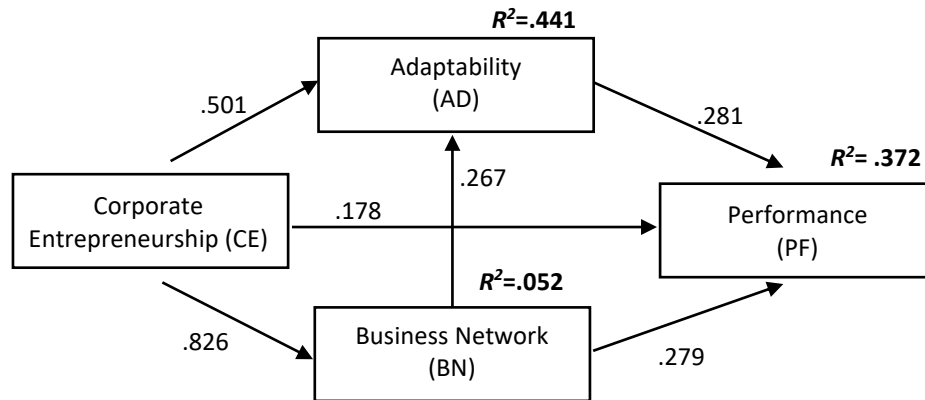


Table 2 Effects for the Model Performance of SHA Extra Plus–Certified Hotels in Thailand

Effect Variable	R^2	Effect	Cause Variable		
			CE	BN	AD
Business Network (BN)	.052	DE	.826**	-	-
		IE	-	-	-
		TE	.826**	-	-
Adaptability (AD)	.441	DE	.501**	.267**	-
		IE	.221**	-	-
		TE	.722**	.267**	-
Performance (PF)	.372	DE	.178**	.279**	.281**
		IE	.434**	.075**	-
		TE	.611**	.354**	.281**

Notes. DE = Direct effect, IE = Indirect effect, TE = Total effect (β , * $p < .05$, ** $p < .01$).

Table 2 presents the results of the path coefficient analysis examining the causal relationships among Corporate Entrepreneurship, Business Network, Adaptive Capability, and Hotel Performance in Thailand, specifically for hotels certified with SHA Extra Plus. The findings indicated that Corporate Entrepreneurship exerted a significant positive direct influence on both Business Networks (DE = .826) and Adaptive Capability (DE = .501). Additionally, Adaptive Capability demonstrated a direct positive effect on Hotel Performance (DE = .281), while Business Network also exhibited a direct positive impact on Hotel Performance (DE = .279). Furthermore, Business Networks significantly influenced Adaptive Capability (DE = .267), and Corporate Entrepreneurship directly and positively affected Hotel Performance (DE = .178).

The analysis also revealed indirect effects: Corporate Entrepreneurship had an indirect influence on Hotel Performance (IE = .434) and Adaptive Capability (IE = .221), while Business Network indirectly affected Hotel Performance (IE = .075). All reported path coefficients were statistically significant, providing robust support for the proposed hypotheses. Further details regarding these relationships are provided in Table 3.

Table 3 summarizes the results of the hypothesis testing. Hypothesis 1 posited that Corporate Entrepreneurship (CE) exerted a positive direct impact on Business Networks (BN), with a path coefficient of .826 (t -stat = 8.102, $p < .01$), indicating strong statistical support. Hypothesis 2 suggested that Corporate Entrepreneurship (CE) positively and directly impacted Adaptive Capability (AD), supported by a path coefficient of .501 (t -stat = 8.900, $p < .01$). Hypothesis 3 proposed that Corporate Entrepreneurship (CE) had a positive direct impact on Performance (PF), with a path coefficient of .178 (t -stat = 2.779, $p = .01$), confirming its significance.

Table 3 Hypothesis Testing Results

Hypotheses	Coefficient (β)	<i>t</i> -stat	SE	Results
<i>H</i> ₁ : CE --> BN	.826	8.102**	0.066	Supported
<i>H</i> ₂ : CE --> AD	.501	8.900**	0.054	Supported
<i>H</i> ₃ : CE --> PF	.178	2.779**	0.061	Supported
<i>H</i> ₄ : BN --> AD	.267	5.051**	0.042	Supported
<i>H</i> ₅ : BN --> PF	.279	4.559**	0.048	Supported
<i>H</i> ₆ : AD --> PF	.281	4.042**	0.069	Supported

Note. (β , ** $p < .01$)

Hypothesis 4 asserted that Business Network (BN) positively impacted Adaptive Capability (AD), as evidenced by a path coefficient of .267 (t -stat = 5.051, $p < .01$). Hypothesis 5 stated that Business Network (BN) had a positive direct impact on Performance (PF), with a path coefficient of .279 (t -stat = 4.559, $p < .01$). Finally, Hypothesis 6 postulated that Adaptive Capability (AD) positively affected Performance (PF), supported by a path coefficient of .281 (t -stat = 4.042, $p < .01$).

These findings underscore the significant roles of Corporate Entrepreneurship (CE), Business Network (BN), and Adaptive Capability (AD) in influencing the Performance (PF) of SHA Extra Plus-certified hotels in Thailand. Collectively, the results provide robust empirical support for all the proposed hypotheses.

Discussion

The analysis of the overall level of Corporate Entrepreneurship revealed that it has reached its highest level. The findings suggested that hotel managers with 5–10 years of experience play a pivotal role in offering unique managerial perspectives, which contribute to the development of operations toward achieving the highest standards. This was particularly significant in the context of the COVID-19 pandemic, where service delivery required innovative and adaptive approaches. Notably, most hotels included in the study were in the southern region of Thailand, which hosts the largest concentration of hotels in the country and serves both domestic and international tourists.

These results aligned with the conceptual framework proposed by Hill et al. (2021), who emphasized that a critical driver of long-term organizational growth is the proactive engagement of entrepreneurs or managers in strategic planning. Such planning enables organizations to adapt to global changes, anticipate future challenges, and integrate these insights into their development strategies. The adoption of intelligent risk-taking further empowers entrepreneurs to devise innovative solutions, thereby steering their organizations toward success. Additionally, fostering employees' creative thinking and collective problem-solving capabilities emerged as a key factor in promoting sustainable organizational growth.

In summary, combining managerial experience and proactive strategic planning equips entrepreneurs to effectively address challenges and secure a competitive edge in the market, consistent with the perspectives outlined by Morris et al. (2011). These elements underscore the importance of adaptive leadership and innovation in driving organizational resilience and success.

The analysis of business networks revealed that they had reached the highest level. The characteristics of hotel businesses highlight the significance of extensive network operations, which aligned with the conceptual framework proposed by Tajeddini et al. (2020). They emphasized that building relationships between business organizations fosters opportunities for diverse operational activities, facilitating problem-solving and the pursuit of mutual benefits through collaborative efforts (Pridakorn & Laullittirat, 2018). These findings were further supported by the research of Rocca and Snehota (2014), which demonstrated that strong business networks enable organizations to generate profits and sustain positive relationships, even in highly competitive environments.

Establishing and maintaining robust business partnerships enhances operational efficiency and increases the value added by business networks. Moreover, the development of such networks plays a critical role in enabling the sharing of resources, information, and technologies while supporting the

identification of new market opportunities. Reliable business partners are instrumental in helping hotel businesses navigate challenges and adapt to dynamic competitive conditions. This collaborative approach enhances operational flexibility and promotes sustainable growth (Tajeddini et al., 2020). These insights underscore the strategic importance of business networks in driving resilience, innovation, and long-term success in the hospitality industry.

Analysis of the overall level of adaptability revealed that it had reached its highest level, reflecting a strong emphasis on fostering creativity and systematically reviewing strategies and processes. A key factor contributing to this outcome was encouraging employees to embrace innovative ideas, which enhances an organization's ability to adapt swiftly and effectively to dynamic environments. This finding was aligned with the conceptual framework proposed by Adam et al. (2018), who emphasized the importance of organizational flexibility in management practices. By empowering employees with greater responsibility and prioritizing continuous learning and development, organizations can equip their workforces to respond effectively to external changes. Such support enhances organizational resilience and enables efficient responses to emerging challenges.

Similarly, the work of Jansuri (2021) highlighted the critical need for hotel businesses to adapt their management and personnel strategies during the COVID-19 pandemic to address unprecedented challenges. These adaptations encompassed the development of innovative processes and work methods designed to meet evolving customer demands more efficiently. The ongoing commitment to refining strategies and operational processes has proven instrumental in enabling hotel businesses to maintain competitiveness and enhance their responsiveness to market fluctuations.

In conclusion, cultivating adaptability is vital to sustainable business operations, particularly in rapidly changing environments. By fostering a culture of innovation, continuous improvement, and strategic flexibility, organizations can position themselves to navigate uncertainties and achieve long-term success.

An analysis of performance indicated that it has reached its highest level, demonstrating the high efficacy of hotel businesses in addressing customer complaints and fostering strong relationships with customers and stakeholders. These findings were aligned with the theoretical frameworks proposed by Comfort et al. (2001) and Ahmed et al. (2020), who argued that organizational performance can be evaluated based on the capacity to satisfy customers and deliver value—whether through products or services—to internal and external stakeholders. Customer satisfaction is a critical indicator of organizational performance in meeting customer needs and expectations.

Efficient complaint management and maintaining positive relationships contribute to customer satisfaction and foster trust and loyalty, which are essential for building sustainable long-term relationships with customers and stakeholders. By prioritizing service quality improvements and resolving issues promptly and effectively, hotels can enhance customer satisfaction, thereby gaining a competitive edge in markets. Furthermore, this approach aids in cultivating a positive organizational image among customers and business partners, reinforcing an organization's reputation.

Ultimately, strategic focus on customer service management and continuous improvement emerges as a pivotal factor in achieving and sustaining high performance in the hospitality sector. By addressing customer needs proactively and maintaining robust stakeholder relationships, hotels can ensure their long-term success and resilience in an increasingly competitive environment.

This study's findings, which examined the impact of corporate entrepreneurship, business networks, and adaptability on the performance of SHA Extra Plus-certified hotels in Thailand, are grounded in Barney's (1991) Resource-Based View theory and Teece's (2023) Dynamic Capabilities theory, as well as related research. The results demonstrate consistency with the theoretical frameworks and the proposed research hypotheses. In the context of this study, the SHA Extra Plus certification represents a strategic response to growing demand from tourists in the post-pandemic era. To meet these demands, hotels must rapidly adapt their operations to maintain efficiency and consistently deliver customer satisfaction.

Hotel performance, particularly within the SHA Extra Plus framework, is influenced by multiple factors, including organizational entrepreneurship, business networks, and adaptability. To explore

the causal relationships among these variables, the researchers employed Path Analysis to test both direct and indirect effects on hotel performance. The findings revealed that organizational entrepreneurship emerged as the most significant factor influencing hotel performance, followed by adaptability. Business networks, while having the least relative influence, still played a critical role in enhancing overall performance.

These results underscored the importance of integrating organizational entrepreneurship, adaptability, and business networks to improve the performance of SHA Extra Plus-certified hotels in Thailand. Each factor contributed uniquely to the operational resilience and competitive advantage of hotels, enabling them to respond effectively to dynamic market conditions. A detailed discussion of these findings and their implications for theory and practice is provided in the subsequent sections.

Corporate entrepreneurship demonstrated a significant positive direct influence on business networks, as hypothesized in Hypothesis 1. This relationship can be attributed to the proactive strategies adopted by hotel managers with over five years of experience in hotel management during the COVID-19 pandemic. These managers identified opportunities to innovate and adapt their operational strategies to align with evolving environmental demands, thereby instilling confidence among domestic and international customers to continue utilizing their services. Additionally, the introduction of the SHA Extra Plus standard by the government played a pivotal role in reinforcing customer trust in hotels that adhered to these enhanced safety and quality benchmarks.

This finding resonates with the perspective articulated by Abu-Rumman et al. (2021), who emphasized that organizational entrepreneurs must identify opportunities to generate sustainable profits by leveraging resources efficiently. Furthermore, for organizations to achieve long-term growth, fostering robust internal relationships is essential to establishing a solid foundation for developing business networks that facilitate effective collaboration with external stakeholders. This notion is also supported by Bai et al. (2016), whose research highlighted that cultivating strong relationships between personnel and the organization strengthens internal cohesion, and enhances external network performance by creating a ripple effect from internal to external domains.

Similarly, Tajeddini et al. (2020) found that organizations benefit more from establishing strong business networks built on shared learning and collaboration than from operating in isolation. Therefore, corporate entrepreneurship must prioritize fostering cooperation with internal networks (e.g., employees) and external networks (e.g., partners and stakeholders) to promote participation, teamwork, and synergy. By doing so, organizations can enhance their competitive advantage and ensure sustained success in an increasingly dynamic and interconnected business environment.

Corporate entrepreneurship demonstrated a significant positive direct influence on adaptability, as hypothesized in Hypothesis 2. This relationship can be attributed to the central role of entrepreneurs or managers in guiding hotel businesses to navigate crises and adapt to changing circumstances, thereby reducing uncertainty and mitigating risks that arise from fluctuations in consumer demand. The experiences gained during the COVID-19 pandemic further underscored this dynamic, and were aligned with the findings of Kamolsirivat and Pawatong (2021), who observed that entrepreneurs with substantial business experience were more adept at creatively adapting their operations to achieve progress and success through adjustments during periods of disruption. Similarly, Păvăluc (Melinte) et al (2020) emphasized the critical importance of adaptability in the tourism sector, given its susceptibility to external environmental changes. Their research highlighted the need for businesses to develop flexible strategies to respond effectively to evolving conditions.

Corporate entrepreneurship also exhibited a positive direct influence on performance, consistent with Hypothesis 3. This relationship is explained by the ability of entrepreneurs or hotel managers to maintain clearly defined goals and leverage their entrepreneurial mindset to lead organizations in responding effectively to environmental changes and internal challenges. Tajeddini et al. (2020) noted that uncertain and rapidly changing environments increase organizational risks. However, when entrepreneurs adopt robust operational strategies, they can positively influence business performance. Furthermore, entrepreneurs characterized by strong corporate entrepreneurship are more inclined to embrace risk-taking and foster innovation within their organizations. This perspective

is supported by Tajeddini et al. (2020), whose research established a significant correlation between corporate entrepreneurship and organizational performance. Entrepreneurs with a strong orientation toward corporate entrepreneurship were more likely to generate innovative ideas, develop new products, services, processes, and business models, engage in proactive management practices, and effectively manage risks to sustain market positioning and enhance organizational performance. Collectively, these findings underscored the pivotal role of corporate entrepreneurship in driving adaptability and performance in dynamic business environments.

The positive direct influence of business networks on adaptability, as hypothesized in Hypothesis 4, can be explained by the hotel industry's need to adjust its services in response to dynamic environments. The operational focus on building and maintaining networks, facilitates knowledge exchange when changes occur, enabling organizations to adapt more effectively. This finding is aligned with the research of Tajeddini et al. (2020), who emphasized that collaboration with business networks or partners strengthens organizational resilience. The ability to adapt to network systems is critical, requiring leaders to evaluate whether their organization's projects or operations are aligned with collaborative network structures. In challenging situations, readiness to respond swiftly to changes reflects leadership adaptability, which is essential for guiding organizations to maintain operational effectiveness.

Similarly, the positive direct influence of business networks on performance, as outlined in Hypothesis 5, was supported by the hotel industry's emphasis on creating collaborative networks that foster mutual growth and development. Carneiro et al. (2013) highlighted that business networks enhance organizational performance and improve management control through shared resources and expertise within similar networks. Sangperm (2022) further underscored the importance of business networks, arguing that they play a pivotal role in driving organizations toward achieving their strategic goals. When organizations leverage expert networks to develop and implement strategies for successful operations, they significantly enhance their potential for success. Sangperm (2022) also identified business networks as a key determinant of business success, emphasizing the need for leaders to recognize the value of network-building in facilitating information sharing and mutual benefit. Collectively, these insights highlighted the critical role of business networks in fostering both adaptability and performance within the hotel industry.

Adaptability exerted a significant positive direct influence on performance, as hypothesized in Hypothesis 6. This relationship can be attributed to challenges posed by the COVID-19 pandemic, which prompted hotel businesses to leverage their unique characteristics and signature offerings to attract customers, demonstrating their adaptability for survival. Research by Fathi et al. (2021) highlighted that organizations facing adversity must adjust their operational models to navigate emerging challenges and sustain progress. Furthermore, financial support during such periods enables businesses to identify and capitalize on growth opportunities more effectively. Similarly, Jansuri (2021) found that adaptation strategies employed by hotel operators significantly influenced tourist occupancy rates and long-term recovery. A key factor in this process was managing accommodations that satisfy guests while ensuring sufficient revenue generation for sustained operations. These findings hold relevance for hotel operators in Chiang Mai and other stakeholders within the hospitality industry.

Conclusion

The results of this study highlight the crucial roles of organizational entrepreneurship, business networks, and adaptability in shaping the performance of SHA Extra Plus-certified hotels in Thailand. The positive relationships suggest that proactive innovation strategies, collaborative networking, and adaptability enable hotels to operate effectively amidst changing circumstances, ultimately enhancing overall performance. Hotels that prioritize organizational entrepreneurship and cultivate robust business networks are better positioned to develop the flexibility needed to adapt to dynamic market conditions while improving services to meet evolving customer demands.

These findings carry broader implications for Thailand's service industries. The growing number of SHA Extra Plus-certified hotels reflects a strong commitment to elevating service standards to global levels through organizational entrepreneurship, effective networks, and adherence to higher safety and health protocols. By implementing innovative practices, these hotels not only enhance Thailand's attractiveness as a safe and desirable tourist destination, but also demonstrate the strategic adaptability required to strengthen the readiness of the country's hotel industry to meet diverse service demands. These insights highlight the importance of integrating entrepreneurial strategies, network collaboration, and adaptive capabilities to achieve sustainable growth and competitive advantage in the hospitality sector.

Recommendations

Recommendations for Applying Research Findings

The findings of this study offer valuable insights that can be applied to both academic and practical contexts. These recommendations aim to guide future research, support entrepreneurial decision-making, and foster further exploration in the field.

Academic Recommendations

This research provides a foundation for future studies in similar contexts, particularly in understanding business adaptation during crises and developing organizational adaptability. Scholars are encouraged to build upon these findings to explore additional dimensions of resilience and innovation within the hospitality sector.

Recommendations for Entrepreneurs and Hotel Managers

1. *Enhance Corporate Entrepreneurship:* Develop an organizational culture encouraging innovation, risk-taking, and proactive problem-solving. Managers should actively support creativity among employees and incentivize innovative initiatives that align with market changes and consumer expectations.

2. *Strengthen Business Networks:* Build and nurture strong, collaborative partnerships, especially with healthcare providers, local businesses, and other relevant stakeholders. Engage actively in networks to leverage collective knowledge, resources, and strategic information, enhancing the hotel's ability to respond to external disruptions effectively.

3. *Prioritize Adaptability:* Implement policies and practices that encourage continuous learning and flexibility within organizations. Training programs should equip employees with skills necessary for rapid adjustment to market conditions, including crisis management, customer engagement, and digital proficiency.

4. *Leverage Certification (SHA Extra Plus):* Actively promote SHA Extra Plus certification in marketing strategies as a symbol of trust, safety, and quality. Use this certification to differentiate from competitors, thus attracting customers who prioritize health and safety standards post-pandemic.

5. *Holistic Performance Metrics:* Incorporate financial and non-financial metrics, such as customer satisfaction and internal process efficiency, in evaluating performance. Use these balanced scorecards to make informed decisions that align short-term recovery efforts with long-term strategic goals.

Recommendations for Future Research

1. *Role of Technology and Innovation:* Future research should investigate the impact of technology and innovation on the adaptability of hotel businesses. Specifically, studies could examine how digital technologies facilitate connections with new business networks, and create diverse opportunities for growth and expansion.

2. *Comparative Analysis by Business Size:* A comparative study between small and large hotels is recommended to analyze how organizational size influences entrepreneurship, business networks,

and adaptability. Such research could provide deeper insights into the unique challenges and opportunities faced by hotels of varying scales, enabling the development of tailored strategies for various industry segments.

By addressing these areas, future research can contribute to a more comprehensive understanding of the factors driving performance and sustainability in the hospitality sector.

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A Gamified Instruction in Teaching Physical Education: A Meta-Synthesis

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Abstract

Aim/Purpose: This study aimed to synthesize findings from 14 qualitative and mixed-methods studies to provide a comprehensive understanding of gamification's impact on physical education (PE). By identifying key themes, benefits, and challenges, this research offers insights into optimizing gamification strategies for effective PE instruction.

Introduction/Background: Gamified instruction has emerged as a transformative educational tool, leveraging game mechanics like rewards, challenges, leaderboards, and feedback loops to enhance engagement and motivation. In PE, gamification offers unique opportunities to address traditional challenges by creating dynamic and interactive learning environments. The integration of gamification in PE is aligned with contemporary pedagogical approaches emphasizing student-centered learning and active participation. Research has shown that gamified strategies can significantly enhance students' enthusiasm, encourage teamwork, and improve physical performance. Despite these advantages, challenges such as increased teacher workload and the need for well-planned implementation strategies remain. This study has synthesized existing research to provide a holistic understanding of gamification's effects in PE, helping educators and policymakers to navigate its complexities while maximizing its benefits.

Methodology: This study employed a meta-synthesis approach to integrate findings from 14 prior qualitative and mixed-methods studies on gamification in physical education (PE). A PRISMA diagram was used to systematically summarize the selection process, ensuring transparency and rigor in the inclusion of studies. To assess the quality and reliability of the selected studies, the Critical Appraisal Skills Programme (CASP) was applied. Content analysis was then conducted to identify recurring themes, allowing for a structured synthesis of the data. Through this method, the study provides a comprehensive overview of gamification's impact on PE, highlighting both its benefits and challenges. Using Publish or Perish software, Google Scholar, Semantic Scholar, and Crossref, some academic publications connected to gamification in teaching and learning physical education were found in an electronic database for scholarly research. All research published from 2020 to 2024 that was pertinent to using gamification in teaching and learning physical education was downloaded and examined. Further, the descriptors or keywords entered into the software were qualitative, basic education, gamification, and physical education.

Findings: The five primary themes that emerged from the content analysis were that gamification:

1. *Increases Student Enthusiasm and Engagement.* Gamification significantly boosted student motivation by incorporating elements such as competition, rewards, and game-like scenarios, making PE classes more engaging and dynamic.
2. *Encourages Teamwork and Meaningful Learning.* Studies highlighted that gamified PE promoted collaborative learning, enhanced peer interaction, and helped students develop essential social and teamwork skills.
3. *Improves Physical Performance.* Gamification positively influenced students' physical activity levels, leading to measurable improvements in endurance, coordination, and overall fitness.

4. *Adds to Instructors' Workload and Preparation.* Implementing gamified strategies requires resource management, extensive planning, and continuous monitoring, increasing demands on teachers.
5. *Implementing Challenges.* Educators faced difficulties in balancing intrinsic and extrinsic motivation, ensuring inclusivity, and maintaining engagement without overemphasizing competition.
6. *Transforms Teaching and Learning Physical Education through Gamification While Navigating Its Complexities* emerged as a meta-theme. Gamification significantly boosted student motivation and participation by incorporating rewards, challenges, and teamwork, aligning with modern pedagogical approaches. However, challenges such as increased teacher preparation and resource demands highlighted the need for strategic planning.

Contribution/Impact on Society: This study contributes to the existing body of knowledge on gamification by synthesizing qualitative and mixed-methods research findings to offer a broader perspective on its application in PE. The results emphasized that gamification is not merely a novel instructional approach, but a transformative strategy that can enhance student engagement and learning outcomes. Additionally, by fostering increased participation in physical activities, gamification contributes to broader public health goals by promoting lifelong physical activity habits among students. These insights are valuable for educators, curriculum designers, and policymakers aiming to optimize PE instruction through innovative and research-based strategies.

Recommendations: These include aligning gamified strategies with curricular goals, training teachers, and balancing extrinsic and intrinsic motivators. In this manner, gamification can create dynamic and inclusive PE environments, fostering meaningful learning and lifelong physical activity. Future research should explore its long-term impacts and how to optimize implementation to maximize benefits.

Research Limitation: Despite its comprehensive approach, this study had certain limitations. First, it relied on previously conducted qualitative and mixed-methods studies, which may have methodological variations affecting the synthesis. Additionally, the scope of the study was constrained by the number of available high-quality research articles on gamification in PE. The findings predominantly focused on short-term impacts, leaving the long-term effects of gamification in PE largely unexplored. Finally, factors such as variations in educational settings, teacher expertise, and student demographics may influence the generalizability of the results.

Future Research: Future research should focus on exploring the long-term impacts of gamification in physical education, particularly its effects on students' sustained engagement and physical activity habits beyond the classroom. Comparative studies that evaluate gamified instruction against traditional methods could provide stronger evidence of its effectiveness. Additionally, research on the role of emerging technologies, such as virtual reality and mobile applications, in enhancing gamified experiences would be valuable. Investigating the challenges teachers face in implementing gamification, including resource availability and professional development needs, can help refine best practices. Finally, studies should explore how gamification can be adapted for diverse student populations to ensure inclusivity and equitable learning opportunities.

Keywords: *Gamification, gamified instruction, meta-synthesis, physical education, review*

Introduction and Rationale

Physical Education (PE) has often been undervalued compared to other academic subjects, yet research highlights its critical role in fostering a well-rounded education (Dollaway et al., 2024). Physical Education contributes significantly to students' physical, mental, and social development by promoting health, motor skills, and lifelong fitness habits. In an age marked by sedentary lifestyles and digital distractions, physical activity within PE classes encourages active participation and healthy living. However, traditional PE programs face persistent challenges, such as low student engagement, varying levels of fitness, and lack of enthusiasm, emphasizing the need for innovative strategies to make PE more inclusive and effective (Liuşnea, 2018).

Gamified instruction is an educational approach that integrates game mechanics such as rewards, challenges, leaderboards, and feedback loops, into the learning process to enhance engagement and motivation. Unlike traditional gameplay, gamification applies these elements to instructional activities to create an interactive and goal-oriented learning environment. In physical education (PE), this approach helps to address common challenges by fostering intrinsic motivation, perseverance, teamwork, and enjoyment, which are crucial for successful PE programs (Pérez-Muñoz et al., 2022). For example, teachers can use point-based systems where students earn badges for completing fitness challenges, or leaderboards to encourage friendly competition in endurance exercises. Studies by Melero-Cañas et al. (2021) and Angco (2023) have demonstrated how gamification enhances student participation and aids experiential learning by integrating structured game elements into instruction. By incorporating features such as competition, immediate feedback, and progressive challenges, gamification transforms physical activities into enjoyable experiences that encourage consistent participation, skill development, and adoption of active, healthy lifestyles (Hellín et al., 2023).

Gamification is aligned with contemporary pedagogical trends by prioritizing student-centered and interactive learning, addressing educational needs in the digital age (Arufe-Giráldez et al., 2022). It creates an engaging environment for students to actively develop motor and cognitive skills essential for lifelong physical activity. Findings by El-Tanahi et al. (2024) have validated gamification's efficacy in PE classes, revealing increased motivation, engagement, and skill development among students. However, research on gamification in PE has remained fragmented, often focusing on isolated case studies or specific game elements without a comprehensive understanding of its overall impact.

This gap underscores the need for a meta-synthesis study to consolidate findings, identify patterns, and develop a structured framework for effectively integrating gamification in PE. By synthesizing qualitative research from various journals, this study aimed to generate actionable insights that can inform pedagogical strategies, curriculum design, and instructional methods. Specifically, this synthesis provides evidence-based guidelines for implementing gamified instruction in general PE classrooms, ensuring that educators can leverage game mechanics to enhance student engagement, motivation, and skill development. By addressing gaps in traditional PE programs, gamified instruction is aligned with broader educational trends emphasizing 21st-century skills such as collaboration, creativity, and adaptability. Furthermore, it supports global initiatives to improve physical and mental well-being through education, ensuring inclusivity and accessibility for students of all fitness levels.

The implications of this study are wide-ranging. For educators, it provides a practical guide to designing and implementing gamified PE programs that enhance participation, motivation, and performance. For students, gamification creates a more enjoyable and engaging experience, fostering positive attitudes toward physical activity. Academically, this study contributes to the growing knowledge of innovative teaching practices, laying a foundation for future research in gamified education. By synthesizing existing literature, this meta-synthesis aims to advance effective PE, creating a healthier and more active generation equipped to meet the challenges of the modern world.

Methodology

Research Design

This study employed meta-synthesis to integrate findings from several qualitative and mixed-methods studies. This meta-synthesis aimed to provide a comprehensive understanding of the use of gamified instruction in teaching physical education by conducting a systematic review of previous studies and integrating qualitative research findings into their major themes.

Search Strategy

Using Publish or Perish software, Google Scholar, Semantic Scholar, and Crossref, academic publications connected to gamification in teaching and learning physical education were found in an electronic database for scholarly research. All research published between 2020 and 2024 that was pertinent to using gamification in teaching and learning physical education were downloaded and examined. Further, the descriptors or keywords entered into the software were *qualitative, basic*

education, gamification, and physical education. These keywords were selected to draw out relevant articles. A flow diagram using PRISMA 2020 was then utilized to sort the screened data.

Inclusion and Exclusion Criteria

Inclusion and exclusion criteria provide a basis upon which a reviewer may draw valid and reliable conclusions. Included studies were selected based on the following inclusion criteria protocol: (a) must include studies related to the use of gamification; (b) must utilize a qualitative design; (c) must be written in English; (d) must be published from 2020 to 2024; and (e) must qualify using the Critical Appraisal Skills Programme (CASP). Selected papers were screened using the set inclusion criteria.

Data Analysis

Emerging themes were identified using the thematic analysis approach outlined by Clarke and Braun (2013), a qualitative data analysis technique that involves systematically examining patterns within the data. This process begins with data familiarization, where the collected responses are read multiple times to gain an overall understanding. Next, initial codes are generated by identifying meaningful segments of text relevant to the research objectives. These codes are then grouped into potential themes based on recurring patterns and conceptual similarities. Themes were further reviewed and refined to ensure coherence and distinctiveness, followed by their final definition and naming. This structured approach allowed for a comprehensive and rigorous analysis, ensuring that the identified themes accurately represented the participants' perspectives.

There were three (3) stages in the research paper selection using the PRISMA Flow Diagram 2020. The three stages were the following: Identification, Screening, and Included. In the identification stage, 200 studies were registered in Google Scholar and 617 studies were registered in the Crossref database. Four hundred forty-one (441) were registered in the Semantic Scholar database, totaling 1,258 studies in the initial screening using Publish or Perish software.

The teaching and learning experiences using gamification in teaching physical education were used to generate initial codes from the 14 studies included in the meta-synthesis. Table 1 reflects the study's title and corresponding authors with the generated codes used for thematic analysis.

Figure 1 Search Strategy Using PRISMA

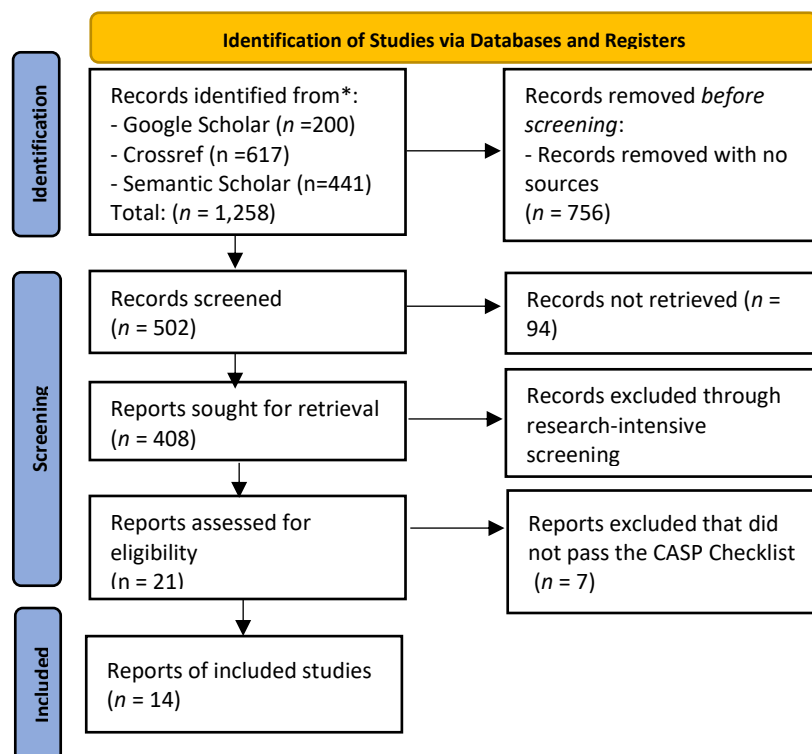


Table 1 *Studies Highlighting the Use of Gamification in Teaching Physical Education*

Article No.	Author/s and Year Published	Setting	Generated Initial Codes on the Use of Gamification in Teaching Physical Education
1	Ferriz-Valero et al. (2020)	Spain	<ul style="list-style-type: none"> • Gamified implementation beneficial for academic performance • Gamification is an innovative approach
2	Cheung and Ng (2021)	Hong Kong	<ul style="list-style-type: none"> • Student learning is influenced by content of the game • Gamification an effective tool for learning experiences
3	Becerra-Fernández (2022)	Spain	<ul style="list-style-type: none"> • Improves the teaching and learning process • Improves participation and physical activity levels
4	Marcaida et al. (2022)	Philippines	<ul style="list-style-type: none"> • Gamification promotes positive competitiveness • Online gamification is sometimes a problem to due slow Internet connection • Gamification increases classroom engagement • Gamification increases students' motivation • Meaningful learning comprehension
5	Mendes et al. (2022)	Brazil	<ul style="list-style-type: none"> • The association of gamified actions to digital technologies boosted education development in digital culture • Understanding gamification process more broadly • Beyond competition systems between individuals and teams • The association between gamification and ICT can promote training for and with digital culture
6	Soriano-Pascual et al. (2022)	Spain	<ul style="list-style-type: none"> • Cooperative work was promoted • Students are involved in the learning process • Students positively evaluate classroom social relationships • Gamification is currently one of the most interesting methodologies for achieving a high degree of student commitment, as well as students' success
7	Camacho-Sánchez et al. (2023)	Spain	<ul style="list-style-type: none"> • Gamification is a significant learning method due to their impact on student motivation and academic performance • Gamification can be effective at the university level
8	Flores-Aguilar et al. (2023)	Spain	<ul style="list-style-type: none"> • Gamification a framework promoting transformative learning • Gamification increased motivation in the subject • Boredom and tiring • The implementation of a gamified subject significantly increased the teacher's workload
9	Montiel-Ruiz et al. (2023)	Spain	<ul style="list-style-type: none"> • Use of gamification promotes physical activity • Gamification as an active methodology
10	Sotos-Martínez et al. (2023)	Spain	<ul style="list-style-type: none"> • No changes in extrinsic motivation, but positive changes in intrinsic motivation
11	Zhao and Luh (2023)	China	<ul style="list-style-type: none"> • Useful tool for teaching and learning • Introduces a better process tracking and feedback mechanism
12	El-Tanahi et al. (2024)		<ul style="list-style-type: none"> • The effectiveness of gamification in enhancing physical education and several skills and behaviors • Gamification significantly affects students' skills and abilities and brings about positive outcomes • Needs careful consideration when making it appear neutral but not trivial and boring
13	Fernández-Vázquez et al. (2024)	Spain	<ul style="list-style-type: none"> • Gamification techniques are effective in reducing perceived effort in physical education programs • More competent • Improvement in motor skills
14	Ferraz et al. (2024)	Portugal	<ul style="list-style-type: none"> • Including gamification in PE classes increases motivation • Gamification strategies seem to be valid and efficient • Gamification is a good tool

Results

The use of gamification in teaching physical education was used to generate initial codes highlighting the 14 studies considered in the meta-synthesis. As shown in Table 1, the initial codes for using gamification in teaching physical education were generated to search for themes. The general

codes were analyzed using the thematic analysis approach, out of which emerged four themes and one meta-theme. The themes generated were the following: gamification (1) enhances student engagement and motivation; (2) fosters collaboration and meaningful learning; (3) enhances physical performance; (4) increases teacher workloads and preparation. Meta theme 5 deals with implementation complexity. Gamification transforms teaching and learning physical education while navigating its complexities.

Theme 1: Enhances Student Engagement and Motivation

Gamification offers a transformative approach to traditional teaching models by significantly enhancing student engagement and motivation. Educational gamification involves transferring the mechanics of games to educational activities to alter behavior. As a result, it produces engaging and captivating pedagogic experiences that boost students' motivation, dedication, and comprehension of subject matter or the pleasure of educational activities themselves (Fernandez-Rio et al., 2020). Likewise, Arufe-Giráldez (2022) highlighted that gamified learning environments, particularly those utilizing a futuristic, transmedia narrative, foster active participation, teamwork, and intrinsic motivation. By integrating advanced hi-tech tools, these environments provide immersive, interactive learning experiences, shifting the focus from rote memorization to experiential learning. This makes education more relevant and engaging, particularly for digitally savvy learners. Another study found that gamification is one of the most interesting methodologies for achieving a high degree of student commitment and success. This is because students are immersed and focused on something specific, and this process enhances their enjoyment (Soriano-Pascual et al., 2022).

Engagement, defined as students' active participation, focus, and enthusiasm during learning (Poondej & Lerdpornkulrat, 2016), is pivotal in gamification's success. Cents-Boonstra et al. (2020) emphasized that fulfilling students' psychological needs such as autonomy, competence, and relatedness, directly fosters motivation and engagement. Gamified elements like leaderboards and customizable avatars align with Self-Determination Theory by offering autonomy in participating to students, a sense of competence through achievable goals, and relatedness through team-based activities. Teachers who integrate these elements effectively create structured, gamified experiences that encourage exploration and experimentation. Conversely, lessons lacking clear goals or engaging activities risk disengaging students. Gamification thus provides a framework for balancing enthusiasm, guidance, and student autonomy, ensuring sustained engagement over time.

Active learning strategies, such as case-based learning, further illustrate principles aligned with gamification. Raza et al. (2020) demonstrated that case-based learning enhances behavioral, emotional, cognitive, and agentic engagement. Similarly, gamification uses real-world scenarios and problem-solving tasks to captivate students' attention and foster critical thinking. Educators can deepen engagement and make learning more interactive by incorporating gamified scenarios into case-based approaches—such as awarding points for solution development or providing immediate feedback. Notably, agentic engagement, where students take ownership of their learning, mirrors gamified environments where students actively shape their experience through choices and strategy.

Gamified elements like virtual currency (VC) also play a crucial role in sustaining student interest. Dicheva et al. (2023) found that VC, points, badges, and leaderboards increase participation and out-of-class practice. These elements transform routine tasks into engaging challenges, encouraging consistent effort. However, their findings suggest that while gamification effectively boosts short-term engagement, its long-term effects on intrinsic motivation and academic performance are more nuanced. Educators can enhance these outcomes by combining VC with strategies promoting deeper learning, such as reflective activities or collaborative tasks, ensuring that gamified tools contribute to engagement and skill development.

The challenges of online education, amplified during the COVID-19 pandemic, have also highlighted gamification's potential to enhance engagement. Kang and Zhang (2020) emphasized that forum-based online teaching methods, which break assignments into incremental tasks, mirror gamified approaches by offering rewards for completing stages and fostering competition. Adding gamified

elements, such as badges for participation or leaderboards for submission quality, can amplify the effectiveness of such strategies. These tools reduce procrastination and plagiarism, as well as encouraging active participation, ultimately improving learning outcomes. By integrating gamification into online platforms, educators create environments in which students may stay motivated despite the challenges of remote learning.

Finally, teacher beliefs and practices are critical in successfully implementing gamification. Berger and Lauermann (2021) explored how teachers' motivational beliefs influence their teaching strategies, including autonomy-supportive practices. Gamified teaching is aligned with these practices by encouraging independence through choice-based tasks and self-paced challenges. When teachers integrate gamified elements that are aligned with their motivational beliefs, such as offering structured opportunities for students to collaborate or experiment, they foster emotional, behavioral, and cognitive engagement. However, ensuring alignment between teacher intentions and student experiences is crucial for maximizing the impact of gamified strategies. Misalignment—such as poorly explained gamified rules or insufficient feedback—can undermine the benefits of gamification, emphasizing the need for clear and well-structured implementations.

Lastly, gamification provides a powerful framework for enhancing student engagement and motivation by integrating interactive, goal-oriented, and collaborative elements into the learning process. By aligning gamified strategies with established theories like Self-Determination Theory, active learning methods, and teacher-driven practices, educators can create meaningful and engaging experiences that foster immediate participation and long-term academic success.

Theme 2: Fosters Collaboration and Meaningful Learning

Gamification enhances collaborative learning environments by incorporating game-based strategies promoting teamwork and meaningful student engagement. In physical education (PE), where teamwork and collaboration are essential, gamification aligns seamlessly with other active methodologies, such as cooperative learning, service learning, and adventure education (Hastie & Casey, 2014; Lindgren & Barker, 2019). These methodologies foster environments where students actively engage with peers to achieve shared goals, develop problem-solving skills, and apply learning in practical contexts. Fernandez-Rio et al. (2020), along with Chiva-Bartoll and Fernández-Rio (2022), have underscored the synergy between gamification and these pedagogical models, emphasizing their positive impact on student collaboration and meaningful learning.

Collaboration is a cornerstone of learning in PE, where students work together to improve physical fitness, build confidence, and develop social skills. Eze (2023) highlighted the intrinsic motivational benefits of collaborative learning, particularly in college-level PE classes. Students often select partners based on trust or complementary skill levels, creating a supportive environment where mutual encouragement enhances learning outcomes. Brinkley et al. (2017) noted that cooperative activities improve students' self-esteem and social cognition, both critical for fostering a sense of community within the classroom.

Gamification builds on these principles by integrating elements that encourage interaction and teamwork. Features like team-based challenges, group rewards, and cooperative tasks mirror the dynamics of social interdependence theory, a foundational framework for cooperative learning in PE (Sharan, 2015). Casey and Goodyear (2015) argued that the social interdependence fostered through such gamified approaches enables students to achieve shared goals while appreciating the value of diverse contributions from their peers. For example, team-based competitions within gamified PE classes can motivate students to strategize collaboratively, emphasizing individual and group accountability.

Inclusivity and accessibility are central to meaningful learning experiences in gamified PE settings. Morrison and Gleddie (2019) outlined best practices for inclusive physical education, such as fostering open communication, setting clear expectations, and planning for success. These practices are aligned with gamification's capacity to accommodate diverse learner needs. By offering customizable challenges and differentiated tasks, gamified environments ensure that all students can contribute

meaningfully, regardless of their athletic ability or prior experience. Furthermore, as Zach (2020) discussed, co-teaching strategies amplify gamification's benefits. Collaboration between veteran and student teachers introduces a blend of innovation and experience, enriching the learning environment, and ensuring that gamified activities remain dynamic and effective.

In addition to promoting teamwork, gamification supports reciprocal learning, where students and educators benefit from collaborative processes. Team challenges in gamified classrooms encourage students to share knowledge, negotiate roles, and reflect on their collective performance. Teachers play a facilitative role, guiding students to develop critical skills such as empathy, communication, and problem-solving. These experiences contribute to meaningful learning, defined by its relevance, applicability, and impact on students' personal and academic growth.

Gamification fosters collaboration and meaningful learning by leveraging team-based strategies and inclusive practices that are aligned with well-established cooperative learning methodologies. By integrating elements emphasizing teamwork, inclusivity, and shared responsibility, gamified PE environments allow students to develop individual and social competencies. These experiences enhance immediate learning outcomes and equip students with skills essential for lifelong collaboration and personal development.

Theme 3: Enhancement of Physical Performance

Game-based elements such as rewards, challenges, and interactive activities enhance physical fitness while fostering sustained engagement in PE courses. Studies like Eriksen et al. (2020) have emphasized the strong association between regular exercise and improved mental health outcomes, with frequent physical activity significantly reducing psychological distress, depression, and suicidality. By integrating gamified elements, physical education can make consistent exercise more enjoyable and achievable, addressing the barriers that prevent students from regular participation.

Similarly, the findings of Bonanni et al. (2022) on the neuroprotective effects of physical activity such as boosting neurotrophins suggest that gamified exercises can play a vital role in enhancing cognitive functions. Structured activities like virtual reality sports or app-based fitness games can simulate real-world physical challenges while stimulating brain function, improving memory, and promoting adaptability. Moreover, research by Blomstrand et al. (2023) highlighted the positive effects of chronic exercise on cognitive functions in older adults. These findings further reinforced that sustained physical engagement—enhanced by gamified instruction—can benefit all age groups. The structured yet enjoyable nature of gamification can encourage students to participate regularly, ensuring long-term benefits to overall cognition, executive function, and memory.

Gamified instruction also has the flexibility to integrate creative approaches, such as those identified by Herbert et al. (2020), where even short-term aerobic interventions yield improvements in mental health and stress reduction. This reinforces the notion that quick, engaging fitness games within physical education curricula can yield substantial gains in physical and emotional well-being.

Lastly, the comparison by Tanucan et al. (2022) between housework-based exercise and conventional exercise highlighted the adaptability of gamified instruction. Combining the accessibility of the former with the structure and efficacy of the latter through gamified tasks can optimize health-related fitness in adolescents. For instance, fitness games can incorporate household or practical movements into competitive scenarios, increasing accessibility while maintaining the effectiveness of traditional exercises. Gamified instruction offers an innovative approach to achieving fitness goals. By incorporating game mechanics into physical education, educators can enhance students' physical performance, mental health, and cognitive abilities sustainably and engagingly.

Theme 4: Increases Teachers' Workload and Preparation

The increasing demands on teachers have significantly raised their workloads in recent years. Teachers are now required to manage an expanding array of responsibilities, including administrative tasks, lesson planning, grading, and adapting to new educational standards. This growing workload often extends beyond classroom hours, leaving limited time for personal and professional

development. Teaching requires a broad spectrum of knowledge and skills, and achieving mastery takes considerable effort (Admiraal, 2022). Teachers have expressed that gamified processes increase their workloads (Arufe-Giráldez, 2022).

In Physical Education, integrating modern teaching methods such as gamification—the use of game design elements in non-game contexts—adds another layer of complexity to teachers' responsibilities. While gamification fosters student engagement and enhances learning outcomes, it necessitates meticulous planning and preparation. Teachers must design interactive activities, establish rules, monitor progress, and assess students effectively, which increases their workloads.

Dimensions of teacher well-being include subjective, physical, and mental health. A shift in defining well-being from mere life satisfaction to a holistic view of purposeful functioning (Pronk et al., 2021) has underscored the need to balance innovative teaching methods with teachers' mental health. Gamification, while effective, requires teachers to invest time in creating and customizing activities that align with curricular goals and students' needs.

Moreover, the Job Demands-Resources theoretical framework has identified heavy workloads as significant job demands contributing to teacher burnout (Jomoad et al., 2021). The introduction of gamification in PE teaching can intensify this burden if not supported by adequate resources, such as training or technological tools. Teachers must learn to incorporate gamified elements like leaderboards, point systems, or challenges into lessons while ensuring these activities are aligned with physical education standards and learning outcomes.

Despite these challenges, studies reveal a paradox: even when teachers are overwhelmed with roles and responsibilities, they often maintain positive evaluations and deliver satisfactory teaching outcomes (Tarraya, 2023). This resilience reflects their dedication and adaptability, especially in PE, where gamified approaches enhance student motivation, foster teamwork, and encourage active participation. Teachers also gain valuable professional experience from these practices, developing critical thinking, leadership, and innovative teaching strategies.

However, the heavy workloads associated with gamification underscore the importance of teacher induction and support systems. New teachers, in particular, face challenges transitioning from pre-service to in-service roles, often demonstrating lower self-efficacy and higher attrition rates (Reeves et al., 2022). Targeted training in gamification strategies during teacher education programs could ease this transition, equipping teachers with tools to manage workloads more effectively while maintaining high-quality instruction. By providing professional development opportunities, peer collaboration, and resource support, teachers can harness the benefits of gamification without compromising their well-being or instructional quality.

Theme 5: Complexities in Implementation

Even though the idea of gamification is becoming more popular, some issues still exist with categorizing it and its components. Schöbel et al. (2020) found that reducing complexity, finding commonalities between items, and comprehending object relationships were all part of classification processes. This challenge is further compounded by an epistemological problem inherent in gamification: the transversality of games. Gamification often faces limits in preserving playfulness, and describing these limits is difficult without an interpretive model that explains the transition between games and gamification. A systemic game–gamification model, rooted in structural functionalist and systemic perspectives, has been proposed to address this complexity. This model aids in understanding the phenomenon of gamification by interpreting it as a social reality within a framework of complexity. However, a significant risk arises when gamification isolates certain elements, such as competitive systems, which may not belong to games. This selective emphasis can lead to a phenomenon akin to “sportification”, analogous to transforming games into sports, further complicating the categorization and implementation of gamification (González-González & Navarro-Adelantado, 2021).

Meta-Theme: Transforming Teaching and Learning Physical Education through Gamification While Navigating Its Complexities

By incorporating game-based components into instructional strategies, gamification is changing traditional classroom settings into dynamic, interactive learning environments, thereby modernizing education. This strategy encourages active participation and continuous interest in learning by enhancing student motivation and engagement through leaderboards, challenges, and incentives. Research shows that giving students practical experience navigating real-world situations effectively enhances knowledge retention and problem-solving abilities. Blooket and Kahoot, for example, provide immersive learning environments where students are inspired, and acquire the critical thinking and teamwork skills necessary for lifelong learning (Chandler, 2024). However, there are challenges associated with gamification of which teachers must be aware. Maintaining a balance between extrinsic and intrinsic motivation is a major problem; relying too much on outside incentives, like badges or points, can overwhelm the inherent delight of learning, because not all students have equal access to the required technology resources, and accessibility problems continue to exist. Furthermore, poorly structured exercises can cause cognitive overload and divert students' attention from learning objectives. To ensure that all students gain from this creative approach, addressing these issues calls for careful game design, prioritizing instructional material, and distributing resources fairly (Baah et al., 2024).

Educators must embrace pedagogical alignment, inclusion, and relevance to successfully implement gamification in teaching and learning. Better connections between learning experiences and curricular goals may be made by using customizable game forms, increasing their effect and relevance. New technologies like artificial intelligence and virtual reality provide sophisticated tools for developing individualized, immersive learning environments. Additionally, by taking on a facilitative teaching role, teachers can lead students through gamified experiences, encouraging greater participation and ensuring that the process's main focus is on the learning objectives (Exemplary Teaching Practices, 2024).

Conclusion and Recommendations

This meta-synthesis highlighted the transformative role of gamification in Physical Education (PE), demonstrating its potential to enhance student engagement, foster collaboration, and improve physical performance through interactive and meaningful learning experiences. By incorporating game-based elements such as rewards, challenges, and teamwork, educators can address traditional barriers in PE while aligning with contemporary pedagogical approaches. However, the study also identified key challenges, including increased teacher workloads and difficulties in implementation, underscoring the need for careful planning and resource allocation.

To maximize the benefits of gamification in PE, it is recommended that educators adopt a strategic and well-structured approach. This includes aligning gamified strategies with curricular goals, integrating professional development programs regarding game design and technology use, and implementing phased adoption to ease transitions. Additionally, schools should provide adequate resources and support mechanisms to help educators manage workload concerns effectively.

Future research could explore the long-term effects of gamification on student motivation, performance, and overall physical activity habits. Investigating its impact across different age groups and educational settings, as well as identifying best practices for overcoming implementation challenges, would further contribute to developing dynamic, inclusive, and effective PE learning environments.

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Examining Biopsychosocial Factors Influencing Drug Use Among Incarcerated Individuals and the Voluntarily Surrendered: Implications for Drug Treatment Programs in the Philippines

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Abstract

Aim/Purpose: This study aimed to identify multifaceted factors contributing to drug use and dependence. It sought to delineate characteristics of two distinct groups of drug users: those incarcerated with pending drug-related court cases, and those who have voluntarily surrendered to participate in community-based interventions. By examining the interplay between biological, psychological, and social factors, this research provides a wide-ranging understanding of the underlying mechanisms driving substance use behaviors. Furthermore, the study explored how these biopsychosocial dimensions influence the progression and persistence of substance use disorders. Through rigorous analysis, it aimed to uncover specific patterns and correlations that can inform targeted intervention strategies. Ultimately, this research aspires to enhance the effectiveness of community-based interventions and contribute valuable insights to the broader substance use disorder treatment field.

Introduction/Background: The global crisis of illegal drug use remains a significant threat to public safety and health, affecting millions of adults worldwide. In the Philippines, the government's "Oplan Tokhang" initiative, launched in 2016, led to more than 1.26 million people surrendering to authorities. Although some research exists on the nature of drug use in the Philippines, there is a significant gap in the literature regarding the characteristics of individuals impacted by the Philippine government's anti-illegal drug campaign. Drug use can be explained in various ways, but health behaviors are complex and influenced by multiple contextual factors, making a single explanation insufficient. This study employed a biopsychosocial framework to analyze a multifactorial profile of drug users. By examining biological, psychological, and social dimensions, the research sought to elucidate the intricate interactions contributing to substance use disorders. Research supports that these interconnected factors contribute to the development of substance use disorders.

Methodology: This study employed a cross-sectional design, involving 564 respondents from Metro Manila, Philippines divided into two groups: 340 voluntary surrenderers and 224 incarcerated plea bargainers. Purposive sampling was employed to select participants, ensuring the inclusion of individuals actively engaged in intervention programs. The study meticulously followed ethical research standards to ensure the accuracy and integrity of the collected data. This approach provided a relevant and focused sample for examining the factors influencing drug use and dependence. Anchored in a biopsychosocial framework, the survey assessed factors related to drug use across three domains: Biological (Substance use disorder, Age of first drug use, Number of drugs used), Psychological (Coping skills, Life skills, Psychological well-being), and Social (Family support, Quality of family life, Perceived community safety). Data analysis was conducted using hierarchical multiple regression and independent-samples *t*-tests to examine the interaction of research variables and differences between the groups.

Findings: The results revealed that the majority of recovering users were predominantly male, had low educational attainment, and primarily used "shabu" (a methamphetamine). Incarcerated plea bargainers reported higher scores on substance use disorder symptoms and were more likely to be

poly-drug users compared to voluntary surrenderers. In contrast, voluntary surrenderers exhibited greater life skills and psychological well-being than incarcerated individuals. Life skills emerged as a significant predictor of substance use disorder symptoms for both groups, suggesting that the inability to cope with life demands increases the risk of substance use. Additionally, perceived community safety was a significant predictor of substance use disorder symptoms among voluntary surrenderers, underscoring the importance of supply reduction efforts. These results highlight the necessity to differentiate drug treatment approaches based on the profile of users.

Contribution/Impact on Society: The findings of this study underscored the critical importance of adopting a biopsychosocial approach to address the complex issue of drug use. By considering the interplay between biological, psychological, and social factors, a more comprehensive understanding of drug use and dependence can be achieved. These results may be used to advocate for the design and implementation of comprehensive community intervention programs tailored to facilitate the recovery of drug users, thereby promoting public health and safety.

Recommendations: To further elucidate the relationships among the various factors influencing drug use and dependence, advanced multivariate analytical techniques should be employed. These techniques would enable a more nuanced examination of the interactions between different variables. Additionally, the proposed model should be tested using more rigorous research designs, such as randomized controlled trials, to establish causality and enhance the robustness of the findings.

Research Limitations: The study was limited by its reliance on self-report scales, which may be subject to social desirability bias. Furthermore, the differing circumstances under which each group of respondents completed the scales could have influenced their responses. These limitations should be considered when interpreting the results and designing future research studies.

Future Research: Given that a significant portion of the participants were unemployed, further research should be conducted to examine the relationship between unemployment and drug use. Additionally, it is crucial to investigate the biopsychosocial traits of populations residing in more rural areas compared to individuals in Metro Manila, as these groups may exhibit distinct characteristics. Moreover, additional variables within the biopsychosocial framework that were not addressed in the current research need to be examined. For instance, factors such as childhood aggression and life stress warrant further investigation, as they may significantly contribute to the development of substance use disorders. Understanding the interplay of these additional variables may provide a more comprehensive understanding of drug use and inform more effective intervention programs.

Keywords: *Substance abuse, biopsychosocial factors, life skills, well-being*

Introduction

The global crisis of illegal drug use remains one of the most significant threats to public safety and health in many nations, with at least 5% of adults worldwide having used drugs at least once. According to the 2020 World Drug Report, approximately 269 million people worldwide used drugs in 2018, representing a 30% increase from 2009. Additionally, over 35 million people suffer from drug use disorders globally (UNODC, 2020). The 2024 World Drug Report further highlighted the continued expansion of drug use and markets, with 292 million people using drugs in 2022 (UNODC, 2024).

Similar issues exist in the Philippines, where according to data from the Dangerous Drugs Board (DDB), around 1.8 million people were drug users (Gavilan, 2016). To encourage suspected drug offenders to voluntarily surrender and receive treatment, the government started "Oplan Tokhang," a demand reduction initiative in 2016 (Gonowon, 2022). Since then, more than 1.26 million people have surrendered to law enforcement authorities (Felipe, 2017).

Data obtained by the Philippine News Agency from the National Prosecution Service reported an all-time high at that point of 70,706 drug cases filed in courts (Caliwan, 2018). According to a report from the Commission on Audit, the Bureau of Jail Management and Penology saw a jump of 612% in

various jails' congestion rates. To decongest its prisons, the Philippine Supreme Court established a framework for plea bargaining, which permits individuals with minor drug offenses to enter into plea agreements that reduce jail time and grant conditional release after completing a drug treatment program (DOJ, 2018).

In effect, two distinct groups have emerged as a result of the government's war on illegal drugs. A growing number of those who voluntarily surrendered and those incarcerated under plea bargains have enlisted in drug treatment programs. Voluntary surrenderers are community members who turned themselves in to the "Oplan Tokhang" initiative and enlisted in a community-based drug rehabilitation program. Plea bargainers, on the other hand, are incarcerated participants who entered into plea agreements with the court that require completion of a drug treatment program (DOJ, 2018).

Understanding the variables that affect drug use is the first step in treating it. Different theories have sought to explain drug use and dependence, one of the most dominant ones being the biopsychosocial model of health (Engel, 1978). This theory posits that drug use is a product of complex interactions of different factors. These factors include biological factors such as exposure and genetics; psychological factors such as attitudes, emotions, and cognitions; and social factors such as family dynamics and community conditions (Skewes & Gonzalez, 2013). Recent studies continue to support the biopsychosocial model's relevance in understanding substance use disorders. For instance, a comprehensive multivariate model of biopsychosocial factors associated with opioid misuse highlighted the significant role of socioecological and health indicators in predicting substance use disorders (Montiel Ishino et al., 2020). Additionally, a multi-level analysis of biological, social, and psychological determinants of substance use disorder emphasized the intricate interplay of these factors in addiction vulnerability (Belfiore et al., 2024).

Although some research has been done on the nature of drug use in the Philippines, there is a dearth of knowledge describing the characteristics of individuals affected by the government's campaign against illegal drugs. Thus, this study aimed to shed light on the biopsychosocial factors that contribute to drug use and dependence among two distinct groups: voluntary surrenderers and incarcerated plea bargainers. By highlighting their similarities and differences, this research sought to provide insights into the potential implications for treatment interventions.

Related Literature

Drug use has been explained in several ways: as a disease, as a social problem, and as deviant behavior. However, Griffiths (2005) contended that health behaviors have multifaceted components and are strongly influenced by contextual factors, and thus, cannot be sufficiently explained by any single factor. The biopsychosocial framework takes a systems approach to understanding the complexity of health problems, including substance use disorders. According to this viewpoint, a person's biological and/or genetic predisposition, psychological traits, social environment, and the types of activity in which they engage are all interconnected and contribute to health issues. According to research, these factors interact to cause substance use disorders (Skewes & Gonzalez, 2013).

Biological Factors

Several studies have indicated that genetics play a significant role in drug use risk. The National Institute on Drug Abuse (NIDA) found shared genetic markers underlying substance use disorders, suggesting genetic predisposition (NIDA, 2023). Additionally, Latvala et al. (2020) reported that parental substance misuse is robustly associated with offspring substance misuse, highlighting direct genetic risk.

Research has indicated that individuals who abuse one substance are more prone to abuse others. Watts et al. (2024) found that adolescents influenced by peers' substance use behaviors were likely to engage in multiple substance use. Early onset of illicit drug use increases the risk of dependence, with Trujillo et al. (2019) emphasizing early initiation as a predictor of substance use disorders later in adulthood.

Wang et al. (2023) linked early-onset substance use to increased risk of hypertension and other health issues. Substance use alters brain tissue and structure, affecting decision-making and impulsivity. Hamidullah et al. (2020) highlighted neurobiological divergences associated with adolescent substance use, impacting cognitive and behavioral outcomes.

In this study, an individual's first and last drug use, along with the number of drugs used, were classified as biological factors that interact with an individual's biological makeup and physiological responses. Early drug use can significantly impact brain development and increase the likelihood of dependency (Squeglia et al., 2009). The most recent drug use influences current biological and physiological states, such as tolerance and withdrawal symptoms (Koob & Le Moal, 2001). The diversity of substances used affects the cumulative biological burden on the body, leading to varying physiological and neurological outcomes (Volkow et al., 2012). These factors are closely tied to biological responses, influencing the development and progression of substance use disorders.

Psychological Factors

Recent studies have shown a significant relationship between psychological characteristics and drug use, with traits such as impulsivity, anxiety, and irritability playing a crucial role. Shahrabadi et al. (2020) emphasized that psychological functioning significantly influences drug use behaviors. Bahji (2024) highlighted the co-occurrence of substance use disorders with psychiatric conditions like depression, anxiety, and impulse control disorders.

Stress is a critical risk factor for drug use, as early life or chronic stress lead to neuroendocrine changes affecting brain systems involved in motivation and adaptive behaviors. Sinha (2024) discussed how disrupted stress responses impact substance use disorders. Bahji (2024) also underscored the link between emotional distress and substance use in adolescents.

Social Factors

Substance use is closely linked to social factors such as socioeconomic status, culture, and religion. Socioeconomic disparities shape substance use patterns, with individuals from lower socioeconomic backgrounds more likely to engage in substance use due to increased stress and limited access to healthcare (Estrellado, 2025). Cultural and religious contexts also influence substance use behaviors, with religiosity often acting as a protective factor (Palamar et al., 2014).

Adolescents not pursuing higher education are at higher risk of substance abuse, with peer influence significantly affecting adolescent substance use behaviors (Watts et al., 2024). Peer victimization in early adolescence, mediated by sleep problems, is linked to subsequent substance use (Kaynak et al., 2021).

The aforementioned research studies have demonstrated that drug use is influenced by biological, psychological, and social aspects. Consequently, drug use is associated with health, psychological, and social antecedents and consequences. A clear understanding of their interplay is essential, particularly when addressing the unique circumstances and needs of specific drug user groups.

Philippine Studies on Drug Use

A Dangerous Drugs Board (2017) study found that Filipino mono-drug users primarily used methamphetamine, marijuana, and solvents, with most users being from urban areas, particularly the national capital region (43.31%). More than half (53.52%) were single, with a 10:1 male-to-female ratio, 45.96% were unemployed, and only 27.32% had a high school education or beyond. The mean age was 31, with an average of 6 years of drug use. The increase in admission rates may be due to intensified anti-drug campaigns, family support, and improved treatment programs.

A study of male drug users in the Philippines (Tuliao & Liwag, 2011) highlighted that psychological variables like motivation, effect, self-efficacy, coping, and cravings predicted recurrence. Non-relapse cases had more coping mechanisms, lower levels of desire and negative affect, and greater motivation to improve; functional social support did not significantly differ between relapse and non-relapse

groups. Furthermore, Caday (2017) highlighted the role of social factors in drug abuse among Filipino college students, citing negative peer influence and poor family dynamics as key factors.

Family, friends, and community have played crucial roles in the recovery of Filipino drug users (Manaois et al., 2022). Structural changes in social networks has resulted in a significant decrease in negative influences and increased recovery capital over time (Ader et al., 2024).

This study aimed to fill the gap in the existing literature by comparing the characteristics of voluntary surrenderers and incarcerated plea bargainers by using the biopsychosocial theory, and building on existing literature regarding Filipino drug users. Particularly, it aimed to shed light on incarcerated drug users with pending criminal cases, as there is currently little data on this group. Hence, this study attempted to compare group characteristics of voluntary surrenderers and incarcerated plea bargainers, using the biopsychosocial theory as a lens.

Research Questions

1. How do voluntary surrenderers and incarcerated drug users differ in terms of the following factors: (a) substance use disorder symptoms, (b) first drug use, (c) last drug use, (d) number of drugs used, (e) Use of life skills, (f) psychological well-being, (g) family support, (h) quality of family life, and (i) perceived community safety?

2. Between the two groups of drug users, what differences exist among the predictors of substance use disorder?

Methodology

Participants

Participants were recruited through purposive sampling. Five hundred and seventy-four persons of legal age who used drugs (PWUDs) and were attending intervention programs across various sites in Metro Manila were invited to participate in the study. These individuals received an orientation about the study, which included detailed information about its objectives, procedures, and ethical considerations. Of those invited, a total of 564 participants volunteered to participate in the research and gave their informed consent. The participants were categorized into two groups based on their program status: 340 voluntary surrenderers and 224 incarcerated plea-bargainers. These individuals enlisted in a community-based drug rehabilitation program for different reasons. Voluntary surrenderers enrolled in the program of their own accord, seeking to overcome drug dependence and reintegrate into society. By contrast, the incarcerated individuals participated in the program as a court-mandated requirement, as part of their plea-bargaining agreement as PWUDs. This purposive sampling method ensured that the study consisted of individuals actively engaged in intervention programs, thereby providing a relevant and focused sample for examining the factors influencing drug use and dependence.

Measures

Respondent-completed questionnaires were used to obtain data related to participants' socio-demographics, exposure to types of drugs and frequency of use (biological), psychological well-being and life skills (psychological), and family environment and community (social).

Substance Use Disorder. This pertained to a psychiatric condition described by impaired control of substance use, impaired functioning, increased dosage, and continued use despite significant problems caused by substance use (American Psychiatric Association, 2013). This was measured using the International Statistical Classification of Diseases and Related Health Problems 10th Revision (WHO, 2010). The reliability of this measurement tool is confirmed with an acceptable Cronbach's alpha score of .853, indicating robust internal consistency.

Age of First Drug Use. This variable referred to the age at which respondents first reported using drugs.

Time Since Last Drug Use. This variable indicated the duration since the participant last reported using drugs. It was measured as the number of months between the reported last drug use and completion of the questionnaire.

Number of Drugs Used. This variable represented the total number of different substances that the participant reported having used. It was calculated as the sum of all types of drugs that participants admitted to using.

Coping Skills. These pertained to efforts or strategies to resolve stressful life situations. Selected items from the Coping Behaviors Inventory (Myers & Brown, 1996) that measure behaviors and thoughts of individuals to prevent, avoid, or control substance use were adapted to measure coping skills. The reliability of this measurement was supported by a Cronbach's alpha score of .927, indicating high internal consistency.

Life Skills. These pertained to psychosocial skills essential in dealing with everyday life's demands and challenges. It covered five basic areas: (a) decision-making and problem-solving, (b) creative thinking and critical thinking, (c) communication and interpersonal skills, (d) self-awareness and empathy, and (e) coping with emotions and stress. Selected items from Sharma's Life Skills questionnaire (Sharma, 2003) were adapted and used to measure life skills. The reliability of this scale was confirmed with a Cronbach's alpha score of .899, indicating strong internal consistency.

Psychological Well-Being. This entailed self-assessment of an individual's physical and psychological health status that was manifested in the absence of perceived physical discomfort. It was measured using the World Health Organization Well-Being Index-5 (Topp et al., 2015), which demonstrated strong internal consistency with a Cronbach's alpha score of .858.

Family Support. This consisted of behaviors that foster a sense of comfort and belonging, and that an individual feels accepted and approved by their parents and family members. This was measured using four items in the family subscale of the Multidimensional Scale of Perceived Social Support developed by Zimet et al. (1988). The reliability of this measure was confirmed with a Cronbach's alpha score of .879.

Quality of Family Life. This reflected families' perceived satisfaction regarding their living conditions, interactions and functioning, and general well-being. Seven items from the Beach Center Family Quality of Life Scale developed by Summers et al. (2005) were utilized to measure the quality of family life. The reliability of this scale was indicated by a Cronbach's alpha score of .911.

Perceived Community Safety. This entailed personal or subjective judgment of an individual's sense of safety (i.e., home, street, work) while going through daily activities without fear of crime or disorder (Crawford & Evans, 2016). This variable was measured using a scale with a reliability score indicated by a Cronbach's alpha of .513.

Procedures

Ethical clearance was acquired from the Ateneo de Manila University Research Ethics Office. Informed consent was obtained before the survey was administered. Participants were not given any monetary incentives. During the research orientation, they were thoroughly informed that their involvement in the study was entirely voluntary and that they retained the right to withdraw from participation at any point during the study. To ensure privacy, the survey data was kept confidential and anonymized. No identifiers or personal information of participants were included in the dataset. It was encoded in a password-protected data file and will be deleted upon completion of this research. A statistical software package was used to analyze descriptive and inferential statistical approaches. The data was analyzed using hierarchical multiple regression and an independent-samples *t*-test. Statistical significance was set at a *p*-value < .05.

Results

Participants' Demographic Profile

Table 1 provides descriptive information about the participants. Out of a total of 564 participants, 60.28% were voluntary surrenderers, while 39.72% were incarcerated plea-bargainers. Voluntary

surrenderers had a slightly higher mean age of 41.72 years compared to 36.45 years for plea-bargainers. In terms of gender, the majority in both groups were male, accounting for approximately 78–79%. Employment status data revealed that a substantial proportion were unemployed, with 31.76% of voluntary surrenderers and 45.09% of plea-bargainers reporting no employment prior to their incarceration. Educational attainment varied, with most having completed at least high school. Among voluntary surrenderers, 55.88% had a high school education, while 62.50% of plea-bargainers had achieved this level of education. Regarding drug use, shabu (methamphetamine) and marijuana were the most commonly abused substances. Among voluntary surrenderers, 90.59% reported using shabu, and 16.18% reported using marijuana. Similarly, 88.39% of plea-bargainers reported using shabu, while 10.27% reported using marijuana.

Table 1 Descriptive Statistics of Participants

Variables		Voluntary Surrendered (<i>n</i> = 340)				Incarcerated Plea Bargainers (<i>n</i> = 224)			
		F	%	<i>M</i>	<i>SD</i>	F	%	<i>M</i>	<i>SD</i>
Age				41.72	10.65			36.45	9.56
Sex	Male	268	78.82			177	79.02		
	Female	72	21.18			47	20.98		
Civil Status	Single	115	33.82			82	36.61		
	Married	165	48.53			108	48.21		
	Widowed/Separated	60	17.65			34	15.18		
Employment	Regular	103	30.29			55	24.55		
Status	Contractual	126	37.06			66	29.46		
	Unemployed	108	31.76			101	45.09		
	Self-employed	3	0.88			2	0.89		
Educational	Grade School	62	18.24			55	24.55		
Attainment	High School	190	55.88			140	62.50		
	Vocational	36	10.59			10	4.46		
	College	52	15.29			19	8.48		
Type of Drugs	Marijuana	55	16.18			23	10.27		
Used	Shabu	308	90.59			198	88.39		
	Rugby	2	0.59			1	0.45		
	Cocaine	1	0.29			0	-		
	Others	0	-			1	0.45		

Group Differences in Biopsychosocial Factors

Table 2 shows the results of an independent-samples *t*-test comparing the differences between voluntarily surrendered participants and incarcerated plea bargainers. In terms of participants' biological variables, the *t*-test revealed a significant difference in substance use disorder scores between voluntary (*M* = .494, *SD* = .891) and incarcerated (*M* = .845, *SD* = 1.516) groups; *t* (324.853) = -3.035, *p* < .05, with higher scores for incarcerated participants. On the other hand, no significant differences were found between the ages at which participants first used drugs and their last reported drug use. Results revealed that plea-bargainers had used more types of drugs (*M* = 2.357, *SD* = 1.426) than the voluntary participants (*M* = 1.365, *SD* = 1.313), *t* (562) = -3.035, *p* < .05.

Group differences were also found among scores for psychological factors. Coping skills [*t* (562.000) = 8.155, *p* < .05], life skills [*t* (522.726) = 3.611, *p* < .05], and psychological well-being [*t* (402.356) = 7.086, *p* < .05] were significantly higher among voluntary surrenderers compared to plea bargainers. This would suggest that those who voluntarily surrendered have a more positive view of their circumstances and can better demonstrate the life skills needed to cope with life's challenges.

Conversely, no differences were found in social factors such as family support [*t* (563) = 1.182, *p* > .05] and perceived community safety [*t* (416.342) = 1.192, *p* > .05] between voluntary surrenderers and plea bargainers. The social factor quality of family life revealed that those who were incarcerated

had higher scores ($M = 3.326$, $SD = 0.486$) than the voluntary participants ($M = 3.021$, $SD = 0.553$), $t(562) = -6.710$, $p < .05$.

Table 2 Means, Standard Deviation, and Test of Difference Between Groups

Factors	Voluntary Surrendered ($n = 340$)		Incarcerated Plea Bargainers ($n = 224$)		t	df	Mean Difference
	M	SD	M	SD			
Substance Use Disorder	0.494	0.891	0.835	1.516	-3.035**	324.853	-.341
First Drug Use	25.711	9.426	24.381	8.877	1.677	562.000	1.329
Last Drug Use	26.865	41.005	23.255	38.997	1.043	562.000	3.610
Number of Drugs Used	1.365	1.313	2.357	1.426	-8.485*	562.000	-.992
Coping Skills	2.192	0.735	1.670	0.755	8.155*	562.000	.522
Life Skills	4.286	0.496	4.144	0.428	3.611*	522.726	.142
Psychological Wellbeing	4.269	1.051	3.526	1.318	7.086*	402.356	.743
Family Support	6.297	0.959	6.201	0.916	1.182	562.000	.096
Quality of Family Life	3.021	0.553	3.326	0.486	-6.710*	562.000	-.305
Community Safety	3.183	0.528	3.122	0.634	1.192	416.342	.061

Note. $N = 564$, * $p < .001$, ** $p < .05$.

Predictors of Substance Use Disorder

Table 3 shows a three-stage hierarchical multiple regression of the voluntary surrenderers, with substance use disorder as the outcome variable. At each stage, predictor variables were entered following the biopsychosocial model of drug use.

Table 3 Hierarchical Regression Analysis of Predictors of Substance Use Disorder (Voluntary Surrendered)

Predictor	Variable	Model 1 B	Model 2 β	Model 3 β	95% CI (Model 3)
Biological Factors:	First Drug Use	-.002	-.012	.002	[-.010, .010]
	Last Drug Use	-.146*	-.137*	-.125**	[-.005, .000]
	Number of Drugs Used	.007	-.013	-.010	[-.079, .065]
Psychological Factors:	Coping Skills		-.029	-.026	[-.159, .095]
	Life Skills		-.145*	-.139**	[-.470, -.029]
	Psychological Wellbeing		-.075	-.037	[-.130, .067]
Social Factors:	Family Support			-.076	[-.188, .046]
	Quality of Family Life			.087	[-.061, .341]
	Community Safety			-.153**	[-.441, -.077]
	R^2	.021	.057	.086	
	Adj. R^2	.013	.040	.061	
	ΔR^2	.021	.036	.029	
	F	2.431	3.355**	3.462*	

Note. $n = 340$, * $p < .001$, ** $p < .05$

The regression analysis revealed that when biological conditions were entered at Stage One, a non-significant regression equation was found [$F(3,336) = 2.431$, $p = .065$]. However, the last reported drug use as a predictor variable had a significant influence that accounted for a 2% unique contribution of the variation in substance use disorder. Introducing the psychological variables in Stage Two explained an additional 3.5% of the variation in substance use disorder; this change in R squared was

significant [$F(6,333) = 3.355, p = .003$]. Life skills were a significant predictor of substance use disorder that accounted for a 1.9% unique contribution. The last addition of social variables to the regression model explained an additional 2.9% of the variation in substance use disorder, and this change in R squared was also significant [$F(9,330) = 3.462, p < .001$].

Having all eight predictor variables entered in the regression model at Stage Three, the significant predictors of substance use disorder were last reported drug use, life skills, and community safety with unique variance explained values of 1.5%, 1.4%, and 2.2%, respectively. The regression model with eight biopsychosocial predictors explained 8.6% of substance use disorders among voluntarily surrendered drug users.

Table 4 shows the regression model for the plea bargainer group, with substance use disorder as the outcome variable. The regression analysis shows that at Stage One, biological factors were not significant predictors of substance use disorder [$F(3,220) = 2.584, p = .054$]. Introducing the psychological variables in Stage Two explained an additional 8.7% of the variation in substance use disorder; this change in R squared was significant [$F(6,217) = 5.029, p < .001$]. Life skills and psychological well-being were significant predictors of substance use disorder that accounted for 4.2% and 1.6% of unique contributions. The addition of social variables to the regression model explained an additional 2.1% of the variation in substance use disorder, and this change in R squared was also significant [$F(9,214) = 3.958, p < .001$].

Table 4 Hierarchical Regression Analysis of Predictors of Substance Use Disorder (Plea Bargainers)

Predictor	Variable	Model 1 B	Model 2 β	Model 3 β	95% CI (Model 3)
Biological Factors:	First Drug Use	-.129	-.126	-.131**	[-.044, -.001]
	Last Drug Use	-.059	-.034	-.028	[-.006, .004]
	Number of Drugs Used	-.127	-.141*	-.137**	[-.282, -.011]
Psychological Factors:	Coping Skills		-.030	-.011	[-.279, .236]
	Life Skills		-.218*	-.178**	[-1.161, -.099]
	Psychological Wellbeing		-.136	-.103	[-.282, .044]
Social Factors:	Family Support			-.132	[-.491, .055]
	Quality of Family Life			.010	[-.527, .589]
	Community Safety			-.086	[-.513, -.099]
	R^2	.034	.122	.143	
	Adj. R^2	.021	.098	.107	
	ΔR^2	.034	.088	.021	
	F	2.584	5.029*	3.958*	

Note. $n = 224$, * $p < .001$, ** $p < .05$.

Having all eight predictor variables entered in the regression model at Stage Three, the significant predictors of substance use disorder were the first reported drug use, number of drugs used, and life skills with unique variance explained values of 1.7%, 1.8%, and 2.19% respectively. The regression model of having eight biopsychosocial predictors explained 14.3% of substance use disorders among plea-bargainer drug users.

Discussion

The findings showed that there are group differences among Filipino drug users who opted for community-based drug treatment programs. Particularly, substance use disorder and the number of drugs used were significantly higher among incarcerated individuals. Frequent use of illicit drugs has been found to contribute to psychological problems and an increased risk of developing substance use disorder (Harris & Weitzman, 2024; Hechanova et al., 2023; Liu et al., 2025).

It is noteworthy that participants' initial drug use experiences occurred throughout their adolescence. Research suggests that individuals who start using drugs early in life are more likely to

experience drug-related issues later in life (Woodward et al., 2023). The first experience of drug use was a significant predictor of substance use disorder among incarcerated plea bargainers who reported earlier onset of drug use, indicating greater vulnerability compared to the voluntary surrenderers group.

Incarcerated participants reported a lower perception of well-being, which may be influenced by the physical effects of drug use and their current imprisonment. This group also reported a significantly higher number of drugs used, suggesting increased frequency of use to satisfy cravings (drug dependency). Their perceived well-being and the number of drugs used were significant predictors of substance use disorder. These results corroborated literature indicating that well-being is negatively associated with incidents of illicit drug use, and the degree of association is strongest towards dangerous drugs (Volkow & Blanco, 2023). Improving psychological well-being may be crucial to enhancing positive health outcomes, fostering a life full of purpose and meaning, promoting continued personal growth, and nurturing quality relationships with others (Ryff & Singer, 2008). Addressing these factors through targeted interventions could reduce the risk of substance use disorder, and improve the overall quality of life for individuals undergoing drug treatment programs.

Incarcerated participants also reported lower life skills, indicating inadequacy in problem-solving, managing negative emotions, and lower self-efficacy. A previous study showed that psychological factors, such as self-efficacy, negative affect, and inadequate coping were predictors of drug-related disorders (Tuliao & Liwag, 2011). This is vital since results have indicated that psychological factors are predictors of substance use disorder for both groups, suggesting the need for treatment programs to address these areas. Drug users need to be provided with necessary life skills to avoid drug use and relapse, and further enhance their well-being through wellness activities such as mindfulness. Mindfulness activities have been found to increase positive psychosocial outcomes and decrease substance use-related problems (Bowen et al., 2006).

The social factor of perceived community safety may not be significant to incarcerated participants, since they are in prison. However, after their release, they may face similar challenges as voluntarily surrendered participants regarding community safety. This social factor is vital for recovering drug users where community security is elusive. Reintegration into their communities remains a challenge as they are faced with the longstanding reality of sustained availability of illegal drugs, existing and rampant drug use, and the presence of drug pushers in their communities. These findings have significant implications for designing intervention programs that involve preparing a safe community environment where individuals can recover and reintegrate effectively.

Implications for Practice

The study's findings support the position of the Psychological Association of the Philippines (2019) in promoting a scientific and humane approach to addressing community health problems, such as addiction and substance use. The need for descriptive studies to profile current drug users is fundamental to developing appropriate intervention programs. Moreover, drug recovery programs must account for evidence-informed drug interventions that are tailored to local cultural values and economic conditions. Thus, funding both wider implementation of programs like the *Katatagan Kontra Droga sa Komunidad*, a psycho-educational, community-based drug intervention program (Hechanova et al., 2018), and gathering more evidence of such programs' benefits are vital in ensuring a scientific and humane approach to addressing drug use and dependence in the community.

Furthermore, findings can lead to discussions about policy-making, such as prioritizing poverty alleviation and generating job opportunities to deter drug use. There must be efforts towards addressing social issues (e.g., resource allocation, social service delivery, poverty, unemployment, education, etc.) that perpetuate drug use (Barnett, 2009). There is also a need to reinforce laws, particularly in urban poor areas where the proliferation of drugs and their use is evident. Schools and communities have big roles in promoting drug prevention programs, as schools can teach life skills and coping strategies that can be used to manage life circumstances correlated with drug use. They can also enhance parenting skills that hone similar coping and life skills among the young. Drug

prevention-oriented parenting programs that entail coaching parents to deal with their children effectively and identify early signs of substance abuse may likewise be developed. Communities can be empowered to self-organize and develop mechanisms to promote peace and order within their barangays. It would also be beneficial if communities would institutionalize involvement programs that engage youth to become productive members of society.

Limitations and Future Research Direction

This study examined various factors influencing drug use among Filipinos. However, interpretations are limited to participants in community-based treatment programs with low to mild risks, and its results were based on self-reported scales. Sociodemographic characteristics, including education, marital status, and employment, may act as potential confounders, necessitating control in future analyses for an accurate understanding of the relationships between the variables and drug use. This approach would allow for the isolation of specific effects of biopsychosocial factors on substance use disorder symptoms, thereby enhancing the robustness and validity of findings.

Recommendations for further studies include examining the extent of unemployment's impact on drug use, testing populations outside of Metro Manila, and exploring variables like childhood aggression and life stress using the biopsychosocial paradigm. Investigating drug use patterns among women and primary sources of family income, as well as employing multivariate techniques to understand interrelationships among variables, is also suggested.

Conclusion

This study highlighted the multifactorial nature of drug use, emphasizing the interplay of biological, psychological, and social factors. A key finding was the identification of life skills as a significant psychological indicator influencing substance use disorder, and underscoring the need for intervention programs that enhance life skills. Additionally, perceived community safety emerged as critical in designing drug treatment programs, suggesting that efforts to improve community safety can support recovery and prevent relapse.

Viewing drug use through the biopsychosocial model is crucial for developing comprehensive interventions that address the biopsychosocial needs of drug users. This study's findings were aligned with biopsychosocial theory, emphasizing the importance of addressing multiple dimensions to achieve effective outcomes. Future research should explore the intricate relationships between biopsychosocial factors and substance use, focusing on evidence-based interventions tailored to different cultural and socioeconomic contexts. By adopting a comprehensive and humane approach, better support for individuals affected by drug use may be given, contributing to healthier and safer communities.

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City Brand: Key Components, Integrated Marketing Communication Strategies, and Strategic Initiatives for Enhancing Suzhou's Unique City

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Abstract

Aim/Purpose: This research aims to identify the key components of Suzhou's city brand, evaluate the effectiveness of its integrated marketing communication (IMC) strategies, and propose actionable initiatives to enhance the city's global brand identity. By addressing these objectives, the study seeks to strengthen Suzhou's position as a cultural and economic hub, providing practical recommendations for policymakers and marketers to improve its global recognition and appeal.

Introduction/Background: City branding has emerged as a critical strategy for fostering economic growth, cultural prominence, and tourism development. Suzhou, known for its rich history, cultural heritage, and robust economic profile, faces the challenge of effectively positioning itself as a global city in a competitive international landscape. This study focuses on leveraging Suzhou's unique assets to strengthen its city brand through strategic IMC initiatives. The research highlights the need to balance tradition with innovation to attract international audiences and investment by aligning the city's historical and cultural identity with contemporary marketing practices.

Methodology: This qualitative case study explored Suzhou's city brand and integrated marketing communication (IMC) strategies through primary and secondary data collection. Primary data consisted of in-depth interviews with 15 tourism brand managers from Suzhou's cultural tourism industry, selected for their expertise in IMC and branding initiatives. Semi-structured interviews were conducted face-to-face with audio recordings (with consent) and supplemented by notes. Secondary data included reports, academic studies, and official documents, providing historical and contextual insights. Thematic analysis identified patterns within the qualitative data, supported by triangulation to ensure reliability and validity. Member checking allowed participants to review and verify interpretations, further enhancing credibility. This approach revealed both strengths and areas for improvement in Suzhou's branding strategies.

Findings: The study revealed that Suzhou's city brand is anchored in four primary pillars. First, its rich historical and cultural heritage, characterized by well-preserved ancient architecture, classical gardens, and vibrant traditions, forms the cornerstone of its identity. Second, the city's economic strength and market potential, driven by thriving industries and an innovation-focused economy, establish it as a regional economic powerhouse. Third, Suzhou's high quality of life, combining urban conveniences with natural beauty, significantly enhances its appeal as a livable destination. Lastly, its diverse tourism resources, including UNESCO World Heritage sites and picturesque waterways, position Suzhou as a premier destination for both domestic and international tourists. To strengthen its brand, Suzhou has implemented effective IMC strategies. Social media campaigns promote cultural events, festivals, and tourism packages on platforms like WeChat, Weibo, and Instagram. Online advertising leverages targeted ads to reach global audiences, while promotional events such as trade shows, cultural festivals, and business forums showcase the city's strengths. These initiatives have significantly bolstered Suzhou's brand recognition, increased tourism, and enhanced its global reputation. Despite these successes, challenges persist. Inconsistent branding messages across platforms dilute the city's core identity, while limited use of certain digital platforms and insufficient

engagement with international audiences restrict Suzhou's outreach. Addressing these challenges is crucial to solidifying its global brand presence.

Contribution/Impact on Society: This research contributes to the field of city branding and marketing communication by providing actionable insights into how cities can leverage their unique assets to enhance global recognition. The study highlights how cities like Suzhou can integrate their cultural heritage, economic strengths, and tourism resources to create a compelling city brand. It also addresses challenges such as inconsistent messaging and underutilization of digital platforms, offering recommendations for improvement. For policymakers and marketers, the research underscores the importance of coordinated strategies for sustainable urban development, attracting investment, tourism, and talent, and ensuring long-term economic and cultural growth.

Recommendations: To further enhance Suzhou's city brand, it is recommended that a stronger synergy between online and offline marketing efforts be developed, a cohesive and unified visual identity be established, and marketing activities across various communication platforms be integrated. Additionally, existing challenges in marketing implementation should be addressed by focusing more on Suzhou's cultural heritage, drawing inspiration from global best practices, and targeting specific audience segments, all of which would significantly strengthen Suzhou's brand identity and appeal.

Research Limitation: The study is limited by its qualitative approach and the relatively small sample size of 15 informants, which may not fully capture the diversity of perspectives on Suzhou's branding efforts. Furthermore, the research focuses exclusively on Suzhou, making it less applicable to cities with differing cultural, economic, or social contexts.

Future Research: Future studies should explore the long-term effects of IMC strategies on city branding through longitudinal research, offering insights into strategy evolution and sustained impact. Quantitative approaches could confirm variables in city branding and IMC, enabling a more robust analysis. Additionally, research on audience segmentation using demographic, behavioral, and psychographic data can enhance tailored marketing strategies. Comparative studies across cities could also identify best practices and innovative approaches to city branding.

Keywords: *Brand, integrated marketing strategy, tourism promotion*

Introduction

In an increasingly globalized and competitive market, city branding and image are crucial for attracting investment, promoting tourism, and stimulating economic growth (Ma et al., 2021). Thus, exploring the construction of city brands and the role of integrated marketing communication strategies has become particularly urgent.

Suzhou, China, serves as an exemplary case for exploring city branding due to its rich historical and cultural heritage, which has positioned it as a leading city in tourism and economic development (Xu et al., 2024). The city has demonstrated significant market potential, with tourism being a major contributor to its economy. Suzhou attracted over 100 million domestic and international tourists in the past year, generating revenue exceeding 50 billion Renminbi (RMB), highlighting the economic importance of tourism in the region. Additionally, Suzhou's GDP in 2022 reached 2.4 trillion RMB, showcasing the city's robust economic growth and dynamic markets (China Briefing, 2023; Suzhou Municipal Government, 2024). These statistics reflect the city's unique charm and market potential, which are central to its city brand.

Studying Suzhou's city brand and its integrated marketing communication strategies provides valuable insights into how cities could leverage their unique characteristics to build a competitive advantage. As urban development continues, city branding and communication strategies become increasingly vital. Globalization and intense market competition require cities to effectively highlight their attractions and competitive advantages on the global stage (Ng et al., 2023). To build a successful city brand, it is essential to consider factors such as historical and cultural assets, tourism resources,

economic strengths, and the quality of life for residents (Yang et al., 2019; Zhou et al., 2020). Effective integrated marketing communication strategies allow cities to communicate their core values and unique attributes to key target audiences, including tourists, investors, and local residents (Kavaratzis, 2004; Ma et al., 2021).

Theoretical frameworks on city branding have emphasized the importance of integrating various factors, such as historical and cultural assets, economic attributes, and quality of life, to build a cohesive and appealing city image (Yang et al., 2019; Zhou et al., 2020). For instance, Suzhou City is renowned for its classical gardens, a UNESCO World Heritage site, and its thriving economy as a leading hub for high-tech industries and manufacturing, making it a compelling case for city branding efforts (Zeng, 2019; Zhang, 2023). Integrated marketing communication strategies play a critical role in conveying a city's core values and unique attractions to target audiences, including potential tourists, investors, and local residents (Kavaratzis, 2004; Ma et al., 2021). While prior studies have demonstrated the effectiveness of such strategies in enhancing brand visibility and engagement (Aitken & Campelo, 2011; Zenker et al., 2017), there has been limited research exploring their application in the context of Suzhou City, particularly in aligning its historical and economic characteristics with cohesive branding efforts. This gap highlights the need for further investigation into Suzhou's branding practices to bridge the resulting disconnect between its unique identity and global visibility.

Despite extensive research on city branding from the perspectives of urban planning and business, there remains a noticeable gap in studies that focus on integrated marketing communication as a tool for developing city brands. This paper seeks to fill this gap by analyzing Suzhou's city brand through the lens of integrated marketing communication. The research objectives were threefold: (1) to identify the key components of Suzhou's city brand, (2) to assess the effectiveness of its integrated marketing communication strategies in promoting the city brand, and (3) to propose initiatives aimed at enhancing Suzhou's city brand through these communication strategies. By addressing these objectives, the study aimed to offer a comprehensive understanding of how integrated marketing communication may contribute to Suzhou's branding efforts and provide recommendations for its future development.

Literature Review

Brief Profile of Suzhou

Suzhou, a major city in Jiangsu Province, China, holds a distinguished place in the country's cultural, historical, and economic landscape (see Figure 1).

Figure 1 *Suzhou's City Map*



Source. *China Highlights*, 2024

With a population exceeding 12 million, it ranks among the region's most populous and influential cities (Hu et al., 2024). The city's legacy dates back over 2,500 years, making it one of China's oldest

cities, and its history is deeply intertwined with traditional Chinese art, culture, and industry. Known for its serene classical Chinese gardens, Suzhou has earned the title of the "Venice of the East" due to its intricate network of canals and waterways that traverse the city (Jiang et al., 2022). These canals, along with iconic sites like the Humble Administrator's Garden, Lingering Garden, and the Grand Canal—a UNESCO World Heritage Site—are a testament to Suzhou's historical importance and aesthetic value (Liu et al., 2024a). These gardens, which were once the private retreats of wealthy scholars and officials, are characterized by meticulously arranged plantings, tranquil ponds, and architectural features designed to create harmony with nature.

Geographically, Suzhou is strategically located in the Yangtze River Delta, just 100 kilometers from Shanghai, making it a vital link in the region's economic and cultural network (Zhang et al., 2021; Ding et al., 2024). Its proximity to Shanghai, a global economic powerhouse, has enabled Suzhou to become a significant hub for tourism, commerce, and industry. The city is not only a popular tourist destination, but also an important center for trade, especially in silk production and textile manufacturing, for which it has been famous for centuries (Mau, 2024). Moreover, Suzhou has diversified its economy in recent years, emerging as a leader in high-tech industries such as biotechnology, information technology, and advanced manufacturing (Chen et al., 2022). Its industrial parks and modern infrastructure, coupled with its rich cultural heritage, have made it a key area for both foreign and domestic investment.

Suzhou's city brand reflects its unique blend of cultural heritage, economic vitality, and innovative development (Xing & Guo, 2024). The city has seamlessly integrated its ancient traditions with modern infrastructure, creating a distinct identity that resonates with both residents and visitors. Suzhou's well-developed transportation network, including high-speed rail connections to major cities and its growing international business presence, reinforce its position as a forward-thinking metropolis (Shuai, 2024). At the same time, Suzhou has placed a strong emphasis on sustainable development, with initiatives aimed at enhancing urban livability and environmental quality, ensuring a harmonious balance between growth and preservation (Liu et al., 2024b). This fusion of historical charm, economic prosperity, and innovation contributes to Suzhou's reputation as a dynamic and influential city within China's rapidly evolving landscape, making it a compelling destination for tourism, investment, and cultural exchange.

City Brand

The concept of "city brand" has its roots in Western countries, where "national marketing" is a dominant topic in academic circles, leading to extensive research on the subject. Kotler, a pioneer in marketing, proposed that cities, regions, and even towns could engage in "location marketing" to leverage their distinctive features as competitive advantages. He suggested that these areas should use their actual attributes to create a compelling brand image for residence, tourism, and investment. According to Kotler et al. (2021), "national marketing: creating strategic methods for a nation's wealth" is considered a marketing behavior where regional marketing focuses on developing around the region's unique characteristics to meet audience needs and integrate internal and external "products."

In his book on strategic brand management, Lalaounis (2020) argued that virtually anything could become a brand, with the primary goal being to make the brand known and create a favorable perception among its audiences. The transformation of economic resources has significantly impacted city brand development, as a strong city brand influences and promotes commercial investment and related industries. Therefore, enhancing the integration and connection among various elements of a city brand is crucial to advancing its development in a more professional and intentional direction.

Brand theory underscores the role of core brand elements, such as differentiation, equity, and identity, in building a strong city brand (Green et al., 2016; Bonakdar & Audirac, 2020). Differentiation involves identifying and highlighting unique features that distinguish a city from its competitors, while equity refers to the perceived value and emotional resonance of the brand among its target audiences (Górska-Warsewicz, 2020). Identity encompasses the cohesive and consistent representation of a

city's character and values through branding initiatives (Chan et al., 2022). In the context of city branding, integrating these elements with cultural and historical landmarks is particularly important, as these features serve as tangible and symbolic representations of a city's heritage and uniqueness.

Research has consistently demonstrated that cities with a distinct and unified brand identity, particularly those emphasizing their architectural landmarks, cultural traditions, or natural beauty, are more likely to attract tourism, foreign investment, and other forms of economic development (Anholt, 2010; Al-Hinkawi & Zedan, 2021). These brand elements not only enhance a city's appeal, but also foster a sense of pride and belonging among local residents, strengthening the brand's internal cohesion. For instance, cities such as Paris and Kyoto have successfully leveraged their iconic landmarks and cultural attributes—like the Eiffel Tower or traditional tea houses—to create globally recognized brands that attract millions of visitors annually (Yousaf & Fan, 2020).

Similarly, Suzhou, renowned for its classical gardens, ancient waterways, and silk production heritage, presents an untapped opportunity to align its brand identity with these iconic features (Jiang et al., 2022; Liu et al., 2024b; Xing & Guo, 2024). By strategically promoting its historical and cultural assets, Suzhou has differentiated itself as a premier destination for cultural tourism while reinforcing its equity as a city that embodies elegance, tradition, and innovation. Such efforts have included integrating Suzhou's landmarks into its visual branding, storytelling campaigns, and digital marketing strategies (Fan, 2014; Chao, 2023). These approaches have positioned Suzhou not only as a cultural hub, but also as a modern, vibrant city capable of appealing to global audiences, including tourists, investors, and international businesses.

Integrated Marketing Communication (IMC)

Integrated Marketing Communications (IMC) have become increasingly significant in the marketing field due to their ability to combine various communication tools and strategies into a cohesive and unified approach. IMC aims to deliver consistent messages to target audiences, enhancing brand visibility and consumer engagement (Schultz & Schultz, 2004). This article explores the fundamental principles and benefits of IMC, along with their application in the contemporary business environment.

The theory of IMC, introduced by Don Schultz, emphasizes the importance of adopting a consumer-centric perspective. Schultz argued that effective communication with consumers involves presenting a brand image through diverse communication methods (Schultz & Schultz, 2004). He advocated a systematic approach to planning and executing IMC strategies, which involves creating a structured communication process that can be evaluated and managed effectively. This approach ensures that all communication efforts are aligned and work together to reinforce the brand message, creating a closed-loop communication system.

The growing importance of IMC is supported by various scholars who have highlighted its effectiveness in achieving a unified brand message and improving consumer relationships. For instance, Šerić et al. (2020) discussed how IMC helps brands deliver a consistent message across multiple channels, which enhances brand credibility and consumer trust. Similarly, Porcu et al. (2020) emphasized that IMC facilitated better alignment between marketing activities and business objectives, leading to more efficient resource allocation and improved marketing outcomes.

In the context of the contemporary business environment, IMC is essential for addressing the challenges posed by fragmented media channels and evolving consumer behaviors. As businesses navigate these complexities, adopting an IMC approach enables them to create more coherent and engaging marketing campaigns, ultimately driving better performance and stronger brand connections (Pisicchio & Toaldo, 2021). Incorporating IMC into city branding involves aligning tools with brand elements such as historical landmarks, cultural assets, and economic offerings. For example, Šerić et al. (2020) discussed the role of IMC in creating consistent messages across multiple channels, which is crucial for establishing credibility and trust. Pisicchio and Toaldo (2021) emphasized that IMC improves brand cohesion, especially for cities competing in the tourism sector.

When applied to city branding, IMC tools can highlight key attractions such as Suzhou's classical gardens, historical architecture, and silk production heritage. These landmarks can be promoted using IMC strategies to target domestic and international audiences, showcasing their relevance to contemporary tourism and investment opportunities. For instance, digital storytelling campaigns, interactive tourism apps, and cultural festivals are IMC strategies that can elevate Suzhou's brand globally (Vel & Sharma, 2010; Sharma, 2024).

The integration of IMC with brand theory provides a robust foundation for enhancing city brands, particularly by leveraging historical landmarks and cultural assets (Chakraborty & Jain, 2022). The tools of IMC, such as digital marketing, public relations, and experiential events, are effective in promoting city brands to diverse audiences (Šerić & Vernuccio, 2020). This article delved into the basic principles of IMC, its advantages, and its practical applications in the dynamic marketing landscape of the time, providing a comprehensive understanding of how IMC could be leveraged to enhance brand communication and effectiveness in Suzhou City.

Research Methodology

This study employed a qualitative case study research approach to achieve its objectives. Data collection involved utilizing both primary and secondary sources. Primary data were gathered through interviews with selected participants, while secondary data were sourced from existing reports, studies, and documents related to Suzhou City. The use of qualitative methods allowed for an in-depth exploration of the nuances and complexities of Suzhou's city brand and its integrated marketing communication strategies. Interviews with key informants provided valuable insights into the perceptions and experiences related to the city's branding efforts. Secondary data from previous research, reports, and official documents offered a contextual backdrop and historical perspective on Suzhou's branding and marketing strategies.

This paper primarily employed in-depth interviews, a widely used qualitative research method, to gather rich, detailed data (Hennink et al., 2020). The objective of using this method was to select a representative sample from relevant target groups within the tourism industry, conduct a thorough analysis of the research subjects, and derive meaningful insights into their characteristics, trends, and experiences. The process of conducting the in-depth interviews followed several structured steps to ensure reliable and comprehensive data collection.

First, 15 tourism brand managers from Suzhou's cultural tourism industry were carefully selected based on specific criteria. The criteria included their direct involvement in the management of tourism brands in Suzhou, their expertise in integrated marketing communication strategies, and their experience with the city's branding initiatives. Additionally, participants were chosen to represent a mix of public and private sector professionals, ensuring a diverse range of perspectives on Suzhou's tourism brand strategies.

The interviews were conducted in a semi-structured format, allowing flexibility while ensuring that key topics were covered. A set of pre-determined open-ended questions was developed to guide the interviews, focusing on the respondents' experiences, perceptions, and insights regarding Suzhou's city branding efforts, and also the effectiveness of integrated marketing communication strategies. The semi-structured format allowed for probing deeper into specific areas of interest that emerged during the conversations (Buys et al., 2022). The interviews were conducted face-to-face. They were audio-recorded with the participants' consent, and notes were taken during the conversations. The duration of each interview ranged from 30 minutes to one hour, providing ample time for participants to give detailed responses.

This research employed qualitative data analysis using thematic analysis, a widely accepted method for identifying, analyzing, and reporting patterns (themes) within qualitative data. To enhance the rigor, validity, and trustworthiness of the analysis, triangulation was employed (Morse, 2015). Specifically, triangulation involved the use of multiple data sources, including interviews with different tourism brand managers, to ensure a comprehensive understanding of the research topic. Additionally, member checking was utilized, allowing participants to review and verify the findings

(Birt et al., 2016). This combination of methods ensured that the findings were well-supported and credible.

Results

Key Components that Contribute to the Uniqueness of Suzhou's City Brand

Key components that contribute to the uniqueness of Suzhou's city brand are shown in Table 1. Suzhou's city brand is distinguished by a harmonious blend of historical charm, economic vitality, and a commitment to enhancing the quality of life for both residents and visitors. Central to its unique identity is the city's rich historical and cultural heritage, epitomized by its renowned gardens, traditional silk production, and vibrant local festivals. These elements reflect Suzhou's deep cultural roots and historical significance, creating a distinctive atmosphere that has attracted global admiration. Complementing this cultural allure are Suzhou's economic strengths, driven by diverse business sectors and key industries that fuel local development and prosperity.

Table 1 *Key Components of Suzhou's City Brand*

Key Components	Sub Components
Historical and Cultural Heritage	Garden Art and Architectural Style
	Silk Culture
	Local Festivals and Traditions
	Architectural Style and Regional Customs
	Internationally Renowned Suzhou Gardens
	Suzhou Opera and Human History
	Unique Cultural Events and Festivals
Economic Strengths	Key Industries Driving Local Development
	Diverse Business Sectors
	Economic Advantages of Suzhou
Market Potential	Attractive Demographics
	Consumer Trends
	Urbanization and Infrastructure Development
	Growing Middle Class
	Government Support and Business Environment
	Initiatives for Market Tapping
Resident Quality of Life	Integration of Digital Technology
	Cultural Preservation and Green Development
	Infrastructure and Amenities
	Long-Term Stay Experience
	Economic Opportunities
	Educational and Medical Services
	Cultural Tourism Industry and Housing Policies

The city's strategic advantages and supportive economic policies are pivotal in enhancing its economic landscape, creating a dynamic environment conducive to growth and innovation. Suzhou's market potential is further accentuated by its attractive demographics, with a rapidly expanding middle class and a young, skilled workforce, positioning the city as a key player in the region's economic transformation. The city's progressive urbanization efforts, including the development of modern housing, commercial spaces, and transportation infrastructure, foster a vibrant and interconnected environment for residents and businesses alike.

Furthermore, Suzhou's commitment to digital integration is evident in its initiatives to incorporate cutting-edge technologies such as artificial intelligence, smart manufacturing, and sustainable urban planning, which not only attract tech-focused businesses, but also enhance the city's global competitiveness. Government policies aimed at fostering innovation, such as tax incentives for high-tech companies and subsidies for startups, further reinforce the city's status as a hub for investment and entrepreneurship.

At the same time, Suzhou places a strong emphasis on the quality of life of its residents, balancing rapid development with a focus on cultural preservation and environmental sustainability. The city is dedicated to maintaining green spaces, improving public services, and ensuring access to world-class healthcare and education. This holistic approach to development ensures that Suzhou offers a high standard of living, making it an attractive place to both live and work. In combining elements of traditional Chinese heritage with modern urbanization, Suzhou's city brand embodies a sophisticated blend of culture, innovation, and sustainability, contributing to its continued growth and appeal.

The theme of the uniqueness of Suzhou's city brand is a harmonious integration of historical charm, economic vitality, and a commitment to enhancing the quality of life for residents and visitors. The city's brand is built upon four key components, each representing a distinct theme, as illustrated in Figure 2.

Figure 2 Themes of the Uniqueness of Suzhou's City Brand



First, Suzhou takes pride in preserving and celebrating its rich historical and cultural heritage, which is exemplified by its world-renowned gardens, traditional silk industry, and vibrant local festivals. These deep cultural roots provide a unique backdrop that enhances the city's global appeal.

Second, Suzhou's robust economic foundation and adaptability in the global arena are critical to its brand, supported by diverse business sectors and a favorable economic environment that drives local development.

Third, the city offers significant market potential for businesses and investors, with attractive demographics, growing infrastructure, and supportive government initiatives that create ample opportunities for growth.

Finally, Suzhou is dedicated to enhancing the quality of life for its residents, focusing on cultural preservation, green development, and comprehensive infrastructure that together ensure a high standard of living. This multifaceted approach highlights how Suzhou's city brand is built on a blend of tradition and modernity, making it a distinctive and thriving urban center.

Effectiveness of Suzhou's Integrated Marketing Communication Strategies in Promoting City Brand

Suzhou's IMC strategies integrate online and offline channels to boost the city brand. Social media and online advertising engage audiences, while offline events complement these efforts. Brand

awareness is measured using analytical tools, with successful engagement strategies providing benchmarks (Table 2).

Suzhou's city branding efforts leverage an integrated marketing communications (IMC) strategy that combines both online and offline elements to boost brand awareness, foster engagement, and attract a diverse audience. Through social media campaigns and targeted online advertisements, Suzhou connects with tech-savvy, younger audiences, showcasing the city's cultural heritage and scenic beauty. Platforms like Weibo, Douyin, and WeChat are key to reaching both local and international viewers, offering interactive elements like live-streamed events and hashtag campaigns. However, the challenges of content saturation and fluctuating visibility on these platforms require Suzhou to innovate continually, perhaps through partnerships with influencers or by creating interactive digital campaigns that set it apart from competing city brands.

Table 2 *Suzhou's City Brand Integrated Marketing Communication Strategies*

Strategies	Details
Network Channels	Social media campaigns or online advertising campaigns Engaging with its online audience through social media Challenges or obstacles
Offline Activities and Events	The factors make offline activities effective Cases of offline activities
Measuring Brand Awareness and Engagement	Specific tools or analytics platforms Examples of successful engagement strategies
Put Forward Measures	Synergistic effect of online and offline marketing Advice on how Suzhou can seamlessly integrate online and offline activities Potential challenges or risks in achieving synergy

Offline activities, such as cultural festivals, exhibitions, and hands-on workshops, are crucial in providing immersive experiences that strengthen the city's appeal. These events are most effective when they incorporate Suzhou's unique cultural themes, use historic venues, and include interactive components that encourage participation. Strategic partnerships with local businesses and tourism agencies also contribute to successful execution, while a well-planned publicity strategy helps generate anticipation and broader media coverage.

To measure the effectiveness of these efforts, Suzhou relies on analytical tools that assess online engagement metrics and offline attendance, providing insights into audience demographics and campaign reach. Campaigns that highlight Suzhou's cultural assets—like the "Suzhou Heritage Month" or live-streamed garden tours—have proven particularly effective, resonating with audiences emotionally and generating high engagement rates.

Recognizing the value of synergy between online and offline campaigns, Suzhou strives to create a seamless experience that enhances its brand's impact. For instance, social media previews of offline events can boost anticipation and attendance, while livestreams during events provide online audiences with a taste of the experience, encouraging future visits. To achieve this synergy, Suzhou focuses on consistent branding and personalized invitations, informed by online data, to ensure relevant audiences for each event. Nevertheless, this integration poses challenges; it requires careful planning to avoid disjointed messages, and there's a risk that audiences may favor online engagement over physical attendance. By strategically navigating these challenges, Suzhou can continue strengthening its city brand, enticing both domestic and international visitors to discover its rich cultural heritage.

Initiatives for Enhancing Suzhou's Unique City Brand Through IMC Strategies

The initiatives for enhancing Suzhou's unique city brand through integrated marketing communication strategies are shown in Table 3.

Table 3 *Initiatives for Enhancing Suzhou's City Brand*

Initiatives	Details
Synergistic effect of online and offline marketing	Strategies or methods Suzhou adopts to achieve greater synergy Advice on how Suzhou can seamlessly integrate online and offline activities Potential challenge or risk in achieving synergy
Content strategies for showcasing cultural heritage and economic opportunities	Innovative content forms or narrative techniques that could be incorporated into marketing efforts Innovative marketing content forms in the integration of city brand promotion and the cultural tourism industry Effect evaluation and future outlook
Measuring brand awareness and engagement	Specific tools or analytics platforms Examples of successful engagement strategies
Segmentation of target audience	Specific criteria or variables that Suzhou could use for audience segmentation Experience of other destinations or industries when targeting specific audience segments

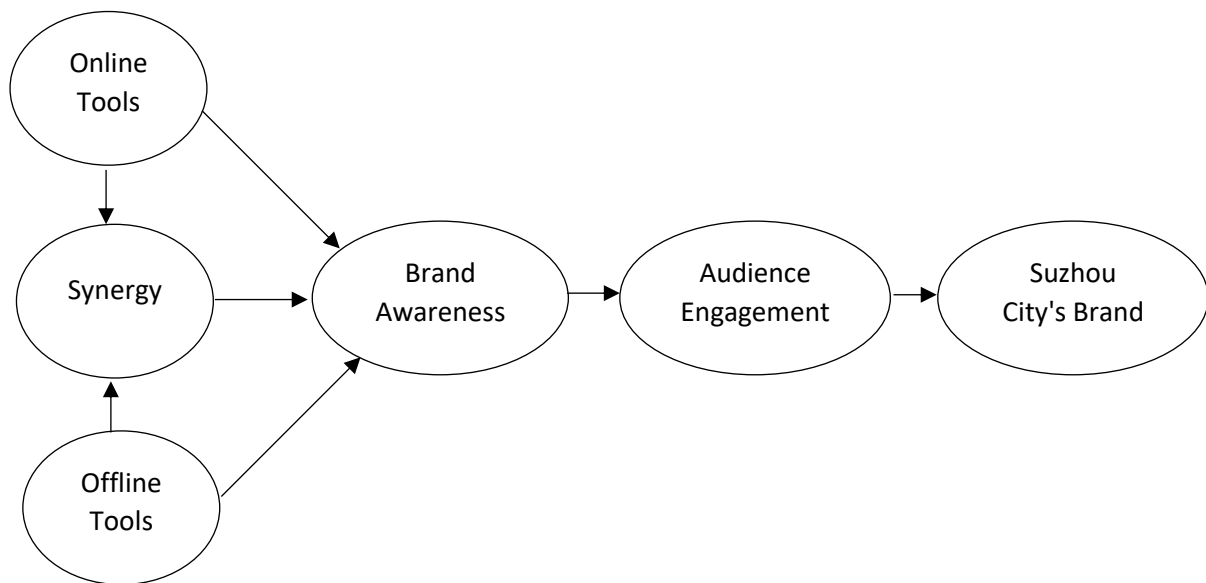
Suzhou has embraced content strategies showcasing its rich cultural heritage and economic opportunities. By integrating local stories, artisan features, and virtual tours into marketing campaigns, Suzhou connects emotionally with audiences, offering a vibrant snapshot of its culture and lifestyle. Innovative content formats, like virtual reality experiences and influencer collaborations, appeal to modern travelers seeking unique cultural adventures. To measure the impact of these initiatives, Suzhou utilizes tools like Google Analytics and social media insights to gather data on engagement rates and audience demographics. Successful campaigns that combine cultural storytelling with digital interaction have demonstrated high engagement, underscoring the value of content that resonates emotionally.

Suzhou's focus on audience segmentation further sharpens its outreach, ensuring targeted messaging for different traveler types—from cultural enthusiasts to business investors. By observing successful segmentation strategies from other cultural destinations, Suzhou can refine its approach and tailor its message to specific audience segments. Learning from these cases allows Suzhou to create more personalized, relevant content that aligns with its audience's varied interests and expectations.

Together, these initiatives position Suzhou as a dynamic city brand, balancing tradition with modern appeal. Yet, as global trends and audience preferences evolve, Suzhou must remain adaptable, continuously updating its strategies to maintain its competitive edge. This flexibility will allow the city to meet the changing needs of tourists and investors alike, sustaining long-term growth in both tourism and economic development. Figure 3 summarizes how IMC tools affect the Suzhou City brand.

The relationships between key variables such as IMC tools (online, offline, and the synergy between online and offline strategies), which promote cultural and economic content in the context of tourism, highlight important city landmarks. This approach leads to increased brand awareness and audience engagement, ultimately enhancing Suzhou's city brand. Suzhou's IMC strategies effectively leverage a combination of online and offline tools to enhance the city's brand, attract diverse audiences, and promote its rich cultural heritage and economic opportunities. By utilizing social media campaigns, online advertisements, and offline cultural events, Suzhou can create a seamless and immersive brand experience that resonates with both domestic and international audiences.

Figure 3 *The Role of Integrated Marketing Communication Tools in Enhancing Suzhou City's Brand*



The integration of innovative content, such as live-streaming and influencer collaborations, further strengthens the city's appeal. Despite challenges in maintaining synergy between online and offline efforts, Suzhou's focus on audience segmentation and tailored content allows for more personalized and impactful marketing strategies. To maintain its competitive edge, Suzhou must continue to adapt to changing global trends and audience preferences, ensuring its city brand remains dynamic and sustainable in the long term.

Discussion

Suzhou's rich historical and cultural heritage has been pivotal in shaping the city's brand. With a history spanning over 2,500 years, Suzhou is home to well-preserved landmarks such as the Humble Administrator's Garden and Tiger Hill. These monuments not only exemplify traditional Chinese architecture but also reflect the artistic achievements of previous generations. This aligns with findings by Bian and Haque (2020) and Kim and Wang (2018), which suggested that a city needs distinctive characteristics to establish a strong brand image. Suzhou's city brand is thus grounded in its unique historical and cultural assets.

Suzhou's extensive historical and cultural heritage provides it with unique advantages for urban branding. The city's integrated marketing communication strategies effectively highlight Suzhou's diverse tourism resources, cultural landscapes, and economic achievements. This approach is supported by Schultz and Schultz (2004), who emphasized the importance of utilizing multiple channels—such as diverse media advertising, well-designed thematic events, and social media engagement—to enhance public awareness and positive perception of a city's brand. By leveraging these strategies, Suzhou has successfully increased the recognition and favorability of its city brand.

Initiatives to adopt innovative content formats for promoting Suzhou's cultural heritage resonate with the growing emphasis on experiential marketing in city branding (Smilansky, 2017). Drawing from successful branding strategies implemented in other cities, as noted by Chen and Thwaites (2018), is a proven approach. Utilizing iconic symbols and engaging in international exchanges have been effective strategies in various contexts. This study highlights the importance of audience segmentation based on demographic, psychographic, and behavioral factors, reflecting established marketing research practices (Nica et al., 2019). While Suzhou has made commendable progress in integrating its unique charm with its cultural and tourism sectors, the research underscores the need for continuous adaptation to evolving societal trends and preferences. By implementing the recommended initiatives, Suzhou has the potential to further enhance its city brand, making it more distinctive and appealing to diverse audience segments.

Suzhou's city brand is characterized by distinctive features stemming from four key components: its rich historical and cultural heritage, economic strengths, market potential, and the quality of life of its residents. This aligns with the city branding literature, which emphasizes the importance of historical and cultural elements, economic attributes, and quality of life in creating a compelling city brand (Yang et al., 2019; Zhou et al., 2020). By leveraging a combination of social media campaigns and online advertising initiatives, Suzhou has effectively utilized contemporary technologies to enhance its city brand image, which is consistent with the growing trend of using digital platforms in integrated marketing communication strategies for city branding (Kavaratzis, 2004; Zenker et al., 2017). This approach has successfully attracted both domestic and international tourists, encouraging exploration of its rich historical and cultural offerings. The success of Suzhou's strategies is reflected in increased engagement and improved brand awareness, which is aligned with previous research findings highlighting the effectiveness of IMC in enhancing city brand visibility (Aitken & Campelo, 2011; Šerić & Vernuccio, 2020).

To further elevate Suzhou's city brand, the proposed initiatives through IMC strategies involve a comprehensive approach, drawing from established city brand and IMC theories. This includes strengthening the synergy between online and offline channels, establishing a unified visual identity, and seamlessly integrating activities across these domains. These strategies are supported by IMC theory, which emphasizes the importance of consistency and coordination across communication channels (Schultz et al., 2010). Additionally, addressing potential challenges, emphasizing cultural heritage, learning from successful case studies, and employing audience segmentation strategies are crucial for refining and advancing the city's brand image, as highlighted by recent studies on IMC in city branding (Ng et al., 2023). By expanding on these approaches, this study contributes to the application and further development of IMC and city brand theory, offering a practical roadmap for cities like Suzhou to enhance their brand identity in a competitive global market.

Conclusions and Implications

This research study highlights several practical implications for city branding strategies. Suzhou's successful use of social media and online advertising underscores the importance of leveraging digital platforms to enhance a city's brand image. To build on this success, city planners and marketers should continue integrating their digital strategies with offline efforts, creating a unified and cohesive branding approach. This strategy not only attracts tourists, but also reinforces a city's global presence.

Investing in tourism resources and improving service quality is also critical. The positive impact of these areas on Suzhou City's brand suggests that other municipalities should prioritize similar investments to enhance their competitive edge. By focusing on these aspects, cities can strengthen their appeal and maintain a favorable brand reputation. Establishing a consistent visual identity across all marketing channels is another key takeaway. A unified visual representation helps reinforce the city's brand message and ensures that its unique attributes are clearly communicated. This consistency is essential for building a strong and recognizable city brand. Additionally, promoting Suzhou's historical and cultural heritage in marketing campaigns has effectively differentiated the city from other destinations. Emphasizing these unique aspects attracts tourists and solidifies the city's cultural identity, contributing to its overall brand strength.

For future research, longitudinal studies are needed to examine the long-term effects of integrated marketing communication strategies on city branding. These studies could provide insights into how branding strategies evolve over time, and their sustained impact on a city's image. Additionally, a quantitative research approach could be employed to confirm the variables involved in city branding and integrated marketing communication, allowing for a more robust analysis of their relationships and effects. Further research could also explore audience segmentation in greater detail. Understanding the specific needs and preferences of different target groups through quantitative methods can lead to more tailored and impactful marketing strategies.

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Teacher Burnout: Experiences of Thai Teachers Teaching English Language at a Faith-Based School in Thailand

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Abstract

Aim/Purpose: This study aimed to investigate burnout experienced by Thai nationals who teach English in a faith-based school. The study identified several specific challenges that caused burnout among these English teachers. Additionally, it examined the consequences of burnout on teacher performance, including their effectiveness in the classroom. The study also investigated what support is available for teachers that helped to prevent or reduce burnout.

Introduction/Background: Teacher burnout is a global crisis, with education professionals experiencing higher exhaustion rates than workers in many other fields. In the United States, teacher burnout is 59%, compared to 48% among other professionals. This pattern extends to Asian countries, where teachers in China, Malaysia, and Thailand report significant emotional exhaustion and loss of autonomy. Thai teachers, in particular, struggle with mental health challenges, including depression, anxiety, and stress. This situation is especially challenging for English teachers, who must manage heavy workloads, including class preparation, grading, student behavior supervision, and extracurricular activities. Poor work environments, low morale, insufficient trust among staff, and inadequate communication further exacerbate this burnout. English teachers face the additional challenge of teaching students with varying language skill levels in the same classroom, often without proper training for addressing these differences. The consequences of burnout include lower engagement levels, declines in teaching quality, increased staff turnover, and lower job satisfaction. Consequently, these impacts extend beyond professional performance and affect teachers' physical and emotional well-being, thus ultimately compromising student learning outcomes.

Methodology: The participants were selected based on Creswell's (2013) guidelines, which suggest that phenomenological research should typically involve a sample size of five to 25 participants. Six participants were selected through purposive sampling to ensure that the study included individuals who could provide relevant and valuable insights. Data was collected through phone interviews and Zoom meetings, allowing participants to share their experiences openly and flexibly. The data was analyzed using thematic analysis, which involved coding and interpreting the information provided by each participant. This process allowed researchers to identify repeated patterns, themes, and key points in the responses. Each participant's data was carefully reviewed and coded to capture the essence of their perspectives and experiences.

Findings: The findings revealed that the key challenges contributing to English teacher burnout included student-related issues such as poor attitudes toward learning, disruptive behavior in class, and changes in student learning behavior after the COVID-19 pandemic. Other factors that exacerbated burnout include excessive workloads, lack of support for professional development, and inadequate teaching materials, especially for new teachers who were coping with multiple roles simultaneously. The no-fail grading policy in the Thai education system became another stressor for teachers, as it allows for redoing assignments and retests. This system lowered teacher teaching motivation and student learning commitment. Family responsibilities were another challenge for teachers, especially when balancing schoolwork and duties at home, as this significantly impacted their professional effectiveness. The study also highlighted the negative impacts of teacher burnout

on teacher performance, as evidenced by reduced motivation to teach and a lack of class preparedness. This decline in teacher performance affects student learning, resulting in lower engagement in class. To cope with burnout, teachers opted for peer sharing and spiritual practices, such as prayer and worship group support, which emerged as essential pillars for addressing their emotional well-being.

Contribution/Impact on Society: This study investigated the burnout experienced by Thai nationals who teach English in a faith-based school. Its findings highlighted the challenges that caused teacher burnout, and showed how they affect performance. Additionally, it revealed the support that teachers received. The study gave recommendations to teachers and schools regarding ways for teachers to prevent or reduce burnout and have good well-being in the workplace.

Recommendations: Schools should promote policies focusing on teachers' well-being to address burnout, such as seminars addressing teaching methods and student behavior. School administrators should consider reducing some teachers' workloads and providing counseling services for students and teachers. In collaboration with other schools, efforts should be made to identify suitable and unsuitable textbooks, and to develop teaching materials so that teachers have the necessary resources for teaching.

Research Limitations: This study had several limitations; teacher burnout is a sensitive topic that made participants uncomfortable sharing deep information about their school experiences. Another limitation was the translation of information from Thai to English. The interviews were conducted in Thai to ensure that participants could freely express themselves; however, some nuances might be lost during the translation process, which could affect interpretation of the data.

Future Research: Future studies should use diverse and mixed research methods to understand burnout among English teachers. Additionally, research in Thai faith-based schools should focus on the unique experiences of teachers at various Christian schools. This approach may help to identify culturally relevant interventions to address burnout and improve teacher well-being. By exploring different perspectives and experiences, future studies may provide valuable insights that lead to more effective strategies and support systems for teachers in such settings.

Keywords: *Teacher burnout, faith-based schools, Thailand, English teachers*

Introduction

The term "burnout" describes the exhaustion experienced by human service professionals, and it has become associated with various fields, including education (Vandenberghe & Huberman, 1999). Literature from Maslach & Leiter (1999) and Schaufeli et al. (2017) described three key components of burnout as: (a) emotional exhaustion displayed in a lack of energy and emotional resources, (b) depersonalization described as having an adverse and detached reaction to others, and (c) reduced personal accomplishment manifested in decreased confidence in one's abilities and performance.

Therefore, burnout is a state of chronic stress characterized by physical and emotional exhaustion, poor performance, diminished productivity, and low self-confidence (Maslach, 2003). This condition affects employees in various professions, including teaching. According to Maslach and Jackson (1981), burnout is related to stress from work. It is manifested through symptoms such as emotional detachment and depression, and significantly impairs professional efficacy and overall well-being (Maslach & Leiter, 1999). In this study, it is essential to understand the challenges that are faced by teachers in faith-based schools.

Challenges contributing to burnout are often categorized into three areas: job and role characteristics, organizational characteristics, and personal traits (Cordes & Dougherty, 1993). Job characteristics include interpersonal dynamics and role ambiguity, where conflicting expectations can overwhelm teachers (Mealer et al., 2016). Organizational factors, such as inadequate rewards for performance and an unsupportive work environment, further exacerbate stress (Cho, 2020). Personal

characteristics, including demographic factors like age and teaching experience, also influence susceptibility to burnout, with social support as a buffer against stress (Nayernia & Babayan, 2019).

Background

Globally, teachers suffer from burnout more often than workers in other disciplines. In 2022, a study found that depression in teachers is steadily on the rise, with rates averaging 30.7% (Agyapong et al., 2022). Burnout affected 59% of United States teachers as compared to 48% from other professions. A Chinese study showed that 53% of preschool teachers in urban areas had high levels of emotional exhaustion and depersonalization (Li et al., 2020). Furthermore, one-third of teachers in Malaysia also experienced high burnout levels due to emotional exhaustion and depersonalization (Aeria et al., 2018). Similarly, in Thailand, teachers have faced mental health issues, including depression (3.2%), anxiety (11.2%), and stress (6.0%) (Ratanasiripong et al., 2021).

Several factors that lead to teacher burnout include a poor working or hostile school environment characterized by heavy workloads, low teacher self-efficacy, and the emotional exhaustion of teaching due to a lack of teaching skills (Lopez, 2017). Class-related challenges include the laborious nature of grading papers and the inability to manage challenging student behaviors, resulting in burnout (Gilmour et al., 2022; Miller, 2020). Other factors include the necessity to meet diverse expectations from administration and parents (WeiBenfels et al., 2022), characterized by low morale, lack of trust, and poor communication (Maslach & Leiter, 1997; Skaalvik & Skaalvik, 2007).

Contributing factors to burnout may also include organizational factors such as inadequate administrative support (Tomas, 2019) or insufficient financial rewards. Furthermore, stakeholder interactions and poor social support from colleagues or family can also exacerbate burnout.

English Teacher Burnout

English teachers face challenges like those faced by teachers of other subjects. However, they have the unique problem of inadequate teacher training in teaching English to students with different English skill levels in the same classroom (Cheng, 2022 & Rojburanawong, 2021). For example, some English teachers might struggle with using strategies for engaging both advanced and beginner students simultaneously, which can lead to stress and burnout.

Causes Contributing to Teacher Burnout in Faith-based Schools

Like public schools, various factors contribute to teacher burnout in faith-based schools. Lopez (2017) studied 25 Christian schools and found that personal and professional teacher characteristics were the reasons for teacher burnout. Belay et al. (2023) discovered that job-related stress, teachers' attitudes toward students, teachers' perspectives about their teaching, administrative support, and role ambiguity were some of the factors causing burnout. In addition, teachers in faith-based schools burn out because they do not understand how to implement certain practices. In a study of American Adventist school teachers, Burton et al. (2011) found that the teachers were overly stressed because they were unclear about the school's recommended innovative practices. Another study of 348 secular and Christian teachers about teacher burnout revealed that 22% of public school teachers had burnout, compared to 33% of Christian teachers. The authors concluded that student behavior patterns caused this higher rate of teacher burnout. Male teachers were burned out because of students' inattentiveness, and female teachers were stressed because of students' disrespect (Friedman, 1995).

Consequences of Burnout

Literature reveals the negative consequences of burnout, which include stress, anxiety, emotional exhaustion, and depression. Burned-out teachers experience decreased job satisfaction (Maslach & Leiter, 1997). When a school has a hostile environment, teachers have low morale, resulting in teacher attrition. D'Amiso (2023) indicated that more Catholic teachers exited the teaching profession than

public school teachers. Miller (2018) also acknowledged that public schools and Christian school teachers who were stressed out resigned within the first five years.

Teachers who were burnt out often displayed apathetic attitudes, decreased engagement, and diminished quality of instruction (Zhou & Wen, 2007), along with higher rates of teacher turnover (Skaalvik & Skaalvik, 2007). Teacher burnout affects their emotional and physical health, and negatively impacts students' learning outcomes as well (Rajavithi Hospital, 2024; Schaufeli et al., 2017). Consequently, teacher burnout leads to decreased job satisfaction (Maslach & Leiter, 1997) and absenteeism (Akyol & Demir, 2018), which may result in termination of employment.

Interventions and Strategies

Previous literature suggests strategies for dealing with burnout. These include mentoring, professional development in time management, mindfulness techniques, self-care (Akyol & Demir, 2018; Hoy & Spero, 2005; Skaalvik & Skaalvik, 2007), and workload audits to manage teacher workloads, all of which can improve work satisfaction. Administration can prioritize creating a positive school environment with open communication and collaboration to mitigate teacher burnout. A meta-analysis study across Asia, North America, Africa, and Europe by Agyapong et al. (2023) established 16 types of burnout reduction strategies, including Rational Emotive Behavioral Therapy, Inquiry-based stress reduction, Stress Management and Resiliency Training, Cyclic Meditation, Group Sand Play, Progressive Muscle Relaxation, Christian prayer, and reflection among others. It is well-documented that prayer can help alleviate anxiety and provide stability and peace (Koenig, 2013). Suttles (2024) suggested seeking support from social support groups, including support from one's immediate family, school, and the community, and spending time with family members to relieve stress. Those who identify with a community and church receive individual and spiritual support, strengthening a sense of purpose and the need to do better.

The above review integrates existing knowledge on teacher burnout. However, very few studies have dealt with Thai faith-based schools that discuss factors contributing to burnout, the impact of burnout, and how to intervene; this study aimed to fill this research gap.

Purpose of Study and Research Questions

In this study, we explored the burnout experiences of Thai nationals who teach English at faith-based schools in Thailand, identified challenges that cause burnout, and examined the effects of burnout on teaching performance. The following were the research questions for this study:

1. How do teachers define burnout?
2. What causes English teacher burnout at a faith-based school in Thailand?
3. How does burnout affect their work (teaching performance)?
4. What professional and emotional support do English teachers have?

Methodology

Qualitative Research Design

A qualitative descriptive phenomenological research design was used to explore the experiences of Thai English teachers in faith-based schools. The phenomenological approach was chosen for this study to gain insight into participants' lived experiences, and how they perceived these experiences (Alhazmi & Kaufmann, 2022). This phenomenological research design developed by Russell (2006) enables the data to speak for itself without influence by the researcher.

Participant Sampling

Purposive sampling was used to select teachers who could provide in-depth information about teacher burnout, guided by Creswell's (2013) recommendation for phenomenology research sampling of five to 25 participants. As Palinkas et al. (2013) suggested, the criteria for selecting participants included those who had experienced the phenomenon, their availability, and their willingness to participate in the study. The selection criteria were: (a) Thai nationals teaching English as a second

language, and (b) at least two years of teaching experience in the school, with an understanding of the program and organizational system.

Six Thai English teachers from a faith-based high school in Thailand participated. The average teaching experience was 13 years, while ranging from 7 to 23 years. While primarily English teachers, they occasionally taught other subjects.

Data Collection

Data collection was through interviews. The interview protocol was aligned with the research questions; the open-ended semi-structured questions allowed participants to share their perspectives. Participants were contacted by email and phone and asked about their availability. A consent form stating the purpose of the study, duration of the interview, and data handling procedures of the research was sent to each participant. Before the interviews, the participants were informed of their rights to withdraw if they did not want to continue. The interviews were conducted in Thai to ensure that participants could freely express themselves. Each interview was audio recorded, transcribed, and translated into English. The translated transcripts were sent to participants to review and confirm the data accuracy. The data was encrypted for confidentiality, and participants were given pseudonyms to protect their privacy.

Data Analysis

The data analysis began after the first interview. Using inductive coding, the transcripts were read and coded line by line and paragraph by paragraph, looking for patterns within the data. Coding is commonly used to organize data with similar meanings, allowing researchers to identify and categorize the findings into themes (Stuckey, 2015).

To ensure the trustworthiness of findings, the researcher used bracketing to minimize influencing the research results. Reflecting on known biases throughout the data collection and analysis processes helped to inhibit ideas that could muddle the findings. Memos were written to document findings that were surprising or confusing. Participants were allowed to check the data. The findings were peer-reviewed by experts from Asia-Pacific International University.

Findings

The findings are divided into three sections: a brief discussion of the demographics and individual participants' experiences and views of burnout, emergent themes from data analysis, and findings clustered according to the research questions.

Demographics and Views of Burnout

Teacher Ratee has worked at her school for 7 years, teaching Basic English to high school students. She described burnout as emotional and physical exhaustion due to insufficient time to prepare lessons or materials for teaching English. A lack of student motivation and their aggressive behavior intensified her stress. She found support from colleagues and spiritual practices.

Manee, who has 7 years of teaching experience covering Basic English and other subjects, shared her burnout experience, which manifested itself in boredom and fatigue, especially during remote teaching due to COVID-19. She found support from her school community by participating in spiritual practices.

Saifon has worked for 8 years, and perceives burnout as stress, exhaustion, and lack of motivation. Her experience included being overwhelmed by her workload and the challenges of catering to students from diverse backgrounds with varying levels of comprehension. She found relief in spending time with family and sharing experiences with colleagues.

Laila, who has worked for 11 years teaching reading, writing, listening, speaking, and Basic English, viewed burnout as stress and fatigue affecting her health. She juggled multiple responsibilities and faced student challenges. She found support from friends and used prayer to alleviate burnout.

Mongkhon has taught Basic English speaking, listening, and reading to high school students for 20 years. He described burnout as emotional and physical fatigue, manifesting itself in monotonous work that led to disinterest. He faced student challenges, a lack of support, and problems with textbook adaptation. Despite these challenges, he continued teaching out of financial necessity.

Sicha has taught elementary conversation and vocabulary at her school for 23 years. She identified burnout as working with student stubbornness for prolonged periods. Despite these challenges, her love for teaching persisted, driven by the joy of students who could eventually speak English successfully.

The data analysis showed that English teachers defined and viewed burnout through the prism of their stress and emotional exhaustion. Their mental fatigue sometimes led to reduced motivation and, in severe cases, a desire to disengage completely. Additionally, participants viewed burnout as physical exhaustion from extended work periods and repetitive tasks, potentially resulting in health problems over time. However, apart from similarities in defining burnout, the insights gathered from the six participants revealed a wide range of experiences related to teacher burnout.

Emergent Themes

Several themes emerged from the analysis of English teacher burnout in Thailand: Causes of English Teacher Burnout, Impact on Teaching, Social Support, and Motivation to Teach Students.

Causes of English teacher burnout. Several key factors contributing to burnout among English teachers were identified during the data analysis process, with workload and administrative duties being primary concerns. Teachers face overwhelming responsibilities— particularly new teachers who must juggle multiple roles simultaneously. Teacher Mongkhon exemplified this through his experience as "a homeroom teacher" who cares for students, manages their behavior, and reports to the administrator. He further detailed his responsibilities, stating he was "assigned to take care of some extracurricular activities ... to be the head Pathfinder who ... organized the lesson schedule for every teacher." His extracurricular responsibilities contributed significantly to teacher burnout.

Specialized support for teachers was a challenge that emerges from the analysis. One significant area included teaching and learning resources. English textbooks and other resources need to be developed that are relevant for Thai schools. While other departments could access teaching materials locally or from around Asia, English teachers had to prepare their teaching materials, leading to physical exhaustion. Second, textbooks focused heavily on Western cultural references, creating difficulties and making the content irrelevant to students' cultural backgrounds. This cultural disconnect hindered student comprehension and engagement. Teacher Ratee highlighted these resource constraints, stating, "To be honest, we did not have any budget for teaching media" resulting in her having to prepare the media by herself, as she noted, "We had to do it ourselves." Her words underscored the lack of financial resources for teaching materials, leaving teachers to rely on their ingenuity.

The Thai educational system's "no-fail grading" policy became another significant teacher stressor. This policy, which allows unlimited retests and assignment redos, undermined teacher motivation and student commitment to learning. Teacher Saifon highlighted a concerning trend among students who lacked motivation to study and merely aimed to pass tests by "redo[ing] the test to pass ... without gaining ... any knowledge." She expressed her belief that the Thai Government needs to address this issue, as it deters some students from putting sufficient effort into learning.

Balancing family issues and work presented another level of challenge for teachers. The demands of family responsibilities significantly impacted their professional effectiveness, as illustrated by Teacher Laila, who shared her experience of balancing teaching responsibilities with family obligations. She stated, "Besides the work of teaching, I still deal with the whole family, children, and grandchildren; it makes me tired." This overlap between personal and professional responsibilities often increases stress and diminishes teaching quality.

Student attitudes and behavior posed persistent challenges for teachers, particularly regarding negative perceptions towards learning English. Teachers faced resistance to their instructions and claims of teacher bullying when giving feedback. The COVID-19 pandemic exacerbated these issues, leading to increased disinterest and decreased respect for teachers. Teacher Ratee reflected on these challenges, emphasizing that "every child will block their mind of learning English." She highlighted the discouragement that students expressed when they perceive themselves as lacking proficiency in English, noting that they often tell her, "Teacher, I am not good in English." She observed that this sentiment usually led to a disinterest in studying English altogether, and stated, "When they said they are not good at English, they already do not want to study."

Impact on teaching. The impacts of teacher burnout were manifested in various ways, primarily affecting teaching quality. Teachers who experienced burnout often created uninspiring lesson plans, showed reduced student engagement, and demonstrated a diminished ability to provide individualized attention. Teacher Ratee conveyed a sense of resignation regarding her limitations when tired, expressing that she would teach the required material, but left the rest of the learning up to the students themselves, as she stated, "I would teach what I needed to teach, how much you would learn was up to you."

The impact on students was equally significant, resulting in reduced motivation and engagement across all performance levels. Teacher Saifon described the effect of her burnout on student engagement, noting that "sometimes when I feel weary, it affects my relationship with the students. When I lack energy and am unmotivated, my feelings transfer to the students. You can see they feel the same way. They have no enthusiasm for learning." Students perceived the teacher as a passive medium; they also remained as inactive as the teacher. Furthermore, she mentioned that "my stress affected my teaching. My instruction also became boring" for students. Teacher Saifon shared similar experiences, noting that her anxiety and fatigue made her feel "unenergetic in teaching," which impacted her students' experiences. She elaborated, "Because you do not feel energetic and active, it also makes the students feel the same." Teacher Ratee reflected on how her fatigue affected her ability to provide individualized attention, stating, "It made me less likely to monitor the child when I am tired." She observed, "Some children would start to disappear from class; even though they were good at studying, they started to lose interest."

The analysis also showed that students' self-perception made it difficult for English teachers to instruct them. Teacher Ratee faced this challenge. She warned the whole class. However, students who were at "fault ... would complain that ...they did not do anything wrong" and questioned why they needed to be included in the class warning. She reflected on the shifting dynamics of authority and autonomy, noting, "Today's students are not like our times." While few teachers explicitly acknowledged institutional impacts, the effects of burnout on schools were significant. Mongkhon emphasized this: "When evaluating the semester or year level, the teaching was terrible. Anything like this would have lowered the school's score as well."

Social support. Teachers found effective coping mechanisms through colleague support and spiritual practices. The school facilitated this through organized prayer groups and weekly family visits, creating a supportive community environment. Teacher Laila highlighted holding worship services at teachers' houses every Wednesday evening as a significant source of encouragement, stating, "At the teacher's house, there were worship services in each house on Wednesday. This was a very encouraging thing for us." This collaborative approach helped teachers to collectively address challenges while maintaining their well-being.

Motivation to continue teaching. Teachers' motivation to continue in their profession stemmed from two primary sources. The first was financial necessity, which Teacher Mongkhon metaphorically compared to "a pot of rice," implying that he felt trapped or obligated to continue working despite experiencing burnout. The second source was a genuine passion for teaching, exemplified by Teacher

Sicha, who expressed a deep-seated passion for education and a genuine love for her students' growth and development. Despite facing challenges and burnout, her heart remained dedicated to the profession, as she said, "My heart still loves to teach children and wants to see the child's development."

Discussion

The discussion is organized according to the research questions below.

Question 1: How do Teachers Define Burnout?

Through data analysis, English teachers described burnout as stress and mental and physical fatigue due to prolonged work under strict time constraints, leading to emotional exhaustion and diminished motivation, echoing Maslach's definition of burnout (Maslach, 2023). Burnout hampers work effectiveness due to stress and excessive workload, potentially resulting in physical exhaustion. Untreated burnout symptoms can exacerbate or manifest themselves as physical health issues (Mealer et al., 2016). Similarly, Amin et al. (2024) characterized burnout as physical, mental, and emotional exhaustion from workplace stress.

Question 2: What Causes English Teacher Burnout at a Faith-Based School in Thailand?

English teachers faced several challenges that led to burnout at school and home. These challenges included dealing with many responsibilities, misbehaving students, and unmotivated students who did not want to learn English. The Thai educational system presented another challenge, as teachers needed to follow the system while maintaining academic standards. Some of them also faced significant family challenges.

Teacher workload proved particularly challenging for English teachers, extending beyond teaching to include class preparation, grading, student advising, and overseeing extracurricular activities, which can contribute to burnout (Atmaca, 2017). Challenges involving students, administrators, parents, or colleagues also exacerbated burnout, although colleagues' support was noted as beneficial (Cesur, 2021). The primary challenges contributing to burnout among English teachers were attributed to the educational system, which encompasses time constraints, heavy workloads, and management of system changes (Cesur, 2021).

Teachers expressed concerns about the school's insufficient support for English instruction, particularly regarding tailored teaching resources and materials. The absence of specialized support necessitated that teachers independently create all materials, increasing workloads and contributing to physical exhaustion. This highlights Cheng's (2022) assertion that English teacher burnout could be exacerbated by a lack of institutional support, including inadequate financial rewards, insufficient training in student management, and unfavorable workplace conditions.

Teachers raised concerns about the Thai educational system's no-fail grading policy, which allowed students to pass tests and assignments regardless of their performance, potentially reducing student motivation to study (Brown, 2017; Stefanie, 2024). This approach posed challenges in sustaining student interest and overcoming cultural disparities in textbooks, hindering comprehension and engagement with the material. Brown (2017) noted that this policy mismatched low-performing students with higher-grade curricula, leading to declining performance. Stefanie (2024) highlighted the policy's adverse effects on engaged learners due to the presence of disinterested and disruptive students.

Family challenges emerged as a significant social aspect contributing to English teachers' experiences with burnout. Prior research has also indicated that teachers contend with family issues while managing school-related difficulties. These familial concerns may spill over into the classroom, impacting the teacher's ability to teach effectively and affecting student learning. Sajid et al.'s (2021) findings revealed that as work-family conflict increased, children's performance decreased.

Student issues emerged as the main challenges causing teacher burnout in faith-based schools. All teachers reported problems with student misbehavior and poor attitudes toward English language

learning. Cheng (2022) also highlighted demotivated and misbehaving students as major predictors of English teacher burnout. Huk et al. (2019) found that student disrespect and inattentiveness predicted teacher emotional exhaustion and depersonalization burnout. The COVID-19 pandemic exacerbated student disengagement, as observed in Bhalla et al.'s (2023) study, where students' reliance on electronic devices led to decreased motivation and poor focus.

Question 3: How Does the Burnout Affect Their Work (Teaching Performance)?

Teacher burnout not only affects teachers, but also significantly impacts students and institutions. It often leads to uninspired lesson plans, decreased classroom engagement, and a lack of follow-up on student's progress, resulting in reduced student learning and performance. Wang (2022) highlighted that burnout contributes to ineffective classroom management and poor academic performance among students. Additionally, students may lose motivation and become less responsible for their studies when they witness their teachers' lack of enthusiasm.

Question 4: What Professional and Emotional Support Do English Teachers Have?

This study underscored the importance of collaborative support systems among teachers to cope with stress and burnout. Sharing concerns with colleagues offers emotional comfort and practical guidance, fostering a supportive atmosphere wherein challenges could be collectively addressed. This finding is aligned with Putri's (2022) research, which emphasized the significant role of support from colleagues or supervisors in reducing teacher burnout. Furthermore, the study revealed the importance of spiritual practices, particularly prayer, in nurturing teachers' well-being in faith-based schools. The school's proactive measures, such as establishing prayer groups and scheduling weekly family visits, enhanced this support network, contributing to teachers' overall mental and emotional resilience.

Conclusion

Various challenges that English teachers face which contribute to burnout are highlighted in this study. These challenges include student attitudes, disruptive behavior, self-perception, and diverse backgrounds. Additionally, teachers struggle with family issues, heavy workloads, and the structure of the Thai educational system.

Teacher burnout can significantly impact the quality of teaching. It often results in uninspiring lesson plans and a lack of classroom engagement, decreasing student learning. Burnout can lead teachers to neglect their duties and underperform, reducing their ability to support and educate students effectively.

Burnout negatively affects teacher performance, student learning, and overall school outcomes. However, colleagues, family, and school support can help mitigate these effects. Despite considering leaving the profession, some teachers have continued to teach due to financial necessity. Teacher burnout in Thai faith-based schools is complex, with multifaceted causes and significant consequences. By addressing contributing factors and implementing effective interventions, schools can create a more supportive and sustainable environment for their teachers.

Limitations of the Study

This study had several limitations. First, teacher burnout is a sensitive topic that involves teachers' individual experiences that are affected by the school. Participants were uncomfortable discussing information that painted a negative picture of their school. Another limitation was the translation of data from Thai to English. The interviews were conducted in Thai, the native language of the participants, to ensure that the teachers could express their thoughts and experiences comfortably and accurately. However, some nuances may have been lost while translating the data into English.

Recommendations

To address the multifaceted issues that cause burnout, schools should develop policies for teachers' well-being, including seminars where teachers discuss problems and how to cope with students' negative behaviors. In addition, administration should reduce teachers' workloads or employ more teachers. Apart from spiritual practices at the school, the administration should provide counseling services for both students and teachers.

Providing appropriate teaching resources is key to effective teaching and learning. Therefore, the school should collaborate with other teachers or schools to solve the problem of foreign textbooks that are unsuitable for the Thai context. Training in developing teaching materials should also be a yearly undertaking to ensure teachers have the necessary resources.

Future studies should consider employing diverse or mixed research methods, which would provide a better understanding of burnout among English teachers. In addition, future research in Thai faith-based schools should explore the specific experiences of teachers at multiple Thai Christian schools to identify culturally relevant interventions.

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The Effect of Service Fairness and Service Quality on Customer Satisfaction and Loyalty: A Case of Mobile Financial Applications in Phnom Penh

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Abstract

Aim/Purpose: This study examined how service fairness and SERVQUAL dimensions influenced customer satisfaction and loyalty in mobile financial applications (MFAs) in Phnom Penh, Cambodia. As digital transformation reshapes financial services, understanding these factors is crucial for improving user experiences and fostering long-term engagement.

Introduction/Background: Mobile financial applications (MFAs) have become an essential part of Cambodia's urban financial ecosystem by providing accessible and cost-effective financial solutions. Despite their increasing usage, limited research exists on the factors influencing customer satisfaction and loyalty in this sector. This study aimed to bridge this gap by examining how service fairness dimensions (distributive, procedural, interpersonal, and informational) and SERVQUAL dimensions (reliability, responsiveness, assurance, and empathy) impacted customer satisfaction and loyalty.

Methodology: A quantitative research methodology was employed to explore the relationships among service fairness, SERVQUAL factors, customer satisfaction, and loyalty. The study targeted individuals aged 18 and above who actively use MFAs in Phnom Penh. Due to the absence of precise population data, stratified purposive sampling was used to ensure diverse representation across Phnom Penh's districts. Using Cochran's formula with a 95% confidence level and a 5% margin of error, the study aimed for a sample size of 400 respondents, but 560 surveys were distributed to enhance reliability, yielding 470 valid responses. Data collection took place between May and July 2024 through online surveys and self-administered questionnaires distributed across various digital platforms.

The survey instrument was structured into four key sections: demographic information, MFA usage experience, behavioral factors, and service fairness/SERVQUAL dimensions, which were measured on a five-point Likert scale. Survey items were adapted from prior studies to ensure measurement reliability and validity. The questionnaire was pretested with 30 respondents, and refinements were made to improve clarity and relevance. Advanced statistical techniques were used to analyze the data. Descriptive statistics provided an overview of respondent demographics and usage behavior. Cronbach's Alpha was employed to assess reliability, while Confirmatory Factor Analysis (CFA) validated the construct dimensions. Structural Equation Modeling (SEM) was utilized to test the relationships among service fairness, service quality, customer satisfaction, and loyalty, with results presented through detailed statistical models and tables.

Findings: The study revealed that both service fairness and SERVQUAL dimensions significantly influenced customer satisfaction, which, in turn, drives customer loyalty. Among service fairness dimensions, distributive and procedural fairness had the strongest effects on satisfaction, highlighting the importance of transparent processes and fair service outcomes. Customers responded positively to equitable resource allocation and well-structured procedural guidelines. Regarding SERVQUAL dimensions, responsiveness and assurance emerged as the most influential factors shaping customer satisfaction. Customers highly valued prompt responses to inquiries and the expertise and reliability of service providers. While empathy contributed to satisfaction, its impact was comparatively less pronounced. Customer satisfaction was found to mediate the relationships between service fairness, service quality, and loyalty. This underscored the necessity of fostering positive user experiences to

enhance long-term customer retention and loyalty. The findings suggest that MFA providers should prioritize procedural fairness and responsiveness to optimize customer satisfaction and long-term engagement.

Contribution/Impact on Society: This study provides empirical evidence of the role of service fairness and SERVQUAL factors in shaping customer satisfaction and loyalty in the Cambodian MFA market. While previous research has examined these factors in other industries, this study uniquely focused on MFAs in a developing Southeast Asian context. The findings emphasize the importance of fair service design and high-quality service delivery in building customer trust and loyalty. By implementing transparent service processes and prioritizing customer support quality, MFA providers can foster financial inclusion and promote sustainable business growth in emerging markets.

Recommendations: For MFA providers, the study recommends emphasizing transparency, equitable service outcomes, and efficient customer support to enhance satisfaction and trust. Specifically, providers should:

- Improve distributive and procedural fairness by implementing clear, transparent, and fair resource allocation policies.

- Enhance responsiveness by ensuring customer inquiries are addressed promptly and effectively.

- Strengthen assurance through professional training programs that enhance staff expertise and reliability.

- Invest in customer service training to improve staff empathy and engagement with users.

- For researchers, further exploration into additional variables such as trust, security, and digital literacy could offer a more comprehensive understanding of MFA user behavior.

Research Limitation: This study had several limitations. Its cross-sectional research design captured data at a single point in time, limiting the ability to infer causal relationships. Additionally, the study focused exclusively on Phnom Penh, restricting the generalizability of findings to other regions or countries. The reliance on self-reported data may have introduced potential bias, including social desirability bias. Future studies should adopt longitudinal designs and include a broader geographic scope to enhance research validity.

Future Research: Future studies should expand on this research by incorporating additional factors such as perceived security, trust, and digital literacy to provide deeper insights into customer satisfaction and loyalty in MFAs. Comparative studies across different regions or countries could reveal cultural differences in how service fairness and quality affect customer perceptions. Additionally, longitudinal studies tracking changes in satisfaction and loyalty over time would provide a dynamic perspective on user behavior and evolving service expectations.

Keywords: *Service fairness, SERVQUAL, customer satisfaction, customer loyalty*

Introduction

Mobile financial applications (MFAs) have revolutionized financial services, enabling users to access various functions via mobile phones (Bacamante & Campos, 2024). Their rapid acceptance has turned out to significantly boost financial accessibility in developing regions where traditional banking was one of the most important, but least efficient, sectors. MFAs have improved fast and safe transactions, especially during the pandemic due to the need for touch-free financial systems (Hasan & Sony, 2023). MFAs increased digital financial activities worldwide and improved financial inclusion and stability, resulting in the heightened use of digital banking services.

Cambodia's financial sector is developing fast, with most of the population still outside the coverage of banks, which brings a huge market for MFAs. MFAs are essential in linking financial institutions with unbanked segments and help develop the economy at both the individual and societal level. As of the end of 2022, licensed payment service providers in Cambodia reported more than 19.5 million active e-wallets, accounting for more than USD \$272.8 billion worth of transactions, which was almost nine times the gross domestic product of the country (Chea, 2023). Such tendencies were most evident in

the capital city, Phnom Penh. New developments, such as Bakong, a peer-to-peer fund transfer service introduced by the National Bank of Cambodia, have enhanced the development of cashless payments, consequently contributing to growth and attracting international interest. The adoption of MFAs in Phnom Penh has significantly improved financial inclusion and banking accessibility, particularly for the unbanked.

However, despite their economic impact, MFAs face challenges in customer satisfaction and loyalty. As cashless payments grow, our understanding of consumer behavior, satisfaction levels, and service quality dimensions—reliability, responsiveness, assurance, and empathy—has remained limited. Additionally, the role of service fairness, including distributive, procedural, interpersonal, and informational fairness, in shaping satisfaction and loyalty has been underexplored. These gaps have hindered service enhancement and customer retention, both of which are vital for the industry's sustainable growth. Academically, the relationship between service fairness, service quality, satisfaction, and loyalty in developing markets remains largely unexamined. Economically, insights from such research can help MFA providers in Phnom Penh develop strategies to enhance customer satisfaction and loyalty, supporting broader financial inclusion and economic development in Cambodia.

The objectives of the research have been narrowed to ensure actionable goals by clearly outlining the analytical techniques used as follows:

1. To determine the effect of service fairness dimensions on customer satisfaction with the aid of Partial Least Squares Structural Equation Modeling PLS-SEM.
2. To examine the relationship between dimensions of service quality and customer satisfaction.
3. To assess the mediating effect of customer satisfaction on the link between service fairness perceptions, service quality dimensions, and customer loyalty by using bootstrapping procedures for mediation analysis.

Literature Review

Interpersonal Fairness

Interpersonal fairness, distinguished by the respectful treatment of individuals, and informational fairness, related to the clarity of communication, greatly impact customer satisfaction in MFAs (Hadi et al., 2020). Interpersonal fairness also builds loyalty and love to serve customers as an intermediary of service performance and service satisfaction (Geebren & Jabbar, 2021). It has also been established that interpersonal fairness is a key predictor of customer loyalty due to its impact on satisfaction (Rahman et al., 2019). Particularly, courtesy in MFAs interactions strengthens trust and satisfaction, leading to increased loyalty (Hossain et al., 2021). Furthermore, satisfaction has been reported to mediate the relationship between interpersonal fairness and loyalty, reaffirming its importance in any service marketing (Devi & Yasa, 2021).

Based on these findings, the study proposed the following hypotheses:

H_1 : Interpersonal fairness positively influences customer satisfaction.

H_{1a} : Customer satisfaction positively mediates the relationship between interpersonal fairness and customer loyalty.

Informational Fairness

Informational fairness pertains to the provision of correct explanations of reasons and processes that significantly impact the service that customers receive (Kohsuwan & Lawkobkit, 2013). In MFAs where users are reliant on available information for their choices, informational fairness is one of the most important aspects in the improvement of customer satisfaction (Uddin & Nasrin, 2023). It has been suggested that strategy as well as ethical components are associated with this, and it has been observed that good communication enhances results in trust and satisfaction (Collier & Esteban, 2007). Furthermore, sufficient information and understanding of the business processes also reinforces loyalty. For instance, according to Rai et al. (2022), sufficient qualitative information provided by FedEx increased the level of satisfaction and, as a result, improved customer loyalty. For MFAs users,

notification of transactions and fees enhances trust, satisfaction, and the formation of the intention to be loyal (Omar et al., 2021).

Based on these findings, the study stated the following hypotheses:

H_2 : Informational fairness positively influences customer satisfaction.

H_{2a} : Customer satisfaction positively mediates the relationship between informational fairness and customer loyalty.

Distributive Fairness

Distributive fairness focuses on customers' views regarding the end products or the outcomes they receive, especially when there is a service failure (Sofiana & Prihandono, 2019). Based on equity's proportionality, distributive fairness uses the notion of comparing oneself to others in regard to whom has received resources or the best outcome (Krishna et al., 2011). In the context of MFAs, fair pricing and rewards of services are essential for developing satisfaction. For instance, Mushagalusa et al. (2022) found that price fairness positively determined consumer trust and consumer switching intentions. As per Geebren et al. (2021), the more fairness is perceived in the distribution of resources, the higher the satisfaction and loyalty among mobile banking users. Similarly, procedural justice theory regards fair distribution of outcomes as highly effective in promoting retention. It has also been demonstrated that users' satisfaction and intentions to be loyal to the MFAs increase when service pricing and distribution are comprehensive and fair (Hossain et al., 2021).

Based on these findings, the following hypotheses were tested:

H_3 : Distributive fairness positively influences customer satisfaction.

H_{3a} : Customer satisfaction positively mediates the relationship between distributive fairness and customer loyalty.

Procedural Fairness

Procedural fairness is about people's understanding of procedures, the manner and style of their application, and the decisiveness of the outcomes in relation to the targets (Jung et al., 2017). In the MFAs sector, Uddin and Nasrin (2023) remarked that fair procedures help form trust and satisfaction, with procedural fairness as a core component of user satisfaction. These findings were further endorsed by Bacamante and Campos (2024), who found that risk perceptions in mobile banking could be decreased by operationalizing objective and transparent procedures, thus enhancing customer satisfaction levels. Satisfaction and loyalty are strengthened by fair processes, and this is one approach for retaining customers (Devi & Yasa, 2021). Fairness in conflict resolution processes, and particularly in transaction approval processes, leads customers to higher satisfaction levels and subsequently higher loyalty intentions (Molinillo et al., 2022; Omar et al., 2021). From the findings of these studies, this relationship has been established both in the banking and in the electronic business sectors, where satisfaction acted as a mechanism by which procedural fairness influenced customer loyalty.

Based on these findings, the following hypotheses were framed:

H_4 : Distributive fairness positively influences customer satisfaction.

H_{4a} : Customer satisfaction positively mediates the relationship between procedural fairness and customer loyalty.

The SERVQUAL Model and Customer Satisfaction

The SERVQUAL model is a widely recognized framework for evaluating service quality by measuring the gap between customer expectations and perceived service performance. The model initially identified ten dimensions, which were later refined into five key constructs: reliability, responsiveness, assurance, empathy, and tangibles. These dimensions serve as critical indicators of service quality across various industries, including MFAs (Parasuraman et al., 1988). In the context of MFAs, *Reliability* refers to the system's ability to perform transactions accurately and dependably, ensuring consistent service delivery that enhances user satisfaction. *Responsiveness* captures the promptness and willingness of service providers to assist customers, addressing their inquiries efficiently and fostering

positive user experiences. *Assurance* encompasses the knowledge, competence, and courtesy of service providers, which build customer confidence in the platform's security and professionalism. *Empathy* reflects the personalized attention and care provided to users, meeting their unique needs and strengthening their emotional connection with the service.

Empirical studies have demonstrated the significance of these dimensions in enhancing customer satisfaction and loyalty in MFAs. For instance, Singh (2019) highlighted that reliability and responsiveness significantly contribute to user satisfaction in mobile banking services. Similarly, Zariman et al. (2022) emphasized the importance of reliability and empathy in fostering customer trust and long-term loyalty in mobile payment platforms. Sharma et al. (2024) further underscored the need for continuous improvements in service assurance to meet evolving customer expectations. Moreover, Rahman et al. (2019) found that four SERVQUAL dimensions—reliability, responsiveness, assurance, and empathy—positively influenced customer satisfaction, whereas tangibles had a less significant impact in the mobile banking sector. These findings highlight the importance of leveraging SERVQUAL to bridge service quality gaps, ultimately enhancing customer satisfaction and loyalty in MFAs.

Based on the literature review, the following hypotheses were proposed:

H_5 : Reliability positively influences customer satisfaction.

H_6 : Responsiveness positively influences customer satisfaction.

H_7 : Assurance positively influences customer satisfaction.

H_8 : Empathy positively influences customer satisfaction.

Customer Satisfaction Positively Mediates Relationships between *SERVQUAL* Model and Customer Loyalty

Reliability, defined as the ability to consistently deliver services as promised, is a fundamental determinant of service quality (Parasuraman et al., 1988). In the context of MFAs, reliability refers to the system's ability to function seamlessly and execute user transactions accurately. Reliable service fosters customer trust, leading to higher satisfaction levels, which in turn encourages customer loyalty and discourages switching behavior (Molinillo et al., 2022). Responsiveness, the provider's readiness to assist, is key to service quality in MFAs. It involves efficient support, timely issue resolution, and proactive communication. Research shows that responsiveness boosts satisfaction, fostering loyalty through repeat use and positive word-of-mouth (Ismail et al., 2021). Assurance refers to the knowledge, competence, and courtesy of service providers that instill customer trust and confidence. In the MFA sector, assurance encompasses factors such as platform security, professional customer service, and compliance with regulatory standards. A high level of assurance enhances customer confidence, leading to greater satisfaction and long-term loyalty (Ludin & Cheng, 2014). Empathy, the ability to understand and address customer needs, is crucial in MFAs. It is reflected in personalized services, user-friendly design, and tailored support. Research shows that when customers feel valued, satisfaction rises, driving loyalty and long-term engagement (Kim et al., 2021).

Based on these results, the following hypotheses were proposed:

H_{5a} : Customer satisfaction positively mediates the relationship between reliability and loyalty.

H_{6a} : Customer satisfaction positively mediates the relationship between responsiveness and loyalty.

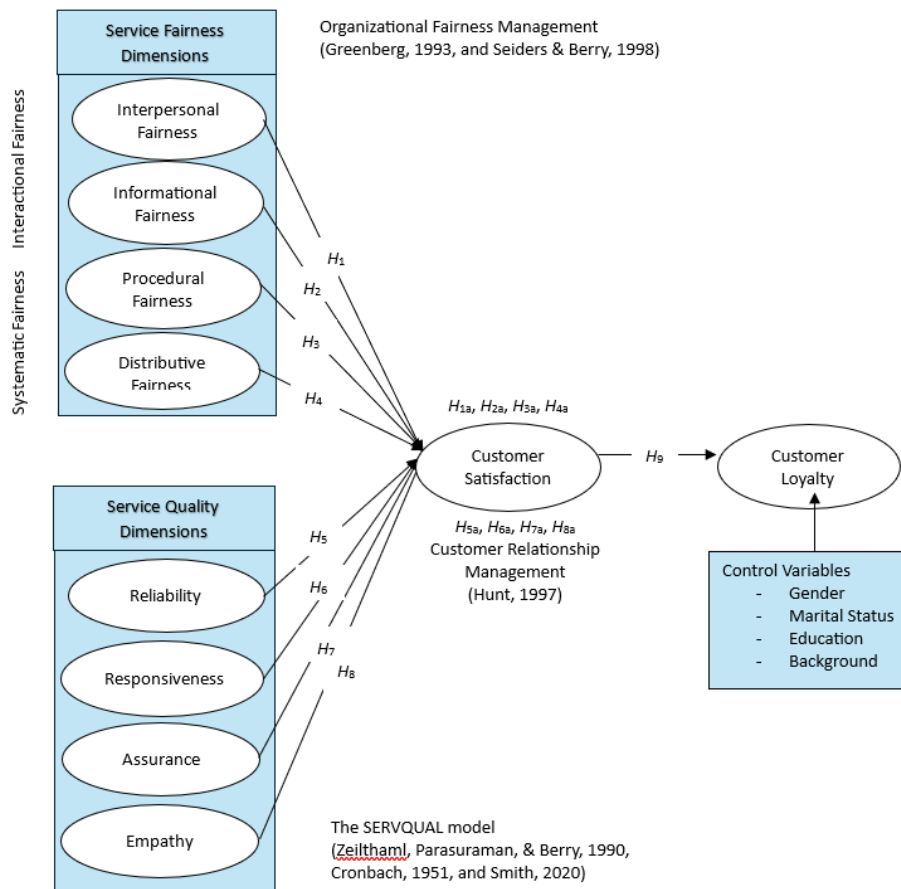
Therefore, the following hypothesis was formulated:

H_{7a} : Customer satisfaction positively mediates the relationship between assurance and loyalty.

H_{8a} : Customer satisfaction positively mediates the relationship between empathy and loyalty.

Figure 1 illustrates the research framework, outlining the relationships between service fairness, service quality, customer satisfaction, and loyalty. It portrays how fairness (distributive, procedural, interpersonal, and informational) and quality (reliability, responsiveness, assurance, and empathy) were thought to influence satisfaction and loyalty. Additionally, it examines customer satisfaction as a mediator, providing a comprehensive analysis of loyalty drivers in mobile financial applications.

Figure 1 Conceptual Framework



Methodology

This quantitative study used a structured survey to collect data from MFA users; it was divided into three sections: demographics, purchasing behavior, and adapted scale questions. The survey was translated into Khmer using a back-translation technique. The target population included customers over 18 who had used a Mobile Financial Application in Phnom Penh. A pilot test with 30 respondents assessed reliability and validity, followed by a Cronbach's alpha test and Exploratory Factor Analysis.

The survey data were analyzed using PLS-SEM with WarpPLS 8.0 to test hypotheses and maximize variance in the dependent constructs; this was done due to the small sample size and non-normal distribution. Pre-analysis checks ensured data quality, including construct validity and reliability, and the absence of multi-collinearity and common method bias. Descriptive statistics and Cronbach's alpha assessed demographics and reliability, while hypotheses were tested via multiple regression. Table 1 shows that composite reliability and Cronbach's alpha values ranged from .756 to .858, indicating strong internal consistency. Full collinearity tests showed a maximum VIF of 1.693, confirming no multi-collinearity or common method bias.

Table 1 Results of Confirmatory Factor Analysis

Fit Indices	IPF	INF	PF	DF	R	RS	A	E	CS	CL
CR	.862	.845	.864	.876	.891	.904	.860	.882	.856	.884
CA	.786	.756	.789	.809	.837	.858	.782	.821	.775	.824
VIFs	1.341	1.440	1.413	1.587	1.578	1.533	1.693	1.596	1.545	1.532

Note. Author's Calculations, IPF = Interpersonal Fairness, INF = Informational Fairness, PF = Procedural Fairness, DF = Distributive Fairness, R = Reliability, RS = Responsiveness, A = Assurance, E = Empathy, CS = Customer Satisfaction, and CL = Customer Loyalty.

The factor loadings of all measurement items in Table 2 range from .700 to .874, surpassing the .70 threshold and indicating strong associations with their constructs.

Table 2 *Convergent Validity (Factor Loadings, CR, and AVE)*

Variables	Item	Factor Loadings	Average Variance Extracted (AVE)	Composite Reliability (CR)
Interpersonal Fairness	IPF1	.825	.611	.862
	IPF2	.783		
	IPF3	.815		
	IPF4	.700		
Informational Fairness	INF1	.772	.578	.845
	INF2	.780		
	INF3	.762		
	INF4	.725		
Procedural Fairness	PF1	.808	.613	.864
	PF2	.787		
	PF3	.759		
	PF4	.777		
Distributive Fairness	DF1	.866	.639	.876
	DF2	.821		
	DF3	.793		
	DF4	.708		
Reliability	R1	.848	.672	.891
	R2	.812		
	R3	.818		
	R4	.800		
Responsiveness	RS1	.851	.702	.904
	RS2	.864		
	RS3	.813		
	RS4	.823		
Assurance	A1	.856	.607	.860
	A2	.789		
	A3	.741		
	A4	.723		

The Average Variance Extracted (AVE) values ranged from .578 to .702, exceeding the .50 threshold, confirming adequate convergent validity. Composite reliability (CR) values ranged from .845 to .904, all above the .70 minimum, ensuring high internal consistency. These results demonstrated that the measurement model meets the standards for reliability and validity, making it suitable for further analysis.

Data Analysis

The demographic analysis showed that all 470 respondents were over 18 and had used MFAs in Phnom Penh, making them suitable for the study. The sample was 64.3% male, 35.7% female, with 61% holding bachelor's degrees and 57% being single, indicating a youthful and educated population. ABA Bank was the most preferred MFA (48%), with 35% using it primarily for Internet banking. Seventy percent of respondents were comfortable with 70% of the MFAs offered, and 24% used the apps more than three times daily, indicating frequent usage.

The factor loadings for all items ranged from .70 to .871, demonstrating high validity and reliability (Cheung et al., 2024), and established strong correlations between the items and the respective constructs. The Composite Reliability (CR) values were between the ranges of .845 and .904, which were more than the recommended minimum of .70 for internal consistency in research as highlighted by Sarstedt et al. (2021). These authors reported unsupported values of average variance extracted (AVE) that ranged from .578 to .702, with a mean cut off value of .50 as proposed by Hair et al. (2020).

These findings show that the degree of reliability and convergent validity of the constructs was satisfactory, thus making the data fit for structural equation modeling (SEM) analysis. There was evidence in the findings that the constructs used met the Heterotrait-Monotrait (HTMT) criterion for discriminant validity, since all of the provided values were below .85 (Henseler et al., 2015). Likewise, Hair. et al. (2021) observed that HTMT values that .90 or lower are robust regarding discriminant validity. The results further revealed that the Average Variance Extracted (AVE) for each construct exceeded the squared correlations among constructs, thus satisfying criteria that explain the presence of non-redundancy and supporting the data quality.

The normality of the data was established by the Jarque Bera and Robust Jarque Bera tests performed for all constructs as normality failure tests. However, PLS-SEM can provide reliable results without normal data distribution, so this is not a limitation (Hair. et al., 2020). The assessment of model fit revealed strong support for PLS-SEM analysis with all ten indices over their specific cut-off values, as shown in Table 3, supporting the model's validity and reliability.

Table 3 *Model Fit and Quality Indices*

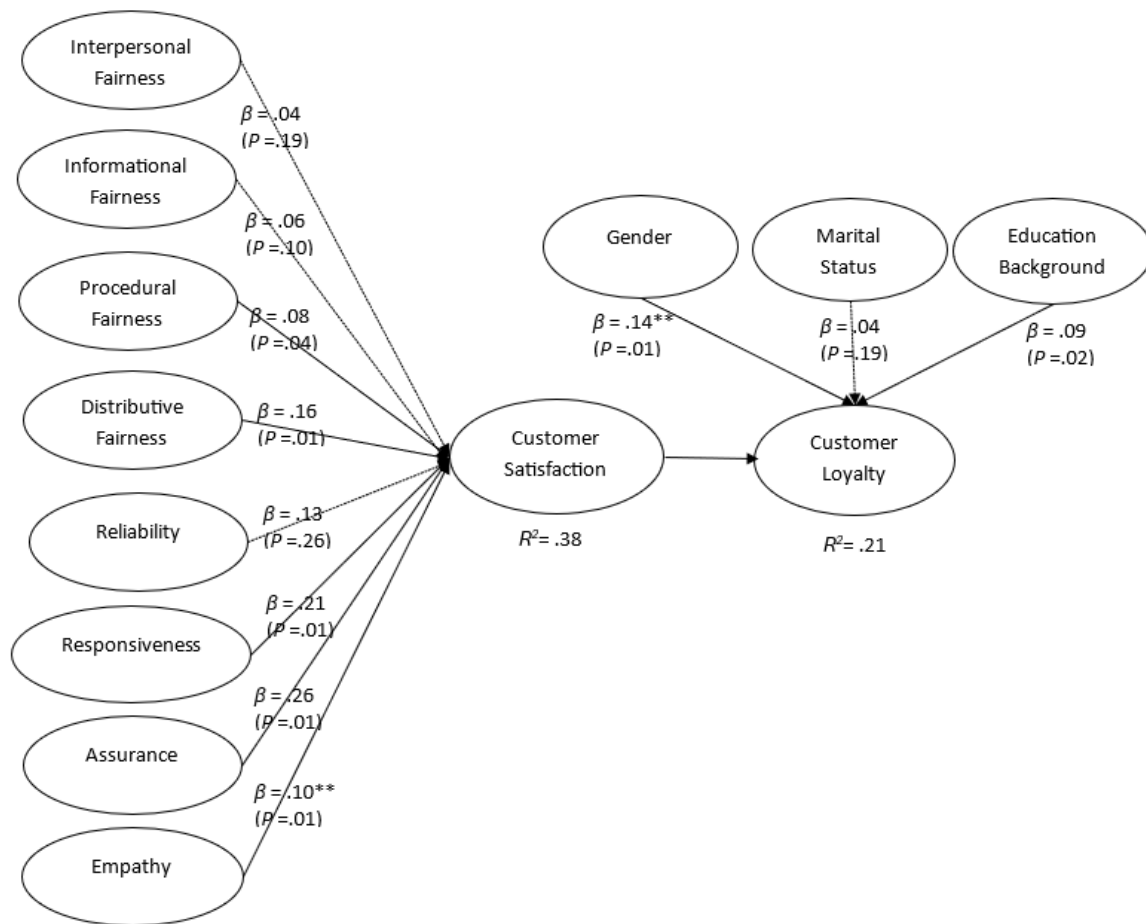
Model Fit Indices	Coefficient	Result
APC	.155***	Significant
ARS	.298***	Significant
AARS	.292***	Significant
AVIF	1.652	Ideally acceptable (≤ 5.0)
AFVIF	1.526	Acceptable (≤ 5.0)
GoF	.434	Large ($\geq .36$)
SPR	1.000	Ideally ($\geq .70$)
RSCR	1.000	Ideally ($\geq .90$)
SSR	1.000	Acceptable ($\geq .7$)
NLBCCR	1.000	Acceptable ($\geq .7$)

Note. *** ($p \leq .001$) showing highly significant results; ** ($p \leq .01$) indicating moderate significance; * ($p \leq .10$) representing weaker but still meaningful significance.

More so, the Average Path Coefficient (APC) was .155***, while the Average *R*-squared, ARS and the Average Adjusted *R*-squared, AARS were .298*** and .292*** respectively. Therefore, the directional strength of the model was considerably significant. The Average Block VIF, AVIF, and Average Full Collinearity VIF, AFVIF were 1.652 and 1.526, respectively. This was acceptable, since these values were less than 5.0, hence avoiding multi-collinearity problems. In addition, the Tenenhaus GoF statistic was observed at .434 (larger i.e., $\geq .36$), the Simpson's Paradox Ratio (SPR) at 1.000 (ideal $\geq .70$), RSCR = 1.000 (ideal $\geq .90$), SSR = 1.000 (acceptable, $\geq .70$) and NLBCDR = 1.000 (acceptable $\geq .70$). These findings corroborated the suitability and strength of the structural model, which improves the validity and reliability of the prevalence of measurement model as elaborated by Hair. et al. (2020).

Once the model quality was confirmed, PLS-SEM analysis was conducted to test the proposed hypotheses. The results are summarized in Figure 2, highlighting the relationships among the study variables. A mediation analysis using the Bootstrapping test was also performed, with findings presented after the PLS-SEM results discussion.

Figure 2 Summary of the PLS-SEM results



The data analysis revealed that customer loyalty was significantly associated with certain demographic variables, including gender ($\beta = .14$, $p < .01$) and education ($\beta = .09$, $p = .02$). However, no significant relationship was observed with other control variables ($\beta = .04$, $p = .19$).

Hypothesis Test Results

This section presents the hypothesis testing results of the PLS-SEM, summarized in Table 4. The proposed model includes 9 hypotheses related to social media marketing, customer experience, trust, brand awareness, and purchase intention. Six hypotheses were supported in the path analysis.

Table 4 Hypothesis Testing Results

Hypothesis	Relationship	β	p-value	Result
H ₁ :	IPF → CS	.04	.19	Not Supported
H ₂ :	INF → CS	.06	.10	Not Supported
H ₃ :	DF → CS	.16	<.01	Supported
H ₄ :	PF → CS	.08	.04	Supported
H ₅ :	R → CS	.03	.26	Not Supported
H ₆ :	RPS → CS	.21	<.01	Supported
H ₇ :	A → CS	.26	<.01	Supported
H ₈ :	E → CS	.10	.01	Supported
H ₉ :	CS → CL	.46	<.01	Supported

Note. Author's Calculations: IPF= Interpersonal Fairness, INF = Informational Fairness, PF = Procedural Fairness, DF = Distributive Fairness, R = Reliability, RS = Responsiveness, A = Assurance, E = Empathy, CS = Customer Satisfaction, and CL = Customer Loyalty.

To perform the mediation analysis, we used the bootstrap resampling technique with 999 samples and a 95% confidence interval. This method improves the accuracy of estimating indirect effects by repeatedly resampling the data. If the confidence interval for an indirect effect excludes zero, the mediation effect is deemed significant. The results are presented in Table 5.

Table 5 *Bootstrap Mediation Test Results*

Hypothesis	Relationship	β	<i>p</i> -value	Effect Size	Result
H_{1a} :	IPF \rightarrow CS \rightarrow CL	.09	.253	.003	Not Supported
H_{2a} :	INF \rightarrow CS \rightarrow CL	.06	.222	.006	Not Supported
H_{3a} :	DF \rightarrow CS \rightarrow CL	.11	<.001	.023	Supported
H_{4a} :	PF \rightarrow CS \rightarrow CL	.01	.145	.01	Not Supported
H_{5a} :	R \rightarrow CS \rightarrow CL	.03	.311	.005	Not Supported
H_{6a} :	RPS \rightarrow CS \rightarrow CL	.27	<.001	.032	Supported
H_{7a} :	A \rightarrow CS \rightarrow CL	.25	<.001	.044	Supported
H_{8a} :	E \rightarrow CS \rightarrow CL	.10	.082	.023	Not Supported

Note. Author's Calculation, IPF = Interpersonal Fairness, INF = Informational Fairness, PF = Procedural Fairness, DF = Distributive Fairness, R = Reliability, RS = Responsiveness, A = Assurance, E = Empathy, CS = Customer Satisfaction, and CL = Customer Loyalty.

Discussion and Implications

The results of this study suggested that service fairness and service quality dimensions do have an effect on satisfaction and customer loyalty in the MFAs studied; in some aspects, they conform to earlier findings, but in others, they deviate from them. Interpersonal fairness H_1 , whereby people are polite and respectful to one another, was not statistically related to customer satisfaction nor its mediation effect on loyalty H_{1a} . This was in contrast to the conclusions of Hadi et al. (2020) and Hossain et al. (2021), who argued that respect was important for interactions within traditional services. In MFAs where face-to-face interaction with people is infrequent, interpersonal fairness may be less salient. Therefore, companies should devote their resources to personnel who work in touch points like call centers, chat services, etc., rather than focus on interpersonal fairness.

Informational fairness (H_2), focusing on the clarity of communication, was not found to significantly influence customer satisfaction or loyalty mediation H_{2a} . This differed in particular from Kohsuwan and Lawkobkit (2013) and Omar et al. (2021), who claimed that transparency in relation to trust in financial service is of great importance. The findings suggest, however, that transparency should not be thought to impact loyalty on its own without support from additional elements such as responsiveness and assurance. Hence, companies must seek to incorporate updates through competent and responsive customer service, such as automatic updates on transactions, as they occur in real-time.

Distributive fairness H_3 , which is about fairness of outcomes, had a significant effect on customer satisfaction and loyalty mediation, as well as H_{3a} . This corresponds to the findings of Geebren and Jabbar (2021) along with Sofiana and Prihandono (2019), who noted strong correlations between fairness in pricing in relation to customer satisfaction and loyalty. MFAs need to concentrate on exhibiting fairness through strong marketing to enhance the perception of fair outcomes.

The fourth hypothesis, one that deals with processes being clear and evident—which was meant to relate to procedural fairness—did have an effect on satisfaction, but it did not have any effect on loyalty H_{4a} . This result confirms that fair processes increase satisfaction and loyalty in the context of adverse outcomes, as has been previously shown (Bacamante & Campos, 2024; Jung et al., 2017). Users need more factors, such as trust, in order to spur loyalty in the brand. MFAs need to simplify procedures and provide greater clarity in processes such as onboarding, resolving issues or disputes, and managing clients' accounts, because these tend to elicit discomfort.

Reliability H_5 was demonstrated to be an essential performance index for most clients, but these clients still did not exhibit loyalty; however, they did experience satisfaction or loyalty mediation H_{5a} . In contrast to Ismail et al. (2021), who emphasized the importance of reliability, this was not the case. In MFA's, reliability can be a given, as most users prioritize alternate dimensions, especially

responsiveness. So while a business is developing services such as a personal financial management tool, it is important to maintain a solid platform.

Responsiveness H_6 was found to be the strongest factor, encouraging both customers' satisfaction and loyalty mediation H_{6a} . This is consistent with Moriuchi and Takahashi's (2016) recommendations regarding the role of quick support in enhancing customers' loyalty and satisfaction. For MFAs, this factor is multiplicative. Companies must minimize response time and provide various ways of assistance, such as online chat, phone service, or AI solutions.

Assurance H_7 was associated with trust and competence, and also played an important role in predicting satisfaction and loyalty mediation H_{7a} . This finding supported those of Ludin and Cheng (2014), as well as Sharma et al. (2024) trust is an essential component when considering user satisfaction and repeated service intentions in the digital realm. To increase user trust, businesses should adopt state-of-the-art security systems, including two-factor authentication, strong encryption protocols, and fraud detection systems, and properly communicate these to users.

Empathy (H_8), the cognitive and/or effective emotional comprehension of the self or others, was shown to significantly impact satisfaction, but did not act as a predictor of loyalty H_{8a} when tested. This resonates in part with Kim et al. (2021), who pointed out the effect of empathy on satisfaction. The authors admitted that empathy in itself is not a sufficient precondition for garnering loyalty in digital services. It is therefore necessary to intertwine empathy in communications by providing the support necessary to make clients feel understood, while placing emphasis on other areas such as the level of service responsiveness and trust, which are important for translating satisfaction into loyalty.

As expected, customer satisfaction H_9 retained a strong relationship with loyalty, supporting the assumption within the SERVQUAL model that a positive relation exists, with satisfaction as an important mediator. Therefore, this stresses the importance of satisfaction as a bridge between service fairness/quality and loyalty. Managers should work on the performance of all-round enhancement of service dimensions in order to create the desired positive user experience, as well as conduct periodical measurements of customer satisfaction through surveys and feedback, as these are the benchmarks to complete alignment with customer requirements.

The lack of statistical significance in interpersonal and informational fairness provides valuable insights for MFAs. The diminished relevance of interpersonal fairness may result from reduced face-to-face interactions, while the impact of informational fairness is contingent on timeliness and trust, alongside confidentiality. Prioritizing distributive fairness, responsiveness, and assurance is essential for enhancing customer satisfaction and loyalty. Business leaders should optimize processes for clarity and efficiency, ensure prompt responses, implement trust mechanisms, and communicate service improvements effectively. Applying these insights can strengthen user experience, increase satisfaction, and foster long-term customer loyalty in the competitive digital finance sector.

Limitations and Recommendations

There were several limitations to this study. First, the study took place in Phnom Penh, Cambodia, which may limit the applicability of the outcomes to other areas with different infrastructural and economic conditions. Future studies may explore this conceptual framework in other countries and/or contexts. Second, the participants of the study were users aged 18 and over, and only MFAs subscribers to micro-lending sites, thus excluding other types of users: for example those who used banking, payment, or savings apps. Future research may include more diverse populations and samples. Third, this study employed quantitative approach with self-administered questionnaires, so the depth of responses to the survey instrument was limited. Future studies might apply mixed-method approaches, using both qualitative and quantitative methods which might extend in-depth understanding of the observed variables and influencing factors. Finally, the study did not take account of other variables such as culture or technology readiness, which seem to influence the use of MFAs and could be extended in future study to give a more holistic view of the problem of consumer behavior on MFAs.

Conclusion

To summarize, this study illustrated the significance of the service fairness and service quality dimensions on customer satisfaction and loyalty for MFAs in Phnom Penh, Cambodia. The results supported the inclusion of factors such as distributive fairness, procedural fairness, responsiveness, and assurance as motivators of user satisfaction and commitment. On the other hand, some dimensions such as empathy and interpersonal fairness were ascertained to have less influence on satisfaction. This study adds relevant information to the literature regarding MFAs that focuses on developing countries, and suggests recommendations to enhance user experience and customer retention in fiercely competitive environments.

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Navigating the Fear of Missing Out: A Narrative Analysis of Filipino Adolescents' Experiences of Fear of Missing Out

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Abstract

Aim/Purpose: The purpose of this study was to understand the personal narratives of Filipino adolescents about the Fear of Missing Out (FOMO), and how it affects their overall life situations. By delving into their experiences, this research aimed to uncover the unique ways that FOMO shapes their emotions, behaviors, and social interactions, providing a deeper insight into their daily struggles and coping mechanisms.

Introduction/Background: The study encapsulated the Fear of Missing Out (FOMO), a common experience among active social media users, especially young people. Social media is a platform where contents are filtered, and only happy and joyful moments are seen. Because of the frequent posting of happy moments and successes on social media, many people perceive others' lives as perfect and feel pitiful about their own lives. People feel that they are not included or that their lives are lacking compared to others. Studies have found that FOMO has a negative impact on self-esteem and mental well-being, and excessive use of social media makes it worse, as it can create negative feelings of envy towards what individuals perceive from social media.

Methodology: A qualitative research design that used narrative analysis was chosen to examine how Filipino youth experience Fear of Missing Out (FOMO) in relation to social media use and offline interactions. The study was conducted in the City of Cagayan de Oro, located in the northern part of Mindanao. The researchers selected eight (8) Filipino youths aged 13 to 18 who had experienced FOMO.

To obtain the necessary data, a semi-structured interview guide created by the researchers was used as the main research instrument. Since some participants were minors, a consent form was prepared to inform parents of the purpose and method of the study to address ethical considerations. Upon obtaining consent, the researchers set up an interview schedule with each participant. The participants were also asked to fill out an assent form. The researchers utilized open-ended questions to allow participants to reveal their experiences of FOMO. The researchers made audio recordings of the interviews to ensure data accuracy and reliability. The recordings were then transcribed to facilitate analysis.

In terms of data analysis, the researchers utilized three levels of narrative analysis: personal, positional, and societal. On a personal level, participants' individual experiences and how they personally experienced FOMO were explored. At the positional level, differences in the social positions of the narrator and the listener were examined. The societal level looked at society's broader view of FOMO, and how it is affected by social factors.

The data analysis was divided into three parts: beginning, middle, and end. The beginning focused on the individual or personal impact of FOMO. The middle part examined the influence of social

networks and relationships with others, especially the role of social belongingness. The final section focused on the broader impact of social media on FOMO, specifically the value of online visibility and social media as a source of personal satisfaction and confidence.

Findings: The results showed that due to social media, Filipino adolescents experienced FOMO which affected their self-worth, emotional well-being, and sense of belonging. The frequency of social media use affected adolescents significantly. Many relied on likes and reactions for validation, feeling inadequate when they received little engagement, while social comparisons intensified feelings of exclusion and self-doubt. Peer pressure pushed them to maintain an idealized online presence, often conflicting with their true selves and creating a struggle between social belonging and personal values.

Additionally, what individuals perceived on social media affected their self-perception, conflicting with their overall well-being. Some participants recognized the need to detach their self-worth from social media, focusing instead on real-life experiences, personal growth, and meaningful relationships. The findings revealed that social media contributes significantly to feelings of inadequacy and anxiety, with adolescents often comparing themselves to others' curated online personas. Despite temporary validation through online engagement, many participants reported a cycle of dependence on social media to avoid missing out. In contrast, in-person interactions offered a sense of belonging and relief from exclusion.

Contribution/Impact on Society: The study highlighted the psychological and social impacts of FOMO, and calls for interventions such as digital literacy programs and peer support groups to help adolescents healthily navigate these challenges.

Recommendations: It is recommended that educators, parents, and mental health professionals help reduce the feeling of FOMO among adolescents by promoting social media literacy, encouraging open discussions, and providing coping strategies to build self-esteem and resilience against FOMO.

Research Limitation: Due to the cultural context, the FOMO discussion may have unique characteristics that would not occur elsewhere.

Future Research: Future research should explore the nuances of FOMO in different cultural contexts to provide a broader understanding of its impact and how to develop more effective interventions. Additionally, exploring the role of parental guidance and educational interventions in mitigating FOMO could provide valuable insights into preventive measures.

Keywords: *Fear-of-missing-out, adolescents, narrative analysis, self-worth, social media*

Introduction

Fear of missing out (FOMO) is a phenomenon usually encountered among active social media users. People often document or show their happy moments in life, successes, and fun times on social media. With too much use of social media, people with less exciting lives feel FOMO: a feeling that they are not doing enough things that other people are doing. They may feel they are behind others whose lives are more adventurous and successful. People with less eventful lives tend to feel that they're missing out on life, when in fact every individual has different phases in life. FOMO appears to be a common experience and has recently become part of the vernacular, receiving frequent mentions in popular media (Milyavskaya et al., 2018).

The term FOMO became more prevalent with the increasing use of social media. It has affected many adolescents' general well-being. According to Barry and Wong (2020), high levels of FOMO have been linked to both loneliness and low self-esteem across age cohorts, especially for those who use social media more frequently. People who use social media extensively may find that FOMO about other people's activities is especially distressing. This implies that feelings about FOMO negatively impact individuals' self-esteem.

A study conducted by Hunt et al. (2018) showed that limiting the use of social media significantly lowered loneliness and depression when compared to those who more frequently used social media.

According to a study by Reyes et al. (2018) in the Philippines, FOMO was significantly related to both social media usage and Problematic Internet use, and fear of missing out can predict both social media use and problematic internet use. People experiencing FOMO are more likely to use social media frequently and may develop unhealthy Internet habits.

The existing literature reveals a research gap and lack of understanding about FOMO among adolescents. This study thus sought to address this by acknowledging how the Fear of Missing Out (FOMO) is understood by the present generation through the use of narrative analysis. Dogan's (2019) exploration of self-construal and its link to FOMO highlighted cultural differences between Western and Asian societies. Western cultures, being more individualistic, prioritize personal independence and achievements, leading to less sensitivity to FOMO. In contrast, Asian cultures, including the Philippines, are collectivist, where individuals define themselves through social relationships and group inclusion. This interdependent self-construal makes individuals in collectivist cultures more likely to experience FOMO, as missing out on social events or group activities threatens their sense of belonging and harmony. Moreover, a study by Karimkhan and Chapa (2021) found that FOMO was highly influenced by cultural factors, such as language consumption and collectivist values. This study provided context for the current research, which investigated FOMO among Filipino adolescents—part of a collectivist culture where social belonging and group harmony are highly valued. The present study further explored how social media usage in both English and ethnic languages may contribute to the experience of FOMO, and its impact on adolescent well-being.

This study aimed to explore the narratives of Filipino adolescents regarding the fear of missing out. Its goal was to gain a deeper understanding of this phenomenon and its impact on adolescents' general well-being, revealing the deeper nature of FOMO and how it influences self-perception. The study endeavors to make a significant contribution to the study of this phenomenon, serving as a reliable source of information and a foundation for the study of FOMO among Filipino adolescents.

Literature Review

The concept of Fear of Missing Out was introduced in 2004. It describes the phenomenon where individuals perceive they are missing out on experiences, and thus compulsively maintain social connections. It is associated with the need to belong, and negatively impacts mental health, social functioning, sleep, academic performance, and physical well-being (Gupta & Sharma, 2021). Adolescents are prone to feelings of FOMO due to the spread of social media in the present day. Research has shown that 55% of subjects aged 15 to 18 experienced FOMO.

According to a survey, envy is the leading emotion associated with FOMO, with 39% of respondents reporting this feeling (FinancesOnline, 2024). As technology and social media use becomes more pervasive, people become more and more vulnerable to FOMO. Adolescents increasingly spend time in digital environments, with social media becoming the dominant leisure activity (Barry et al., 2020). This extensive online engagement can lead to FOMO, defined as the desire to stay connected, and the constant urge to check social media (Abel et al., 2016). Despite the benefits of social media, its excessive use can contribute to negative outcomes such as anxiety and Internet addiction, particularly in adolescents (Barry et al., 2020; Kuss & Griffiths, 2017).

Another study involving 386 undergraduates explored the relationship between social media use, the fear of missing out (FOMO), and various mental and physical health outcomes. The findings indicated that higher levels of FOMO were associated with increased time spent on social media, as well as more depressive symptoms, less mindful attention, and more physical symptoms. Notably, when FOMO was accounted for, the link between time spent on social media and depressive symptoms or mindful attention was no longer significant. This suggests that FOMO may serve as a more revealing measure of the negative health effects of social media use (Baker et al., 2016). This implies that the frequency of social media use can affect individuals' feelings associated with FOMO. The higher the frequency of social media use, the higher the risk of individuals feeling depressive symptoms associated with FOMO.

Increasingly, social interaction has gone from physical to digital spaces. There is much concern regarding the depth and authenticity of these new digital interactions, issues of personal privacy, and the decreased rate of genuine connections. Constant connectivity and social media engagement heighten awareness of others' activities and achievements, exacerbating feelings of exclusion and inadequacy (Putra et al., 2004).

Fear of Missing Out can greatly impact how teens behave, especially when it makes them overly attached to social media (Abel et al., 2016). Teens with high FOMO often skip meals, lose sleep, or make poor decisions in order to stay connected with their friends online (Beyens et al., 2016). Feelings of FOMO among adolescents lead to poor physical and mental health, causing destructive effects on behavior. This can leave them feeling jealous, lonely, or unsure of themselves, affecting their mood, well-being, and overall wellness (Abel et al., 2016; Beyens et al., 2016). According to Montgomery (2024), almost half of adolescents feel worse about their bodies because of social media, where constant comparison to others often leads to feelings of inadequacy. The risks go beyond body image issues; excessive use of social media has also been linked to increased anxiety, depression, and loneliness. Dr. Vivek Murthy, the U.S. Surgeon General, recently raised concerns by advocating for warning labels on social media platforms, emphasizing that the safety of these platforms for young people's mental health is still unproven (Montgomery, 2024).

Several studies have looked into ways to reduce the negative effects of Fear of Missing Out, often focusing on cutting back on social media use. For example, reducing time on social media has been shown to lower feelings of loneliness and depression linked to FOMO (Hunt et al., 2018). A seven-day social media break helped participants feel less connected to FOMO, and they reported feeling better mentally and more socially connected (Brown & Kuss, 2020). This shows how less use of social media can have a positive impact on mental health.

Another approach, the FOMO Reduction method, includes tools like autoreplies and filtering, along with teaching coping skills like self-talk and the use of checklists (Alutaybi et al., 2020). Participants who used this method found it helpful in managing their FOMO, and the results showed improved mental well-being after a week without social media. These findings highlight the importance of reducing FOMO for better mental health, although more research is needed to understand how people cope with FOMO in their everyday lives.

According to Alabri (2022), the need to belong to a group emerged as the strongest cause of FOMO. Individuals don't want to feel left out, but always want to be included. This study indicated that women have a higher need for belonging, so they experience FOMO more often. Feeling important to a group increases FOMO and social media use, but this effect is minor. Simply stated, people who seek acceptance in their social circle(s) are more likely to experience FOMO than those who need less validation. This shows how FOMO can vary depending on one's personal perspective.

According to Franchina et al. (2018), FOMO has a positive effect on how often young people use different social media platforms, and how many they actively use. The FOMO effect is stronger on platforms such as Facebook and Snapchat than other social media platforms. FOMO has also been linked to phubbing behavior, which is when a person interacts with their cellphone rather than the person they are physically with. The study also found that teens with higher FOMO use more types of social media platforms. This implied that the more active people are on social media, the more likely that they will develop FOMO. Furthermore, it has been determined that FOMO can explain Problematic Social Media Use.

Gao et al.'s (2023) study showed that fear of missing out (FOMO) was associated with mobile social media (MSM), which can increase depression. Additionally, phubbing or neglecting people by being too occupied on social media can cause damage to relationships. This may also increase the risk of depression and detachment from people. Additionally, the results showed that MSM-related FOMO had a clear and positive effect on college students' depression. This showed the importance of the right utilization of social media, and emphasized the importance of staying connected offline.

The study of Groenestein et al. (2024) examined the idea that FOMO can be understood as a lack of control caused by unfulfilled psychological needs and/or a low level of well-being. A lack of control

over the use of social media can lead to a pervasive impact on individuals' relationships and well-being. At the individual level, a partially reciprocal relationship was found between FOMO and social media use. This showed how FOMO was directly correlated to the frequency of social media use, and discipline in utilizing social media.

The results of Jabeen et al. (2023) showed that FOMO was stimulated by time cost and anxiety. FOMO also positively influences users' adoption of narcissistic admiration and rivalry processes. What individuals perceive from social media can influence their thinking and increase comparisons from what was shown in social media. This could influence behavior and thoughts. This study found that only social comparisons positively influenced fatigue. These findings raise significant implications for theory and practice, particularly for managing negative emotional states and for a tempered use of social media platforms. Moderate use of social media and self-discipline are necessary to avoid the negative implications of social media use that can cause feelings of FOMO.

Lang (2024) found that FOMO posed a threat to mental health as a new negative emotional experience in the Internet era. Mental health can be degraded easily, leaving people vulnerable. It is necessary to pay close attention to FOMO and its effects on one's mental health. Mindfulness group training is helpful, as it not only can improve mindfulness and reduce anxiety levels. It can help people cope with negative FOMO emotions, and thus to maintain strong mental health.

In summary, while social media can offer opportunities for connection and expression, they also bring significant challenges to adolescent mental health. Understanding the impact of FOMO, promoting a healthier relationship with digital spaces, and encouraging real-world social interactions are essential steps to support adolescents in navigating this digital age.

Research Methodology

Research Design

This study employed a qualitative research design with narrative analysis to explore how Filipino adolescents experienced FOMO. Narrative analysis focuses on understanding individual's stories, analyzing not only their content, but also the structure and meaning of their narratives. This approach allows for a deeper understanding of how adolescents interpret their interactions with social media and peers. Guided by Murray's (2000) framework, this study investigated three levels of narrative analysis: personal, positional, and ideological. This design captures both psychological and social dimensions of the FOMO phenomenon.

Research Locale

The study was conducted in Cagayan de Oro City, located in the northern part of Mindanao, Philippines. According to Rosauo (2024), Cagayan De Oro is known as the "City of Golden Friendship," characterized by its diverse population, rich cultural heritage, and vibrant social atmosphere. The city serves as a significant hub for education, commerce, and tourism in the region, making it an ideal setting for examining the experiences of Filipino adolescents with FOMO.

Research Participants

The researchers selected Filipino adolescents aged 13 to 18 years who were experiencing FOMO. A purposive sample of eight respondents was used as subjects for the study, with a balanced representation of four males and four females, all from private schools. The participants were selected based on specific criteria, including their experiences related to the Fear of Missing Out (FOMO) and their engagement with social media. The participants' social media screen time averaged from 4-6 hours per day, usually spent after waking up, before sleeping, and during free time on school days and weekends. To ensure a diverse sample and representation, the researchers considered factors such as social circles and hours of social media usage.

Research Instrument

A semi-structured interview guide was used to collect the data. The researchers created the interview question guide as the primary instrument for the study. The guide included open-ended questions aimed at eliciting participants' thoughts, emotions, and behaviors associated with FOMO in the context of their social media use and offline interactions. To ensure the reliability and relevance of the interview questions, the guide was validated by an outside expert. The instrument allowed for a deeper exploration of participants' personal narratives, providing valuable insights into the phenomenon. The interview format allowed the researchers to add follow-up questions, thus enabling further exploration of respondent insights during the interview process.

Data Gathering Procedure

To gather the data necessary for the study, the researchers interviewed individuals who fit its criteria and invited them to share their narratives. To ensure that ethical standards were followed throughout the data collection process, a consent form was drafted to obtain parental permission since some of the participants were underage. Before participating, all individuals received comprehensive information about the study's purpose and methodology. Written informed consent was obtained from parents, along with assent from the participants themselves. Upon obtaining consent, the researchers scheduled an interview with each of the respondents. Interviews were conducted in a semi-structured format, lasting 45 to 60 minutes, with open-ended questions that allowed respondents to provide narratives of their lived experiences with FOMO. The interviews were audio-recorded to preserve the authenticity and reliability of the information. Upon gathering the data needed for the study, the researchers then transcribed the audio recordings, stored all transcripts, and removed identifiable data to maintain participant confidentiality.

Data Analysis

Data analysis was guided by Murray's (2000) three levels of narrative analysis: personal, positional, and societal. The personal level focused on the personal experiences of the adolescents, capturing how they individually encountered FOMO. The positional level examined the differences in social position between the narrator and the listeners. Lastly, the societal level was about the socially shared stories of certain communities. The data analysis consisted of three chapters: the beginning, middle, and end. The beginning consisted of the individual or personal impacts of FOMO. The middle chapter focused on its social aspects, including the influence of social networks and peer relationships as factors of social belongingness. Lastly, the third chapter addressed the broader influence of social media on FOMO, highlighting the influence of FOMO in prioritizing visibility, along with social media as a source of fulfillment.

A rigorous process of repeated refinement was employed to ensure the reliability and validity of the themes identified in the study. Initially, themes were developed through open coding of the collected data by the research team, followed by consensus discussions to refine these preliminary themes. The next step involved peer review by mentors, whose feedback was incorporated to enhance the accuracy and relevance of the themes. Member checking was then conducted with a subset of participants to gather their feedback on the resonance of the themes with their personal experiences, leading to further adjustments. Finally, triangulation with existing literature and conceptual frameworks related to FOMO and adolescent behavior on social media was conducted. The research team held multiple discussions to ensure that the themes were comprehensive, well-supported by the data, and aligned with existing knowledge. This process of validation and refinement resulted in a robust and credible set of themes that accurately reflect adolescents' experiences of FOMO.

Ethical Considerations

Several ethical considerations were addressed in the study. First and foremost, informed consent was obtained from both parents and participants. Consent was requested to ensure that the respondents willingly participated in the study. The researchers ensured that data collected from

participants were utilized ethically, ensuring that any identifiable personal information of respondents was removed to protect their identities. Additionally, the study was ethically reviewed by Xavier University's Research Ethics Office and followed applicable ethical standards of the Psychological Association of the Philippines /American Psychological Association in conducting the study.

Results and Discussion

The results of the study were categorized into three different themes namely: Personal, Positional, and Ideological. Each theme has a beginning, middle, and end. The themes reflect how FOMO affected Filipino adolescents psychologically, emotionally, and socially.

Table 1 *Adolescent Experiences of FOMO*

Chapters	Personal	Positional	Ideological
Beginning: Understanding the Personal Impact of FOMO	Experiences of Restructuring Self-Worth and Emotional Triggers for FOMO	Perceived role as a digital citizen	Enmeshed self-worth in online social media
Middle: Influence of Social Networks and Peer Relationships	Experiences of Socially Influenced Self-identity	Perceived role as a social being	Conflict between the desire for social belonging and personal values
End: Influence of Social Media	Experiences of prioritizing visibility as a source of personal fulfillment	Perceived role of adolescents as socially adjusted individuals	Self-Assurance against FOMO

Experiences of Restructuring Self-Worth

Participants described a change in how they perceived their self-worth, largely influenced by their social media interactions. Participants stated,

P1: "Before, I always felt good when people liked my posts. But now, I'm trying not to depend on it so much because I realized it doesn't define my worth."

P2: "When I don't get many likes, I feel like I'm not enough, and it's hard to shake that feeling."

Seeking validation on social media through reactions and likes affects individuals experience FOMO. It became a phenomenon wherein likes and reactions determined the worth of individuals. A larger number of likes and reactions signified one's higher self-worth. These emotional reactions highlight how FOMO can lead to a diminished sense of self-worth and social exclusion, making adolescents more vulnerable to feelings of inadequacy. It further highlights an evolving understanding of self-worth as adolescents mature and gain more control over their reliance on online validation.

Experiences of Emotional Triggers for FOMO

Adolescents identified specific emotional triggers that intensified their fear of missing out. Based on the data gathered, the feeling of being left behind arose when the participants witnessed social media posts about activities or events of which they were not a part. Participants said,

P2: "I saw a post of my friends hanging out without me, and I felt so left out, like maybe they didn't want me there."

P5: "When I see people posting about their trips or accomplishments, I can't help but compare myself and feel like I'm behind in life."

Social media has become a platform where people share significant life events. However, social media is filtered, showing only the beautiful side, and not the ugly side of life behind the camera. Individuals tend to compare their progress and life situation based on what is seen on social media. This further intensifies feelings of exclusion and self-doubt. The feeling of exclusion creates a sense of isolation and insignificance; being left behind in relevant events leads to negative self-perception.

Perceived Role as a Digital Citizen

Participants acknowledged their roles as digital citizens, often feeling pressured to maintain a curated and active online presence. Participants reported:

P6: "Social media creates pressure because people might overthink that you dislike them if you don't react to their posts."

P3: "Sometimes, it feels exhausting to keep up with everything online, but I don't want to be left out or forgotten."

Individuals tend to keep up on social media and show life updates to maintain their presence. This shows how FOMO drives individuals to stay connected through social media usage. This sense of responsibility reflects unwritten social media rules that one has to maintain a specific presence and become active in engaging with others' content. However, the burden of these expectations also surfaced in their narratives. This balancing act between fulfilling digital expectations and preserving personal well-being underscored the complex role of digital citizenship in their lives.

Self-Worth Entangled with Online Social Media Presence

Results revealed how their self-worth was deeply tied to their online social media presence. Participants recounted:

P4: "Social media promotes the idea that everyone should always be doing something fun because of peer pressure."

P7: "Social media creates jealousy, as people often post happy lives, while in-person interactions make me feel pressured to show happiness through photos, especially on vacations."

Social media affects individuals' self-perception. This cycle of seeking validation through showing a happy life on social media affects individuals' self-perception and self-worth. Staying relevant in social media and showing life events or activities signifies their worth. However, some participants have started to resist this entanglement. This shift demonstrated a growing awareness of the need to separate self-worth from online interactions.

Experiences of Socially Influenced Self-Identity

Participants described how their sense of self-identity was shaped by societal standards and peer influences. Participants related,

P7: "During vacation, I felt compelled to take photos to show a happy life, even though normally I wouldn't care about posting."

P7: "Social media creates pressure to be visible and happy, which leads to jealousy and trying to imitate an unrealistic lifestyle."

This showed how social media can be one-sided or fake, with individuals tending to curate posts to maintain a specific image. This reflected how adolescents often conform to societal expectations to gain acceptance or approval. Because people on social media only show moments of life that are happy and relevant, and do not show the imperfections and oddness behind the camera, this creates a false sense of reality for other people. These statements highlight how external influences shape adolescents' behaviors, often blurring the line between their authentic selves and their socially constructed identities.

Perceived Role Within Social Groups: Family and Friends

The roles adolescents perceive within their social circles, especially among family and friends, emerged as significant. Participants explained,

P4: "I try to share posts about my family because it shows I care about them, even if I don't say it in person."

P6: "If I don't comment or react to my friends' posts, they might think I'm ignoring them."

This showed how there is constant pressure for individuals to keep up and maintain engagement with family and friends on social media. It illustrated how adolescents use social media as a tool to affirm their roles within their families and with their friends. Within their peer groups, adolescents feel an obligation to maintain connections by reacting to posts. These behaviors reveal the complexities of navigating relationships in both offline and online spaces.

Conflict Between the Desire for Social Belonging and Personal Values

Adolescents often experience a conflict between wanting to fit in and staying true to their personal values. Participants noted,

P1: "There are times when I join trends just to be part of the group, even if I don't really agree with them."

P8: "I don't like posting about every moment of my life, but my friends do, and sometimes I feel weird about not joining in."

Many events or trends arise on social media. The results showed that individuals participated in events in which they had no interest for the sake of conforming and being included. This tension between conformity and individuality underscored the challenges of social belonging. These experiences illustrated the struggle to balance personal authenticity with the need for acceptance within social groups. This shows how social media and FOMO can lead adolescents to prioritize social validation over personal happiness and preferences.

Experiences of Prioritizing Visibility as a Source of Personal Fulfillment

The need to be seen and acknowledged was a recurring theme in participants' narratives; they said,

P1: "I feel good when people notice my posts, like when they say I look nice or that they're proud of me."

P1: "Sometimes I post things even when I don't feel like it, just so people don't forget about me."

This showed that constant validation seeking through social media and the pressure to maintain a certain image to avoid being left out. Online visibility was important to their sense of accomplishment or worth. Visibility on social media can serve as both a motivator and a source of pressure for adolescents: motivation to show they are achieving their goals, and pressure to maintain a certain image to conform and avoid being left out.

Perceived Role of Adolescents as Socially Adjusted Individuals

Adolescents viewed themselves as individuals who need to navigate social norms and expectations effectively. Respondents shared,

P3: "I feel like I'm supposed to always adapt to different groups, whether it's family or friends, so I don't upset anyone."

P3: "I try to be the person everyone expects me to be, but sometimes it's tiring."

Individuals curate themselves to provide a certain image on social media. This fake self-identity poses a significant challenge to mental health because of societal expectations and norms that they must uphold. It is hard to manage different expectations in a carefully curated manner—they may conform with one group, but look out of place in another. This adaptability requires adolescents to

put significant effort into maintaining harmony within their social circles. These statements show how adolescents strive to balance their own identities with their expected roles in different social contexts.

Self-Assurance Against FOMO

Participants shared varying degrees of self-assurance in resisting the effects of FOMO, stating

P2: "I've learned to focus on what I have instead of what others are doing. It's not easy, but it helps."

P3: "I try to ignore the feeling of missing out, but sometimes it gets to me, especially when I see my friends having fun without me".

Focusing on oneself instead of comparing oneself to other and feeling insecure about their accomplishments and life status on social media is one helpful approach. This demonstrates the development of self-control as adolescents mature. However, others admitted that self-assurance is still a work in progress. These responses highlighted the spectrum of experiences that adolescents have in managing their feelings of FOMO, from building resilience to continuing struggles. Interestingly, respondents who participated in extracurricular activities, pursued hobbies, or had diverse social circles reported experiencing less FOMO.

Practical Implications

This study's findings provide several important implications for practice, especially for educators, parents, and mental health professionals working with adolescents. Schools can involve social media literacy programs in their curricula to help students develop a healthier relationship with social media, understand its potential impact on mental health, and learn strategies to manage FOMO. Future research could examine the varying effects of different types of screen media use and whether families are involved in interventions enhances their effectiveness (Goldberg, 2024). Parents should be motivated to have open conversations with their children about use of social media, and help them set boundaries while understanding the differences between portrayals in cyberspace and reality.

Mental health professionals can use these insights to develop targeted interventions, such as Cognitive Behavioral Therapy techniques, that can address the anxiety and stress related to FOMO. Guidance counselors should take an active role in implementing programs that focus on emotional resilience and coping skills to help adolescents manage peer pressure and FOMO. Social-emotional learning can support emotional regulation and improve self-esteem, reducing the negative impact of social media. Additionally, resilience programs help students develop adaptive coping strategies, fostering well-being and positive adaptation despite challenges (Ronen, 2021; Arslan, 2024). By providing adolescents with coping strategies and fostering environments that promote self-esteem and resilience, these stakeholders can play a crucial role in mitigating the adverse effects of FOMO and supporting the overall well-being of young people.

Conclusion

Overall, this study explored how Fear of Missing Out (FOMO) affected Filipino adolescents across personal, positional, and ideological categories. Results showed that adolescents linked their sense of self-worth to social media validation based on the number of likes and reactions to their posts. Over time, individuals gained self-awareness and separated their own self-value from societal norms and standards. Positional influences revealed the pressure to conform to societal standards and pressure from peer expectations, leading to fake online identities and curating online personas that fit societal standards and expectations so that they would feel a sense of belonging. This poses a significant challenge to the authenticity of individuals' self-identity. In the category of ideology, FOMO drives adolescents to prioritize visibility and digital presence, keeping up on social media and maintaining engagement with families and friends. These findings highlight the complex interplay of FOMO on adolescents' psychological, emotional, and social development.

This study highlights the need for interventions that will address the psychological and social impacts of FOMO among Filipino adolescents. Providing programs such as digital literacy, and

including it in the curriculum, can help adolescents and students understand the proper use of social media and build healthier habits with social media utilization. Additionally, establishing peer support groups can furnish a safe space for adolescents. The combined approach of digital literacy programs and peer support groups may help adolescents to better navigate social media and maintain overall well-being.

Limitations

A possible limitation of this study was that cultural differences may introduce variations in the experiences of FOMO among different populations.

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Conflict of Interest

The researchers declare no conflict of interest in conducting this study. All efforts were made to ensure objectivity, transparency, and ethical standards throughout the research process.

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Employers' Expectations for Accounting Graduates in an Era of Disruptive Innovation

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Abstract

Aim/Purpose: This study aimed to assess the level of employers' expectations for accounting graduates in an era of disruptive innovation, and analyze differences in these expectations among employers.

Introduction/Background: Disruptive innovation, driven by digital technology advancements, has transformed various professions, including accounting, necessitating significant adaptations in skills and practices. As labor markets evolve, educational institutions are crucial in preparing graduates to meet these new demands. Aligning curricula with employer expectations is essential to ensure graduates possess the necessary competencies for the workforce. Therefore, in order to know the expectations of employers, the researcher investigated employers' expectations of accounting graduates, focusing on four key learning outcomes. The first outcome, Knowledge, was divided into General Knowledge (GK) and Accounting Knowledge (AK). GK includes understanding law, economics, finance, marketing, and management, while AK involves expertise in accounting principles, financial statements, internal control, risk management, auditing, and information systems. The second outcome, Skills, comprised Lifelong Learning and 21st Century Skills (LL21CS), such as communication, technology use, planning, creativity, teamwork, critical thinking, and adaptability. It also includes Professional Skills (PS), focusing on applying various disciplines to accounting tasks, data analysis, and using accounting software. The third outcome, Ethics, was split into General Ethics (GE) and Accounting Professional Ethics (APE). GE emphasized discipline, punctuality, and responsibility, while APE highlighted honesty, fairness, independence, confidentiality, and adherence to professional standards. The final outcome, Character, included General Character (GC) traits like courage, politeness, and leadership, and Asia-Pacific International University Character (AIUC) traits like kindness, resilience, and respect for cultural differences. The findings from this study can inform curriculum enhancements for higher educational institutions, ensuring alignment with employer requirements.

Methodology: The study surveyed 130 employers operating in the Central Region of Thailand. Data were collected using structured questionnaires consisting of three parts: Part 1: General information about the respondents; Part 2: Employers' expectations of desired characteristics of accounting graduates, consisting of four areas: 1) Knowledge; 2) Skills; 3) Ethics; and 4) Personal characteristics, totaling 70 items, using a Likert rating scale; Part 3: 4 additional questions. The statistical methods used for data analysis included frequencies, percentages, means, standard deviations, independent *t*-tests, and one-way ANOVA.

Findings: The results showed that out of the sample group consisting of 130 individuals, 73% were female. Among the respondents, 32% were aged between 41 and 50 years, and 59% held a bachelor's degree. Additionally, 31% worked in a professional accounting service firm, 54% held a management-level job, and 84% were employed in the accounting field. Moreover, 52% of respondents had more than 15 years of work experience. The analysis of the levels of employers' expectations for accounting graduates revealed that employers placed the highest importance on Accounting Professional Ethics (APE), followed by General Ethics, General Character, AIU Character, Accounting Knowledge, Lifelong

Learning and 21st Century Skills, Workplace Skills, Professional Skills, and General Knowledge. Comparative analysis indicated no significant differences in employer expectations based on gender or educational level. However, variations were observed in other factors: employers of different age groups had differing expectations regarding graduates' General Characters and AIU Character. Employers from different business types exhibited differing expectations concerning General Knowledge, Workplace Skills, Accounting Professional Ethics, General Character, AIU Character, Professional Skills, and General Ethics. Variations in job levels influenced expectations related to General Knowledge. Employers' occupational fields significantly affected expectations regarding Accounting Knowledge, Lifelong Learning and 21st Century Skills, Professional Skills, Workplace Skills, Accounting Professional Ethics, General Character, AIU Character, and General Ethics. Additionally, differences in employers' work experiences affected their expectations of Accounting Professional Ethics.

Contributions/Impact on Society: This study highlights the critical importance of ethics and personal character in the professional development of accounting graduates. By identifying employers' specific expectations, the study provides valuable insights for educational institutions to use when revising their curricula. They need to ensure that graduates are well-prepared to meet the ethical and professional demands of workforces, thus contributing positively to business organizations and society. Additionally, this finding offers valuable guidance to high school students in choosing an accounting bachelor's degree program that meets employer expectations, strengthening their qualifications as competitive candidates upon graduation.

Recommendations: The study pointed out that employers prioritize the development of accounting ethics in graduates over other areas. Therefore, educational institutions should focus on integrating the development of ethics, professional codes of conduct, and strong personal characteristics into their curricula. This should be balanced with the necessary academic knowledge and skills to produce well-rounded, ethical, and competent professionals who can effectively meet the dynamic requirements of job markets.

Research Limitations: The study was limited to employers in the Central Region of Thailand, which may affect the generalizability of the findings to other regions or countries. The focus on accounting graduates also limits the applicability of the results to other fields of study.

Future Research: Future research should expand the scope to include educational institutions in other regions to allow for broader applicability of the findings. Additionally, further studies should explore various factors influencing employers' expectations of accounting graduates to provide more comprehensive insights.

Keywords: *Accounting graduates, employers' expectations, innovation*

Introduction

Disruptive innovation represents a transformative change that replaces existing practices, often rendering them obsolete. This phenomenon is driven by advancements in digital technology and innovation (Singjanusong & Chotechoei, 2022). McConville (2023) highlighted technologies such as big data analytics, robotic process automation, artificial intelligence, and blockchain that are fundamentally reshaping the skill sets required of accountants. This transformation compels educational institutions to integrate these technologies into their accounting programs to adequately prepare graduates for the evolving landscape. Such technological and innovative changes have significantly impacted various professions, necessitating adaptations to new work processes. Professionals in the accounting field must also evolve and enhance their skills to remain competitive and meet labor market demands.

Educational institutions, as critical hubs for learning and graduate development, play a pivotal role in preparing future employees to meet these demands. Consequently, these institutions must prioritize the development of curricula that are aligned with employer needs, ensuring that graduates

will possess the competencies required in workforces. Understanding employers' expectations for accounting graduates enables educational institutions to design curricula and instructional methods that effectively address these needs, fostering the production of well-equipped and employable professionals.

A research study on *Entrepreneurs' Needs for the Bachelor of Accountancy Program and Characteristics of Accountants Desired by Accounting and Auditing Firms* highlighted several key attributes. These have included proficiency in accounting, professional and related disciplines, general management, organizational behavior, marketing, international business management, statistics and quantitative analysis, auditing, business law and taxation, and accounting systems and information. Furthermore, desirable qualities extend to moral and ethical standards, personal, professional, and social responsibility, analytical and integrative thinking, creativity, a positive attitude, modern technological proficiency, and effective communication and technology utilization (Gunnarapong et al., 2023). This aligned with a study by Ebaid (2021), which emphasized that both generic skills and technical skills are essential in the accounting field, with communication, teamwork, emotional stability, and analytical thinking ranking as the top requirements.

A study on the qualifications of accountants of enterprises in the digital era revealed that professional caution was the highest priority. Variations in employers' business experience influenced the desired characteristics of graduates, particularly practical academic expertise, work-related competencies, interpersonal abilities, and communication skills (Soeykrathoke, 2023). Briones et al. (2021) examined employers' preferences on employability skills of business management and accounting graduates, and found leadership, communication, and interpersonal skills to be the most highly valued. Conversely, formal accounting qualifications, technological skills, and innovative capacity were ranked the lowest. The study also highlighted demographic differences, noting that employer gender influenced preferences for leadership and management skills, while employer age affected expectations for professional accounting and management expertise.

Business types varied in their demand for professional accounting, communication, interpersonal, and management skills. Different business sectors require accounting graduates to possess diverse professional accounting, communication, interpersonal, and management skills. The demand for accounting skills may vary across different types of businesses, as certain industries do not require in-depth accounting knowledge. Research has also shown that, even within accounting positions, employers often place significant emphasis on the soft skills of employees. Similarly, communication skills have been found to differ considerably across various business sectors (Ghani et al., 2018). However, all job levels exhibited consistent expectations for accounting graduates across these areas. This aligns with the findings by Ratanasongtham et al. (2021), who reported that establishments in Uttaradit Province prioritized accountants who adhered to ethical and professional standards. Additionally, the study observed that differing business types and models in the region required accountants with varying practical academic skills, characters, interpersonal and communication abilities, and organizational and business management expertise.

Similarly, Jones (2023) found that both employers and instructors considered ethics the most important employability skill, followed by work ethic, analytical thinking, critical thinking, and communication. This emphasizes the enduring importance of strong ethical values and professional integrity in accountants, despite ongoing innovations. Accounting ethics education has gained increasing attention, with studies like *Accounting Ethics Education: Making Ethics Real* (Costa & Pinheiro, 2021) and *Accounting Ethics Education: Empirical Evidence from 25 Years of Research* (Mardawi et al., 2019) advocating for more effective teaching methods and curriculum integration. Research studies such as *Teaching Virtues and Values* (Pinheiro & Costa, 2021) and *Mapping Ethics Education in Accounting Research: A Bibliometric Analysis* (Poje & Zaman Groff, 2021) have highlighted the need for ethical competence in accounting education, and reinforced calls for innovative approaches to better prepare students for professional ethical challenges.

This study aimed to explore employers' expectations of accounting graduates across four key learning outcomes. First, the knowledge components comprised two main aspects: General

Knowledge (GK) and Accounting Knowledge (AK). General Knowledge encompasses an understanding of law, economics, finance, marketing, and organizational management. Accounting Knowledge involves expertise in accounting principles and methods, the preparation of financial statements, internal control, risk management, auditing, and accounting information systems.

Second, the skillset encompassed Lifelong Learning and 21st Century Skills (LL21CS), which include proficiency in language, communication, technological proficiency, planning, media literacy, creativity, teamwork, critical thinking, eagerness for continuous learning, and adaptability. Additionally, it includes Professional Skills (PS), involving the application of various disciplines to accounting tasks, data analysis for decision-making, and proficiency in using accounting, statistical, and research software. Lastly, Workplace Skills (WS) refer to the practical abilities necessary for performing effectively in a professional environment.

Third, ethical dimensions comprise two key components: General Ethics (GE) and Accounting Professional Ethics (APE). General Ethics pertain to qualities such as discipline, punctuality, public-mindedness, and responsibility towards oneself and others. Accounting Professional Ethics encompass adherence to ethical standards specific to the accounting profession, including honesty, fairness, independence, maintaining professional competence, performing duties in accordance with established professional standards, safeguarding confidentiality, ensuring transparency, refraining from concealing or misrepresenting information, and complying with applicable laws and regulations (Federation of Accounting Professions, 2024).

Finally, the learning outcome of Character traits is categorized into two aspects: General Character (GC) and Asia-Pacific International University Character (AIUC). General Character includes attributes such as the courage to express oneself, politeness, humility, meticulousness, and leadership. AIUC is characterized by being considerate, kind, generous, diligent, resilient under pressure, enthusiastic in service-mindedness, delivering professional services to the best of one's ability, and respecting cultural and ethnic differences. By incorporating insights from these studies, educational institutions can design curricula that not only align with industry requirements, but also cultivate adaptability among accounting graduates in the face of disruptive innovation

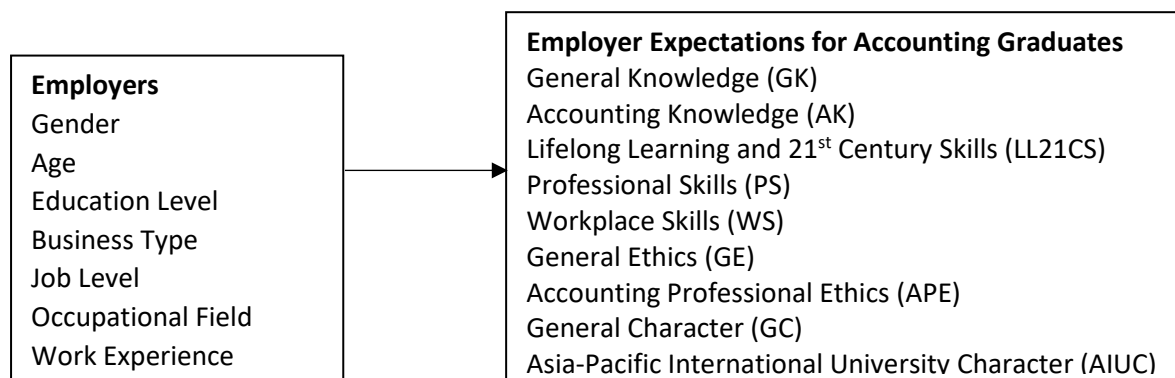
Research Objectives

1. To study the level of employers' expectations for accounting graduates in an era of disruptive innovation.
2. To compare differences of employers' expectations for accounting graduates in an era of disruptive innovation.

Conceptual Framework

Based on the literature review, the conceptual framework for the research study on employers' expectations for accounting graduates in the era of disruptive innovation has been developed, as illustrated in Figure 1.

Figure 1 *Conceptual Framework*



Methodology

Population and Sample

The study focused on establishments situated in Thailand's central region, the same area where Asia-Pacific International University is located. Purposive sampling was used; the sample consisted of 400 individuals from the business sectors of Accounting Services, Educational Services, Financial Services, Retail Businesses, Real Estate and Construction, and Industrial and Manufacturing, specifically targeting supervisory and management-level positions. Responses were received from 130 participants, which represented a response rate of 32.5%. This response rate was adequate for data analysis (Aaker et al., 2001). Data collection took place between April and June 2024.

Research Instrument

The questionnaire used as a research tool consisted of three parts:

Part 1: General information of the respondents;

Part 2: Employers' expectations of the desired characteristics of accounting graduates, consisting of four areas: (a) knowledge, (b) skills, (c) ethics, and (c) personal characteristics, totaling 70 items, using the Likert Rating Scale, and

Part 3: Four additional questions.

The research tool was validated by three experts who assessed the content validity of the questions using Item-Objective Congruence (IOC) between Questions and Objectives. The overall IOC value was .96. Subsequently, the questionnaire was tested on a sample of 30 respondents with characteristics similar to the target group. Reliability was evaluated using Cronbach's alpha coefficient, which yielded a reliability value of .96. According to Cho & Kim (2015), a Cronbach's alpha coefficient of .70 or higher indicates that the questionnaire possesses adequate reliability for data analysis.

Measurement

The statistics used in data analysis were frequencies, percentages, means, standard deviations, independent *t*-tests, one-way ANOVA, and Scheffe's method of comparison.

The scoring criteria (rating scale) used average scores for all ranges (Srisa-ard, 2011) as follows:

A mean value of 4.51–5.00 = a *maximum level* of expectation;

A mean value of 3.51–4.50 = a *high level* of expectation;

A mean value of 2.51–3.50 = a *medium level* of expectation;

A mean value of 1.51–2.50 = a *low level* of expectation;

A mean value of 1.00–1.50 = a *minimum level* of expectation

Research Results

Demographic Profile of Respondents

The respondents' demographic profiles revealed that among the sampled group of 130 persons, the majority were female (95 persons, or 73%); many were aged 41-50 years (42 individuals, or 32%) and held a bachelor's degree (76, or 59%). Additionally, 40 individuals (31%) worked in accounting professional service businesses, while 70 (54%) held management job levels, and 109 of them (84%) worked in accounting jobs. Furthermore, 68 respondents (52%) had over 15 years of work experience.

Employers' Expectations Level on Accounting Graduates

An analysis of employers' expectations for accounting graduates indicated that Accounting Professional Ethics had the highest mean score ($\bar{X} = 4.74$, $SD = 0.43$), or highest level of expectation. This was followed by General Ethics ($\bar{X} = 4.66$, $SD = 0.46$) General Character, ($\bar{X} = 4.51$, $SD = 0.48$), and AIU character ($\bar{X} = 4.51$, $SD = 0.52$) with maximum levels of expectation. Accounting Knowledge had a high level of expectation ($\bar{X} = 4.45$, $SD = 0.59$), along with Lifelong Learning and 21st Century Skills ($\bar{X} = 4.28$, $SD = 0.52$). Workplace Skills ($\bar{X} = 4.25$, $SD = 0.70$), Professional Skills ($\bar{X} = 4.16$, $SD = 0.59$), and General Knowledge ($\bar{X} = 3.77$, $SD = 0.63$) all had high levels of expectation as well.

Comparisons of Differences in Employers' Expectations for Accounting Graduates

The analysis of the comparisons of employers' expectations for accounting graduates by gender, conducted at the statistical significance level of .05 as shown in Table 1, revealed that employers' gender did not result in significant differences in expectations for the accounting graduates.

Table 1 *Comparisons of Employers' Expectations for Accounting Graduates by Gender*

Variables	Male (n = 35)		Female (n = 95)		t	p
	\bar{X}	SD	\bar{X}	SD		
General Knowledge	3.77	0.63	3.77	0.64	0.01	.992
Accounting Knowledge	4.45	0.50	4.44	0.63	0.06	.956
Lifelong Learning and 21 st Century Skills	4.29	0.37	4.28	0.56	0.12	.911
Professional Skills	4.16	0.50	4.16	0.62	0.04	.966
Workplace Skills	4.32	0.60	4.22	0.73	0.77	.443
General Ethics	4.62	0.41	4.67	0.47	0.59	.559
Accounting Professional Ethics	4.71	0.37	4.75	0.45	0.38	.707
General Character	4.44	0.42	4.53	0.49	0.95	.342
AIU Character	4.48	0.43	4.52	0.54	0.41	.681

An analysis of employers' expectations for accounting graduates by age, presented in Table 2, indicated that employers of different age groups held varying expectations regarding the General Character and AIU Character of the graduates ($p < .05$). However, subsequent analysis using Scheffe's Post Hoc Test revealed no significant pairwise differences.

Table 2 *Comparisons of Employers' Expectations for Accounting Graduates by Age*

Variables		SS	df	MS	F	p
General Knowledge	Between Groups	0.89	4	0.22	0.55	.701
	Within Group	50.85	125	0.41		
	Total	51.72	129			
Accounting Knowledge	Between Groups	1.15	4	0.29	0.81	.522
	Within Group	44.31	125	0.35		
	Total	45.46	129			
Lifelong Learning and 21 st Century Skills	Between Groups	1.36	4	0.34	1.29	.276
	Within Group	32.88	125	0.26		
	Total	34.24	129			
Professional Skills	Between Groups	2.66	4	0.66	1.98	.102
	Within Group	41.99	125	0.34		
	Total	44.64	129			
Workplace Skills	Between Groups	2.50	4	0.62	1.28	.281
	Within Group	60.91	125	0.49		
	Total	63.40	129			
General Ethics	Between Groups	.96	4	0.24	1.16	.330
	Within Group	25.78	125	0.21		
	Total	26.74	129			
Accounting Professional Ethics	Between Groups	1.24	4	0.31	1.73	.149
	Within Group	22.47	125	0.18		
	Total	23.71	129			
General Character	Between Groups	2.42	4	0.60	2.82	.028*
	Within Group	26.74	125	0.21		
	Total	29.16	129			
AIU Character	Between Groups	3.32	4	0.83	3.36	.012*
	Within Group	30.93	125	0.25		
	Total	34.25	129			

Note. * $p \leq .05$.

An analysis of employers' expectations for accounting graduates by education level, conducted at the statistical significance level of .05 as shown in Table 3, revealed that employers with varying education levels exhibited similar expectations for the accounting graduates.

Table 3 *Comparisons of Employers' Expectations for Accounting Graduates by Education Level*

Variables		<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>p</i>
General Knowledge	Between Groups	2.71	3	0.90	2.32	.078
	Within Group	49.03	126	0.39		
	Total	51.74	129			
Accounting Knowledge	Between Groups	1.25	3	0.41	1.19	.318
	Within Group	44.21	126	0.35		
	Total	45.46	129			
Lifelong Learning and 21 st Century Skills	Between Groups	0.28	3	0.09	0.34	.794
	Within Group	33.97	126	0.27		
	Total	34.24	129			
Professional Skills	Between Groups	1.69	3	0.56	1.65	.182
	Within Group	42.96	126	0.34		
	Total	44.64	129			
Workplace Skills	Between Groups	0.74	3	0.25	0.50	.687
	Within Group	62.67	126	0.50		
	Total	63.40	129			
General Ethics	Between Groups	0.25	3	0.08	0.40	.756
	Within Group	26.49	126	0.21		
	Total	26.74	129			
Accounting Professional Ethics	Between Groups	0.19	3	0.06	0.33	.803
	Within Group	23.52	126	0.19		
	Total	23.71	129			
General Character	Between Groups	0.71	3	0.24	1.04	.376
	Within Group	28.46	126	.23		
	Total	29.16	129			
AIU Character	Between Groups	0.22	3	0.07	0.27	.851
	Within Group	34.03	126	0.27		
	Total	34.25	129			

An analysis of employers' expectations for accounting graduates by business type, presented in Table 4, revealed significant differences in expectations across various business sectors. Specifically, different business types had varying expectations regarding General Knowledge, Workplace Skills, Accounting Professional Ethics, General Character, AIU Character ($p < .01$), as well as Professional Skills and General Ethics ($p < .05$). Upon conducting Scheffe's Post Hoc Analysis, it was found that the Accounting Services group had higher expectations for General Knowledge in comparison to other business sectors (Table 5). Furthermore, the Accounting Services group also had higher expectations regarding Accounting Professional Ethics and General Character than the Real Estate and Construction group (Tables 6–7). However, no significant pairwise differences were observed for Professional Skills, Workplace Skills, General Ethics, or AIU Character.

Table 4 Comparisons of Employers' Expectations for Accounting Graduates by Business Type

Variables		SS	df	MS	F	p
General Knowledge	Between Groups	9.08	6	1.51	4.36	.000**
	Within Group	42.66	123	0.35		
	Total	51.74	129			
Accounting Knowledge	Between Groups	2.23	6	0.37	1.06	.394
	Within Group	43.24	123	0.35		
	Total	45.46	129			
Lifelong Learning and 21 st Century Skills	Between Groups	3.23	6	0.54	2.14	.054
	Within Group	31.01	123	0.25		
	Total	34.24	129			
Professional Skills	Between Groups	5.03	6	0.84	2.604	.021*
	Within Group	39.61	123	0.32		
	Total	44.64	129			
Workplace Skills	Between Groups	9.63	6	1.61	3.67	.002**
	Within Group	53.78	123	0.44		
	Total	63.40	129			
General Ethics	Between Groups	2.92	6	0.49	2.51	.025*
	Within Group	23.82	123	0.19		
	Total	26.74	129			
Accounting Professional Ethics	Between Groups	3.54	6	0.59	3.60	.003**
	Within Group	20.17	123	.16		
	Total	23.71	129			
General Character	Between Groups	4.91	6	0.82	4.15	.001**
	Within Group	24.25	123	0.20		
	Total	29.16	129			
AIU Character	Between Groups	5.57	6	0.93	3.99	.001**
	Within Group	28.67	123	0.23		
	Total	34.25	129			

Note. * $p \leq .05$; ** $p \leq .01$.

Table 5 Scheffe's Post Hoc Analysis of General Knowledge and Business Type

Business Type	\bar{X}	AS (n = 40)	ES (n = 3)	FS (n = 2)	RB (n = 6)	REC (n = 17)	IM (n = 26)	O (n = 36)
Accounting Services (AS)	4.10	-	1.000	1.000	.999	.099	.057	.017*
Educational Services (ES)	4.28	-	-	1.000	.996	.675	.702	.662
Financial Services (FS)	4.08	-	-	-	1.000	.957	.967	.959
Retail Businesses (RB)	3.94	-	-	-	-	.909	.927	.900
Real Estate and Construction (REC)	3.54	-	-	-	-	-	1.000	1.000
Industrial and Manufacturing (IM)	3.58	-	-	-	-	-	-	1.000
Others (O)	3.56	-	-	-	-	-	-	-

Note. * $p \leq .05$.

Table 6 Scheffe's Post Hoc Analysis of Accounting Professional Ethics and Business Type

Business Type	\bar{X}	AS (n = 40)	ES (n = 3)	FS (n = 2)	RB (n = 6)	REC (n = 17)	IM (n = 26)	O (n = 36)
Accounting Services (AS)	4.92	-	1.000	1.000	.202	.045*	.235	.793
Educational Services (ES)	4.97	-	-	1.000	.688	.747	.932	.994
Financial Services (FS)	4.80	-	-	-	.961	.984	.999	1.000
Retail Businesses (RB)	4.40	-	-	-	-	1.000	.953	.673
Real Estate and Construction (REC)	4.49	-	-	-	-	-	.978	.557
Industrial and Manufacturing (IM)	4.63	-	-	-	-	-	-	.959
Others (O)	4.76	-	-	-	-	-	-	-

Note. * $p \leq .05$.

Table 7 *Scheffe's Post Hoc Analysis of General Character and Business Type*

Business Type	\bar{X}	AS (n = 40)	ES (n = 3)	FS (n = 2)	RB (n = 6)	REC (n = 17)	IM (n = 26)	O (n = 36)
Accounting Services (AS)	4.77	-	.998	.460	.253	.036*	.153	.137
Educational Services (ES)	4.59	-	-	.905	.966	.976	.999	.999
Financial Services (FS)	4.00	-	-	-	.999	.993	.945	.925
Retail Businesses (RB)	4.22	-	-	-	-	1.000	.985	.970
Real Estate and Construction (REC)	4.29	-	-	-	-	-	.987	.959
Industrial and Manufacturing (IM)	4.42	-	-	-	-	-	-	1.000
Others (O)	4.45	-	-	-	-	-	-	-

Note. * $p \leq .05$.

The analysis of employers' expectations for accounting graduates by job level, as presented in Table 8, indicated that there were varying expectations regarding General Knowledge ($p < .05$) for different job levels.

Table 8 *Comparisons of Employers' Expectations for Accounting Graduates by Job Levels*

Variables	Supervisory Level (n = 60)		Management Level (n = 70)		t	p
	\bar{X}	SD	\bar{X}	SD		
General Knowledge	3.64	0.63	3.89	0.62	-2.28	.024*
Accounting Knowledge	4.36	0.52	4.52	0.65	-1.50	.136
Lifelong Learning and 21 st Century Skills	4.20	0.47	4.35	0.54	-1.65	.103
Professional Skills	4.07	0.57	4.24	0.60	-1.67	.098
Workplace Skills	4.14	0.69	4.33	0.70	-1.52	.132
General Ethics	4.61	0.46	4.70	0.45	-1.08	.282
Accounting Professional Ethics	4.69	0.41	4.78	0.44	-1.09	.276
General Character	4.46	0.48	4.55	0.47	-1.06	.293
AIU Character	4.45	0.53	4.56	0.50	-1.25	.214

Note. * $p \leq .05$.

An analysis of employers' expectations for accounting graduates by occupational field, as presented in Table 9, revealed that employers from different occupational fields had varying expectations in several areas. These included Accounting Knowledge, Lifelong Learning and 21st Century Skills, Professional Skills, Workplace Skills, Accounting Professional Ethics, General Character, AIU Character ($p < .01$), and General Ethics ($p < .05$). Upon conducting Scheffe's Post Hoc Analysis, it was found that employers in the accounting field had higher expectations of accounting graduates in Accounting Knowledge, Lifelong Learning and 21st Century Skills, Professional Skills, Workplace Skills, General Ethics, Accounting Professional Ethics, General Character, and AIU Character compared to employers in other occupations (excluding those in the Accounting and Finance fields). Additionally, employers in the Finance field had higher expectations regarding Accounting Knowledge, Lifelong Learning and 21st Century Skills, and General Character than those in other occupational fields (excluding the Accounting and Finance sectors).

Table 9 *Comparisons of Employers' Expectations for Accounting Graduates by Occupational Fields*

Variables		<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>p</i>
General Knowledge	Between Groups	1.66	2	.83	2.10	.126
	Within Group	50.08	127	.39		
	Total	51.74	129			
Accounting Knowledge	Between Groups	5.03	2	2.52	7.91	.001**
	Within Group	40.43	127	.32		
	Total	45.46	129			
Lifelong Learning and 21 st Century Skills	Between Groups	3.69	2	1.85	7.67	.001**
	Within Group	30.55	127	.24		
	Total	34.24	129			
Professional Skills	Between Groups	3.28	2	1.64	5.04	.008**
	Within Group	41.36	127	.33		
	Total	44.64	129			
Workplace Skills	Between Groups	4.56	2	2.28	4.93	.009**
	Within Group	58.84	127	.46		
	Total	63.40	129			
General Ethics	Between Groups	1.52	2	.76	3.83	.024*
	Within Group	25.22	127	.20		
	Total	26.74	129			
Accounting Professional Ethics	Between Groups	1.93	2	.96	5.62	.005**
	Within Group	21.78	127	.17		
	Total	23.71	129			
General Character	Between Groups	2.57	2	1.29	6.15	.003**
	Within Group	26.59	127	.21		
	Total	29.16	129			
AIU Character	Between Groups	2.61	2	1.31	5.24	.007**
	Within Group	31.64	127	.25		
	Total	34.25	129			

Note. * $p \leq .05$ **, $p \leq .01$.

An analysis of employers' expectations for accounting graduates by work experience, as presented in Table 10, revealed that employers with varying years of work experience had different expectations regarding Accounting Professional Ethics ($p < .05$). A further examination using Scheffe's Post Hoc Analysis indicated that employers with less than 5 years of work experience had higher expectations for accounting graduates in the area of Accounting Professional Ethics compared to employers with 5 to 10 years of work experience.

Table 10 Comparisons of Employers' Expectations for Accounting Graduates by Work Experience

Variables		<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>p</i>
General Knowledge	Between Groups	.38	3	.13	.31	.815
	Within Group	51.35	126	.41		
	Total	51.74	129			
Accounting Knowledge	Between Groups	.89	3	.30	.83	.477
	Within Group	44.57	126	.35		
	Total	45.46	129			
Lifelong Learning and 21 st Century Skills	Between Groups	.70	3	.23	.87	.457
	Within Group	33.55	126	.27		
	Total	34.24	129			
Professional Skills	Between Groups	.15	3	.05	.15	.933
	Within Group	44.49	126	.35		
	Total	44.64	129			
Workplace Skills	Between Groups	.32	3	.11	.22	.886
	Within Group	63.08	126	.50		
	Total	63.40	129			
General Ethics	Between Groups	1.29	3	.43	2.13	.100
	Within Group	25.45	126	.20		
	Total	26.74	129			
Accounting Professional Ethics	Between Groups	1.49	3	.50	2.81	.042*
	Within Group	22.22	126	.18		
	Total	23.71	129			
General Character	Between Groups	1.11	3	.37	1.66	.180
	Within Group	28.05	126	.22		
	Total	29.16	129			
AIU Character	Between Groups	.612	3	.20	.76	.516
	Within Group	33.63	126	.27		
	Total	34.25	129			

Note. * $p \leq .05$

Discussion

This study of employers' expectations for accounting graduates in an era of disruptive innovation found that employers had the highest expectations regarding Accounting Professional Ethics. This finding is aligned with previous research, which indicated that businesses prioritize accountants who demonstrate caution and professionalism (Soeykrathoke, 2023). Similarly, Jones (2023) found that ethics was rated as the most important employability skill by both employers and faculty, followed by work ethic, analytical thinking, critical thinking, and communication. Moreover, businesses in Uttaradit Province were found to have the greatest demand for accountants who adhere to ethical standards and professional conduct (Ratanasongtham et al., 2021). This highlights the fact that despite the ongoing disruptive innovations in the world, employers still prioritize accountants who exhibit strong ethical values and professional integrity. Additionally, accounting ethics education has gained increased attention in recent years, with a growing body of research advocating for more effective teaching methodologies and curricula integration.

Studies such as *Accounting Ethics Education: Making Ethics Real* (Costa & Pinheiro, 2021) have promoted comprehensive reflection on how ethics can be effectively taught to accounting students. *Accounting Ethics Education: Empirical Evidence from 25 Years of Research* (Mardawi et al., 2019) provides empirical insights into the long-term commitment of accounting academics to ethics education. *Accounting Ethics Education: Teaching Virtues and Values* (Pinheiro & Costa, 2021) explored the significance of fostering virtues and values in ethics training, while *Mapping Ethics Education in Accounting Research: A Bibliometric Analysis* (Poje & Zaman Groff, 2021) offered an extensive overview of historical trends and future research directions in accounting ethics education. These studies collectively highlight the necessity of ethical competence in accounting education,

advocating for innovative teaching approaches and deeper integration of ethical principles into accounting curricula to better prepare students for professional ethical challenges.

The second highest expectations from employers included General Ethics, General Character, AIU Character, Accounting Knowledge, Lifelong Learning and 21st Century Skills, Workplace Skills, and Professional Skills, while General Knowledge was the least prioritized. These results were consistent with Briones et al. (2021), who found that employers preferred leadership, communication, and interpersonal skills, in that order. Conversely, employers were least interested in formal accounting qualifications, technology skills, and the capacity for innovation. Furthermore, professional skills such as interpersonal skills, conducting oneself professionally, working with figures comfortably, being ethical, listening skills, and self-confidence were the top six prioritized essential skills by employers (Ebaid, 2021). In addition, evidence from labor markets suggested that professional accountants must demonstrate proficiency in utilizing relevant information technology, strong teamwork skills, a sense of responsibility, the capacity to work independently, analytical abilities, and a commitment to continuous learning, as these were the most highly valued attributes in the reviewed job advertisements (Barišić et al., 2022)

This study compared differences in employers' expectations for accounting graduates when categorized by gender, age, education level, business type, job level, occupation field, and work experience, and found no significant differences in expectations based on gender and education level. This contrasted with the findings of Briones et al. (2021), who noted that different genders had varying demands for accounting graduates with leadership and management skills. Additionally, the study revealed that employers of different age groups had varying expectations for accounting graduates in terms of General Character and AIU Character. This finding was consistent with Briones et al. (2021), who also observed that employers of different ages had distinct expectations regarding accounting graduates' professional accounting and management skills. This study's results, classified by business type, revealed that employers from different industries had varying expectations for accounting graduates in areas such as General Knowledge, Workplace Skills, Accounting Professional Ethics, General Character, AIU Character, Professional Skills, and General Ethics.

Specifically, the Accounting Services group held higher expectations for General Knowledge compared to other industries, and they also had higher expectations for Accounting Professional Ethics and General Character than the Real Estate and Construction group. These findings aligned with Briones et al. (2021) and Ghani et al. (2018), who noted that different business sectors require accounting graduates with diverse professional accounting, communication, interpersonal, and management skills. The demand for accounting skills may vary across different types of businesses, as certain industries do not require in-depth accounting knowledge. Research has shown that, even within accounting positions, employers often place significant emphasis on the soft skills of employees. Similarly, Ratanasongtham et al. (2021) highlighted that various business types and models in Uttaradit Province demanded different qualifications for accountants, focusing on practical academic skills, work-related abilities, personal traits, and interpersonal and communication skills, as well as organizational and business management competencies.

Furthermore, the study's findings, classified by job level, indicated varying expectations for General Knowledge for different job positions, which contrasted with the research of Briones et al. (2021), who found that different job positions had distinct requirements for accounting graduates across various skill areas. The results of the study, when classified by occupation field, also revealed that employers from different occupational sectors had varying expectations of accounting graduates in areas such as Accounting Knowledge, Lifelong Learning and 21st Century Skills, Professional Skills, Workplace Skills, Accounting Professional Ethics, General Character, AIU Character, and General Ethics. Specifically, employers in the accounting field had higher expectations for accounting graduates in all these areas compared to employers in other occupational fields (those not classified under the accounting and finance groups). Similarly, employers in the finance field had higher expectations in Accounting Knowledge, Lifelong Learning and 21st Century Skills, and General Character compared to those in other occupations (again, excluding the accounting and finance groups).

Furthermore, the study's findings classified by work experience showed that employers with varying years of work experience had different expectations for accounting graduates, particularly in Accounting Professional Ethics. Employers with fewer than five years of work experience had higher expectations for Accounting Professional Ethics than those with five to ten years of experience. This finding was consistent with Soeykrathoke (2023), who noted that businesses with varying levels of experience have different requirements for desirable accountant qualities, including practical academic and work-related skills, as well as interpersonal and communication abilities. By contrast, a study by Kwabena and Amo (2024) found no significant differences in relation to the work experience of employers.

Conclusion and Recommendations

The research findings demonstrated that employers place the highest expectations on accounting graduates in terms of Accounting Professional Ethics. Consequently, educational institutions, as key providers of graduates for labor markets, should prioritize the development of ethics, professional codes of conduct, and strong personal characteristics in their curricula, alongside necessary knowledge and skills. This approach will ensure that graduates not only possess academic knowledge and competencies, but also demonstrate morality, ethics, and a sense of responsibility toward business organizations and society. Furthermore, this finding provides essential information for high school students selecting an accounting bachelor's degree program that is aligned with employer requirements, enhancing their qualifications as strong candidates after graduation.

The study was limited to employers in the Central Region of Thailand, which may have affected the generalizability of the findings to other regions or countries. The focus on accounting graduates also limits the applicability of the results to other fields of study. For future research, it is recommended that the scope of studies be expanded to include educational institutions in other regions, enabling a broader application of the findings. Additionally, further studies should explore the various factors that influence employers' expectations of accounting graduates to yield more comprehensive insights.

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Exploring the Challenges and Coping Strategies Among Women Survivors of Super Typhoon Rai in Cebu, Philippines: A Phenomenological Study

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Abstract

Aim/Purpose: This study explores the challenges encountered and coping strategies employed by women survivors of Super Typhoon Rai in Cebu, Philippines, aiming to shed light on their lived experiences and resilience.

Introduction/Background: Disasters, influenced by both regional and global factors, cause widespread destruction, economic disruption, and profound psychological and social impacts, particularly among women. Although disasters do not choose their victims, women are often more vulnerable during these events, yet their experiences and roles are frequently overlooked. Given the growing number of typhoons in the Philippines, more studies are needed to examine how individuals cope with their lives following each storm. In particular, exploring the experiences of women after disasters is essential, as it can provide valuable insights into their unique vulnerabilities and resilience. These factors have led to this study, which explored the lives of the victims of Typhoon Rai. Additionally, how participants managed to rebuild their lives after the typhoon was investigated.

Methodology: A qualitative approach—specifically hermeneutic phenomenology—was adopted in this study to explore the lived experiences among women when facing disaster, particularly typhoons, and their efforts to rebuild after the disaster. In-depth interviews and focus group discussions were conducted with ten women, five from a rural area and five from an urban area, all of whom had experienced this disaster. Purposive sampling was used to select them based on specific criteria related to their experiences. Semi-structured interviews were the primary method of data collection. Thematic analysis was then applied to identify key themes and produce a coherent report. The focus of the study was participants' perspectives, highlighting the emotional, psychological, and practical aspects of their recovery. To ensure validity of the findings, the data was reviewed by a content analyst, and the participants were invited to validate the results.

Findings: The challenges and coping strategies of Typhoon Rai survivors were examined, focusing on the disaster's aftermath and recovery. Key challenges included social chain disruptions of basic services such as food, water, and shelter, as well as psychological distress, and social fragmentation. Ineffective government disaster response exacerbated logistical challenges, while mental health struggles such as trauma and anxiety were widespread. Social fragmentation hindered recovery, as feelings of isolation and lack of community support prolonged the rebuilding process. In this regard, women survivors reported various coping strategies, with faith-based coping being central to emotional stability and hope. Cultivating an optimistic mindset, emotional catharsis through sharing struggles, and social support networks also played crucial roles in recovery. The study highlights the need for better disaster response systems, equitable resource distribution, and mental health support. Strengthening community bonds and promoting coping strategies like spirituality, optimism, and social support are essential for comprehensive recovery and disaster preparedness.

Contribution/Impact on Society: This study provides new insights into the importance of comprehensive disaster management that addresses not only physical needs, but also psychological well-being, as well as gender-sensitive disaster management and recovery initiatives. This work

addresses gaps in the existing literature and offers innovative perspectives that can stimulate further inquiry and discussion. This research may serve as a valuable resource for scholars and practitioners alike, and spark meaningful dialogue within the academic community.

Recommendations: A multi-pronged approach is essential to support recovery efforts, starting with immediate interventions such as stress debriefing sessions and the mobilization of mental health professionals to provide psychological aid. Local government units must streamline disaster response systems to ensure the timely delivery of resources and financial assistance, with training for government workers to address the psychological needs of survivors for a compassionate response. Faith-based practices, such as prayer, meditation, and religious community involvement, can offer survivors emotional stability and resilience during difficult times. Cultivating an optimistic mindset is also crucial, as focusing on hope and small victories can foster perseverance. Emotional catharsis, allowing individuals to express their emotions, is important for relieving stress and promoting healing. Lastly, social support from family, friends, and the community plays a pivotal role, providing a sense of belonging and encouragement. By integrating these strategies, communities can build resilience and a stronger foundation for recovery.

Research Limitation: The study's use of phenomenology, while effective for capturing personal experiences, limited the ability to make broad generalizations, as the findings were subjective and context-specific. With a small sample size of ten women, the study may not fully represent the broader population of Typhoon Rai survivors, and overlooks the experiences of men or other marginalized groups. Moreover, it was conducted in two areas of Cebu; thus, the findings may not reflect the diverse perspectives of other regions or countries affected by similar disasters. External factors, such as the ongoing recovery process and government responses, may have also influenced the findings, and participants' emotional states during their interviews may have impacted their responses.

Future Research: Future research could employ a broader focus to include men or LGBTQ+ individuals, as these groups may encounter distinct challenges during disaster recovery. While the study highlights women's experiences, it's crucial to explore how gender and sexual orientation affect coping strategies and recovery for other marginalized groups. Men may struggle with cultural expectations around masculinity, hindering their ability to express vulnerability or seek help. LGBTQ+ individuals may face discrimination, social stigma, or exclusion from support networks, potentially leading to heightened psychological distress during recovery.

Keywords: *Women Typhoon Rai survivors, psychological well-being, resilience*

Introduction and Literature Review

Natural disasters can be profoundly destructive, causing widespread harm to families and significantly affecting their mental health (Beaglehole et al., 2018; Goldmann & Galea, 2014; Neria et al., 2008). These can occur in any geographic location, though their occurrence and form often depend on regional, environmental, and societal factors. Natural disasters can cause loss of life, destruction of property, economic disruption, environmental degradation, and long-term psychological and social impacts among affected individuals (Masozera et al., 2007). These impacts are expected to become more frequent, complex, and severe in the future due to factors such as climate change, conflict, displacement, public health crises, rapid and unplanned urban growth, and technological risks (Gasper et al., 2011; Harlan & Ruddell, 2011).

On December 16, 2021, Super Typhoon Rai, locally known as Odette, made its first landfall, wreaking havoc across the Visayas and Mindanao Island. The typhoon brought intense rainfall, strong winds, floods, and storm surges, leaving thousands displaced and hundreds of dead within a single night. The strong winds and storm surge caused by Typhoon Rai led to extensive destruction across many communities in the Central Visayas (Esteban et al., 2023). Initial assessments revealed widespread destruction, yet it was only in the subsequent weeks that the full extent of the damage became evident (Office for the Coordination of Humanitarian Affairs, 2022).

Typhoons such as this one can significantly impact the psychological well-being of individuals, as the destruction of homes, loss of loved ones, and displacement from familiar environments often lead to psychological distress and mental health challenges. The common psychological effects observed in the aftermath of disasters include anxiety, depression, emotional instability, Post-Traumatic Stress Disorder, stress responses, trauma, and other symptoms of psychological distress (Makwana, 2019). These effects not only impact the individuals directly affected, but also resonate throughout the broader community.

While the severity of a disaster is frequently assessed through economic and social metrics, these evaluations often fail to account for the profound emotional suffering that survivors endure (Hobfoll et al., 2007). The grief of losing loved ones and the devastation of property may result in an immense psychological burden on victims. Despite these challenges, individuals must find ways to cope and rebuild their lives, emphasizing the resilience required to navigate such adversity.

Numerous large-scale epidemiological studies have highlighted the high rates of mental health disorders and their considerable impact on individuals, families, and society as a whole (Kessler et al., 2007). However, a notable challenge in the Philippine context is the limited access to, and the reluctance to seek, mental health services in the wake of such disasters. Following a disaster, there is a notable rise in psychiatric hospital admissions, indicating direct mental health impacts (Shukla, 2013). It is often linked to the extent of the disaster, including the loss of loved ones, pets, property, or even living in proximity to the event and experiencing damage to one's home (Kar et al., 2007). The management of emotions plays a vital role in preventing overwhelming feelings from impeding constructive recovery efforts. By gaining awareness of their emotional states, individuals could better identify triggers and respond more effectively. Nonetheless, experiencing heightened emotions after a disaster is a natural and expected response (Centers for Disease Control and Prevention, 2018).

Typhoons frequently occur in the Philippines due to its location next to the Pacific Ocean (Desquitado et al., 2020). A study found that typhoons injure people psychologically in addition to causing deaths and financial losses. Research has revealed that specific individuals were more vulnerable due to their inability to react appropriately or adjust (Shen et al., 2020). Exposure to such events can even lead to long-term health effects and risks, such as substance abuse, insomnia, phobias, amnesia, hyperarousal, acute stress disorder, and other mental illnesses (Bryant, 2019). According to a report by the World Health Organization (WHO, 2014) on the mental health impact of natural disasters in the Philippines, typhoons have been one of the leading disasters impairing the psychological health of those who are affected.

Although disasters affect everyone, women are often more vulnerable during such events, yet their experiences and contributions remain underexplored (Chowdhury et al., 2022). Women's physical and mental well-being are strained during disasters due to their increased caregiving and household responsibilities (Erman et al., 2021). Gendered social and cultural norms, combined with household and community duties and expectations, exacerbate their negative experiences (Erman et al., 2021). In some instances, the unwillingness of male counterparts and the assumption of maternal roles have led women to bear full responsibilities for their families and homes (Fagen et al., 2011). Gender roles further limited their mobility and access to aid, complicating their recovery and involvement in recovery efforts (Ott et al., 2022). Despite these challenges, women have played crucial roles in fostering community resilience, particularly through their leadership in grassroots recovery and rebuilding initiatives (Saavedra et al., 2023).

Faith plays a vital role in reinforcing survivors' resilience, underscoring its importance in helping them to navigate and overcome challenges. It has been found to be essential in building their inner strength and coping abilities, contributing to the development of individuals' social and cultural capital. This in turn enhances their capacity to recover, rebound, and move forward after a disaster. Faith serves as a protective factor, helping to reduce trauma and facilitate recovery, particularly for those with strong religious involvement (Lomeli-Rodriguez et al., 2024).

In addition to faith, optimism also plays a critical role in recovery. Women who exhibited a high level of optimism were less likely to develop trauma, and showed quicker recovery in terms of both psychological well-being and physical health (Laranjeira & Querido, 2022). Optimism was also associated with greater levels of adaptive coping behaviors such as seeking help, and taking proactive steps to rebuild their lives. Women who maintained an optimistic outlook were more likely to report feelings of agency and control over their recovery, leading to better mental health outcomes in the long term (Cherry et al., 2016).

Another important factor in the recovery process is emotional catharsis. This could involve sharing painful experiences, expressing grief, and processing trauma. Women survivors who were encouraged to openly express their emotions through social networks have been shown to benefit significantly from this practice (Pérez-Gañán et al., 2022). The act of verbalizing distressing events to trusted community members has been associated with lower levels of post-traumatic stress disorder (Fang et al., 2020). This cathartic expression allowed survivors to regain a sense of agency and control over their emotional states, thus aiding in their recovery.

Moreover, the presence of family, friends, and community members is essential for women in managing the physical, emotional, and social challenges posed by a typhoon. Social support buffers the psychological effects of trauma and promotes resilience by providing emotional comfort and practical assistance (Wang et al., 2021). Women often turn to one another for companionship, encouragement, and help in navigating recovery. Social support was the most consistent predictor of positive mental health outcomes among female survivors of Typhoon Haiyan. Social networks were seen as critical in rebuilding a sense of normalcy, offering women emotional resources (Acoba, 2024).

Given the growing number of typhoons in the Philippines, more studies are needed looking at how individuals cope with their lives following each storm. In particular, exploring the experiences of women after disasters is essential, as it can provide valuable insights into their resilience and unique vulnerabilities, thus enabling more inclusive and effective disaster response strategies. This understanding can also inform policies that address gender-specific needs, promote equality, and empower women as active agents of recovery and community rebuilding. These factors have led to this study being conducted to explore the experiences of victims of Typhoon Rai, and how they put their lives back together.

Research Methodology

A qualitative research approach was adopted in this study to explore the lived experiences of disaster victims and their efforts to rebuild their lives, using hermeneutic phenomenology as the guiding research method. Phenomenology is centered on understanding how individuals interpret and make sense of their experiences; in this study, it was specifically applied to the aftermath of a disaster. By focusing on participants' subjective perceptions, the researchers aimed to uncover the essence of their experiences following Typhoon Rai. In-depth interviews were employed as the primary data collection method, allowing participants to convey their personal interpretations and emotional responses to this disaster. This phenomenological approach, which focused on the participants' perspectives, sought to capture the meaning of their lived experiences rather than to present generalized findings.

The research study was conducted in Barangay Danglag, Consolacion Cebu, and Barangay Tinago, Cebu City, respectively, representing rural and urban contexts. The researchers employed purposive criterion sampling to select participants who met specific criteria based on their lived experiences. A total of ten women were chosen, consisting of five from a rural area and five from an urban area. Participants were selected based on their experiences with Typhoon Rai, ensuring that their stories were rooted in shared experiences of this disaster. Table 1 shows the demographic profile of the women survivors according to their age, income profile, and area of residence. The household monthly income reported by the survivors were categorized according to criteria utilized

by the Philippine Institute for Development Studies to determine their income classification. All of them were assigned pseudonyms to protect their identities.

Table 1 *Socio-Demographic Profile of the Participants*

Key Informants	Age (yrs)	Income Profile	Residence Setting
Marites (P1)	45	Low Income (but not poor)	Urban
Anita (P2)	39	Low Income (but not poor)	Urban
Belen (P3)	30	Poor	Urban
Teresa (P4)	38	Low Income (but not poor)	Urban
Lourdes (P5)	48	Poor	Urban
Emma (P6)	42	Lower Middle-Income class	Rural
Vicky (P7)	32	Low Income (but not poor)	Rural
Melinda (P8)	36	Low Income (but not poor)	Rural
Joy (P9)	38	Low Income (but not poor)	Rural
Chona (P10)	31	Low Income (but not poor)	Rural

To gather in-depth insights, semi-structured one-on-one interviews and focus group discussions were used. The semi-structured nature of the interviews allowed participants the freedom to express their experiences and feelings openly, while providing a framework to guide their conversations. The interview guide was designed to encourage reflective responses, and it was rigorously validated through pilot testing and content analysis, leading to revisions to enhance its clarity and effectiveness. To ensure accuracy, all interviews were transcribed verbatim, preserving participants' original words and the nuances of their lived experiences. Data collection continued until saturation was achieved, a key feature in phenomenological research, indicating that no new themes or insights were emerging from the interviews. Confidentiality and privacy were safeguarded throughout the study. All collected data were treated as confidential, and access to the participants' personal information was restricted to the researchers. The information gathered was used solely for research purposes, ensuring the study's ethical integrity.

To analyze the data, the researchers applied the Six-Phase Framework of Thematic Analysis (Braun & Clarke, 2006). It is a well-suited method for analyzing qualitative data in phenomenological research. This process involves becoming deeply familiar with the data, coding it, identifying themes, refining the themes, and producing a coherent report of the findings. The analysis focused on capturing the essence of participants' lived experiences, emphasizing the meanings that they attached to their encounters with disaster and recovery. To ensure the credibility and validity of the findings, a qualified content analyst and psychometrician reviewed the data. The participants were also invited to validate the findings, ensuring that their voices were accurately represented, and that any misinterpretations could be corrected. This validation process, essential in phenomenological research, ensured that the study's conclusions were based on authentic, reliable data, free from researcher bias or misrepresentation. Through this rigorous process, the study achieved a deeper understanding of how disaster victims, referred to as “key informants”, interpreted their experiences and the emotional, psychological, and practical implications of those experiences in their recovery journeys.

Results

This section has two subsections, namely: (a) challenges experienced by the typhoon victims and (b) their coping strategies.

Challenges Experienced by the Female Typhoon Survivors

Interviews with the women typhoon survivors generated three major challenges caused by the typhoon involving social chain disruptions, psychological distress, and social fragmentation.

Theme 1: Social Chain Disruptions. Social chain disruptions refer to breakdowns or significant delays in the delivery of essential goods and services in the aftermath of a disaster. The disruptions resulted in the survivors' struggling to access basic necessities (e.g., electricity, water, food, and shelter). One survivor (Marites), who is a mother, described the situation and stated:

Our roof was blown off and still hasn't been fixed or replaced. It was extended (roof) because our neighbor gave it to us. It has been really tough, and we've suffered a lot—no electricity, no water. We had to search for water.

This statement indicated that the victims experienced a power outage (referred to locally as a "brownout," which typically means a temporary or partial loss of electrical power) and a lack of access to clean water. It further highlighted the immediate challenges faced by survivors in the aftermath of a disaster, where essential utilities—electricity and water—were unavailable, forcing people to wait for restoration.

Another survivor (Teresa) sadly illustrated the damage to their home with the statement: "Our window was really broken, both in our two rooms. Then, the roof of our kitchen was also severely damaged."

She described a chaotic and destructive situation caused by the typhoon. The destruction of homes not only disrupted physical shelters, but also weakened the community's social infrastructure. Displacement of families, loss of daily routines, and separation within the community consequently lead to social fragmentation and reduced ability to support one another. The damage impaired social ties, making it harder for individuals to maintain connections, share resources, and rebuild together, further hindering the community's collective recovery.

Food insecurity, as part of social chain disruptions, was another consequence of the typhoon. This is where survivors lack consistent access to sufficient and nutritious food to meet their basic needs. Lourdes mentioned, there was no food aid! In a related comment, Vicky shared, "we don't have anything to eat if we don't fall in line at the food relief stations." These statements highlighted the scarcity of food and the struggle to obtain it, as exemplified by the absence of aid, along with reliance on food distribution lines.

Additionally, the limited reach of aid, with resources not reaching certain areas, exacerbated the situation, contributing to the persistent hunger and inability to secure adequate nourishment for the affected families. For example, Chona said that "is what I am looking for Water supply does not reach here. It is only until Pulpogan." [Pulpogan is an area nearby where she lives]. As an alternative, Belen stated, "no choice, we just heated the water to drink. It's so hard!" These statements suggested that in addition to the insufficient distribution of essential resources, there were instances where these resources failed to reach their intended destinations. This exacerbated the situation, contributing to the persistent hunger and inability to secure adequate nourishment for the affected families.

This disparity in aid distribution and inefficiency of logistical support must be addressed to prevent inequities in disaster recovery. A more coordinated effort to ensure that relief supplies are delivered to all survivors, particularly those in hard-to-reach areas, is crucial for a more equitable recovery process.

Survivor experiences highlighted the significant challenges posed by social chain disruptions following a disaster. These disruptions impacted not only the physical survival of the affected populations, but also their social cohesion and psychological well-being. The findings suggest that enhancing disaster recovery systems, particularly focusing on the swift restoration of basic services, equitable distribution of resources, and rebuilding community networks, could greatly improve recovery outcomes. Ensuring that these elements are prioritized in disaster management policies would foster resilience and promote quicker, more effective recovery by survivors.

Theme 2: Psychological Distress. Psychological distress refers to the emotional suffering and mental health challenges experienced by victims following a traumatic event, such as Typhoon Rai. In this context, it was manifested as fear, anxiety, stress, and trauma, stemming from life-

threatening experiences, such as facing strong winds and the destruction caused by the disaster. Survivors expressed ongoing emotional struggles, including heightened fear and feelings of helplessness. Many survivors were left scared and traumatized by their experiences. One survivor, a mother named Teresa, shared her story during the disaster. She stated: "My child got scared. She was crying "Maaa," and it seemed like she was traumatized by it. We were traumatized too, that's why we say that whenever there's a storm, we get scared. Who wouldn't be scared of that?"

The statement described a frightening event that left a lasting emotional impact, causing fear whenever a similar situation arises. This experience was so intense that it triggered a strong, lasting reaction, leading to anxiety regarding the future occurrence of similar events. Her neighbor, Lourdes, added, "we were scared because we were facing the wind directly! They were afraid because they were positioned in a place facing the wind."

As the survivors dealt with the worst part of the typhoon, they could not avoid being distressed. It is common to see emotional struggles, stress, anxiety, and trauma after such disasters or tough experiences. The lack of psychological intervention following disasters represents a significant disaster response and recovery deficiency. Without adequate psychological intervention, these experiences can lead to enduring mental health effects that significantly impact victims' overall well-being and ability to recover.

It is crucial to integrate psychological support into disaster response frameworks, as mental health interventions can help survivors to process trauma, reduce long-term distress, and facilitate a healthier recovery process. The emotional challenges, particularly fear, anxiety, and trauma, illustrate the profound impact that such events can have on mental health. By prioritizing psychological care and incorporating it into recovery programs, communities can enhance resilience and improve the overall recovery process for disaster survivors.

Theme 3: Social Fragmentation. Social fragmentation in this context can be defined as a breakdown of cohesion and cooperation within a community, often observed in the aftermath of a disaster. This phenomenon is characterized by a lack of mutual support, strained relationships, and diminished collective action, as illustrated by survivors feeling isolated in their struggles and receiving little to no assistance from neighbors. Melinda narrated her experiences during the typhoon and in its aftermath. "I expected that our neighbors will help me. I was the only one who hauled our stuff. They were just laughing at me."

The absence of unity hindered effective recovery efforts, prolonged vulnerability, and highlighted the critical need for fostering solidarity and collaboration as essential components of disaster preparedness and response. In contrast, communities that fostered unity and cooperation demonstrated quicker and more effective recovery, highlighting the importance of addressing disunity as a crucial aspect of disaster preparedness and response.

Disaster recovery efforts must emphasize the strengthening social bonds and promotion of a culture of mutual support to ensure more resilient and quicker recovery for all affected individuals. Social fragmentation hampers individual recovery, and undermines a community's overall ability to bounce back. Promoting solidarity, cooperation, and mutual assistance should be central to disaster preparedness strategies. By addressing these social dynamics, communities can enhance resilience and ensure more effective and equitable recovery processes.

Coping and Recovery Strategies

The coping and recovery strategies among the women typhoon survivors included faith-based coping, cultivating optimistic mindsets, emotional catharsis, and social support.

Theme 1: Faith-based Coping. This pertained to the strength and determination that individuals derive from their spiritual beliefs, enabling them to overcome challenges and recover from adversity. Rooted in trust in a higher power, this form of resilience provides emotional stability, psychological healing, and a sense of purpose during difficult times. As illustrated, survivors of

Typhoon Rai relied on their faith to navigate trauma and hardship, finding solace and hope in their spirituality. This was aligned with research emphasizing spirituality as a vital support system that fosters a strengthened sense of identity, and facilitates recovery by offering emotional reassurance and a framework for coping with life's uncertainties. Anita expressed that by placing her trust in God, she surmounted the challenges brought about by the typhoon. She stated: "I can only say that I have to trust the Lord, maybe the Lord will give me (something) because I have been through it all." Her steadfast faith and confidence in a higher power gave her the resilience and determination to overcome the effects of the typhoon.

Another survivor, Chona, explained that she had recovered mentally through her faith. She stated, because "if you have God, in that time when I was traumatized but then it will be gone." Her path from trauma to healing exemplified the profound impact of spirituality as the initial trauma progressively faded, allowing for emotional and psychological rehabilitation.

Faith-based coping was a powerful tool for disaster survivors, especially women, to reclaim their strength and resilience. The emotional and psychological benefits of faith offered not only comfort, but also a stable foundation for recovery. These findings highlight the need for disaster response strategies to recognize and integrate spiritual coping mechanisms, providing survivors with a sense of agency and hope. By leveraging faith as a psychological resource, disaster management programs can enhance emotional recovery, and facilitate a more holistic approach to healing.

Theme 2: Cultivating Optimistic Mindset. A shared characteristic observed in the experiences of individuals facing adversity and natural catastrophes was the capacity for an optimistic mindset. The majority of survivors expressed a belief that adopting an optimistic mindset was advantageous in navigating difficulties. As an example, one survivor asserted: "Yes, we overcame it because we have children. If we don't stay positive, we won't be able to move forward. Yes, I realized that, that's how we overcame it."

This mindset enabled individuals to focus on possibilities and solutions rather than dwelling on difficulties, which fostered resilience and mental recovery. Survivors demonstrated the significance of optimism as essential for survival.

Fostering an optimistic mindset can play a pivotal role in disaster recovery programs. Optimism can help individuals, particularly women, develop adaptive coping strategies and mental resilience. By integrating interventions that encourage optimism, disaster response efforts can provide survivors with the mental tools necessary to navigate the aftermath of a disaster, leading to improved psychological outcomes and overall well-being.

Theme 3: Emotional Catharsis. The ability to articulate and alleviate feelings of tension is crucial for enhancing one's emotional well-being. One survivor (Emma) noted that she went through emotional release by crying and engaging in a conversation with her spouse, a process called "emotional catharsis." It is the releasing and expressing pent-up emotions to alleviate psychological tension and enhance emotional well-being. It involves openly sharing feelings, often through crying or discussing concerns with a trusted individual, as one participant highlighted by describing how she cried and voiced her emotions to her spouse. This practice exemplified the therapeutic benefits of emotional vulnerability and confiding in someone who provides support and understanding. Another survivor (Chona) indicated that she went through emotional release by crying and engaging in a conversation with her spouse:

"I just cried. Then I said to myself, 'I need someone to talk to. I have something to tell to my husband.' He just told me, 'That's how life is.' I even thought, 'It's easy for those who are dead, right?'"

In her situation, engaging in these activities with her partner was a crucial means of emotional expression. Voicing her feelings and displaying emotional vulnerability exemplified the therapeutic value of confiding in a trusted individual, and openly discussing one's deepest thoughts and concerns.

Encouraging survivors to engage in emotional catharsis, whether through crying or confiding in trusted individuals, can be an essential component of mental health interventions. Offering spaces for emotional expression and ensuring access to supportive relationships can foster resilience and accelerate the recovery process, particularly in the aftermath of traumatic events such as natural disasters.

Theme 4: Social Support. Receiving social support from both the family and the community is crucial for duals to facilitate their recovery process following a traumatic experience. The majority of participants reported receiving various types of social support and solidarity. Joy disclosed that parents helped to facilitate her family's recovery. She expressed: "This is my husband's share from his father. It became big (sari-sari store) because it was bought by my in-laws, by my siblings-in-law."

Vicky expressed gratitude towards their neighbor: "It's been a long time, and we still haven't been able to rebuild. In fact, our roof was extended because our neighbors helped us. We are grateful to them for assisting us." This indicated that neighborly and community support played a vital role in recovery. These gestures not only provided physical help, but also had an emotional impact by showing that people cared for each other in times of hardship. Gratitude and solidarity helped create a sense of shared responsibility and resilience, even in difficult situations.

This reflected the value of familial assistance as a pivotal element in commencing a new beginning. Whether through emotional comfort or practical aid, these collective support systems were pivotal in aiding individuals through their recovery journeys following a traumatic experience.

The findings highlighted the profound impact that social support can have on the recovery process. This emphasized the importance of fostering strong social networks in disaster preparedness and recovery frameworks. Providing mechanisms for families and communities to connect and assist one another, whether through emotional or material support, is crucial for enhancing resilience. Additionally, integrating family and community-based support structures into disaster response systems could greatly reduce the psychological toll on survivors, and ensure a more holistic and faster recovery process. In practical terms, encouraging local community programs that nurture familial ties and cooperative support could significantly contribute to survivors' immediate and long-term recovery.

Discussion

This study highlighted the multifaceted challenges and coping strategies experienced by survivors of Typhoon Rai, offering insightful views of the disaster's aftermath and recovery processes. The challenges identified included social chain disruptions, psychological distress, and social fragmentation, while the coping strategies revolved around faith-based coping, cultivating optimistic mindsets, emotional catharsis, and social support.

One significant challenge faced by the victims was the disruption of social chains, particularly access to basic needs such as food, water, electricity, and shelter. Victims reported frustrations over insufficient aid and uneven resource allocation, emphasizing a need for more robust and equitable disaster management systems. These logistical challenges compounded the struggles of affected individuals and communities, delaying recovery efforts. These disruptions not only affected the physical survival of affected communities, but also hindered their social unity and psychological health, which are vital mechanisms for improving the subjective well-being of survivors (Hamama-Raz et al., 2017). The findings indicated that strengthening disaster recovery systems—especially by prioritizing the rapid restoration of essential services, fair distribution of resources, and rebuilding community ties—could significantly enhance recovery outcomes. Focusing on these aspects in disaster management policies would foster resilience and facilitate a faster, more efficient recovery for survivors.

Psychological distress was another major issue, as survivors dealt with trauma, anxiety, and stress reactions. These findings were consistent with Makwana's study (2019), which emphasized

the long-term mental health impacts of natural disasters. The psychological toll extended beyond individuals, creating a pervasive sense of instability and fear within communities. Addressing these mental health issues is crucial for enabling comprehensive recovery (Usami et al., 2018; Roudini et al., 2017). As survivors confronted the aftermath of the typhoon, emotional distress was inevitable. It is common for individuals to experience emotional struggles, stress, anxiety, and trauma following such catastrophic events.

The absence of psychological interventions in the aftermath of disasters highlights a significant gap in disaster response and recovery efforts. Without proper mental health support, these emotional challenges can lead to long-lasting mental health consequences, affecting survivors' overall well-being and their ability to recover. Integrating psychological support into disaster response frameworks is essential, as mental health interventions can help survivors process their trauma, alleviate long-term distress, and promote a healthier recovery process. By prioritizing psychological care and incorporating it into recovery programs, communities can bolster resilience and enhance the overall recovery experience for disaster survivors.

Social fragmentation emerged as a critical barrier to effective recovery, consistent with previous findings (e.g., Moatty et al., 2021). Many participants reported feeling isolated and unsupported by their communities. This lack of cohesion and unity among neighbors hindered and prolonged collective recovery efforts. Rebuilding community ties was essential for fostering resilience and a quicker return to normalcy (Ma et al., 2023).

By contrast, communities prioritizing unity and cooperation tended to recover more quickly and effectively, highlighting the necessity of addressing disunity as a key factor in disaster management. Strengthening community bonds is vital to overcoming adversity. Disaster recovery efforts must place greater emphasis on reinforcing social connections and cultivating a culture of mutual support to ensure a faster, more resilient recovery for all individuals affected (Joseph et al., 2021). Social fragmentation not only delays individual recovery, but also diminishes the collective ability of a community to rebound. Promoting solidarity, cooperation, and mutual aid should therefore be central to disaster preparedness strategies. By focusing on these social dynamics, communities can enhance their resilience and ensure a more effective and equitable recovery for everyone involved.

In terms of coping strategies, faith-based coping played a central role in helping survivors to navigate their challenges (Baidhaw, 2015). Many participants drew strength from their trust in God, which provided emotional stability and hope. Spirituality is a powerful source of resilience. Faith enabled survivors to persevere, even in the face of adversity. Faith-based coping proved to be a powerful tool for disaster survivors, particularly women, in restoring their strength and resilience. The emotional and psychological advantages of faith provided not only comfort, but also a solid foundation for recovery. These findings underscored the importance of disaster response strategies that acknowledge and incorporate spiritual coping mechanisms, offering survivors a sense of agency and hope. By utilizing faith as a psychological resource, disaster management programs can foster emotional recovery and support a more comprehensive approach to healing.

Another coping strategy was cultivating an optimistic mindset. Survivors believed that maintaining a positive outlook was essential for survival and recovery. This was aligned with research by Bisson et al. (2017), which emphasized the efficacy of cognitive strategies like positive reappraisal in managing psychological challenges. Optimism became a shared characteristic among those facing adversity, reinforcing their ability to overcome struggles. This mindset allows individuals to focus on possibilities and solutions instead of fixating on challenges, thereby promoting resilience and psychological recovery. Survivors showcased the critical importance of optimism for survival. By incorporating interventions that promote optimism, disaster response efforts can equip survivors with the mental tools needed to cope with the aftermath of a disaster, resulting in better psychological outcomes and enhanced overall well-being.

Emotional catharsis was also crucial for participants' mental well-being (Honeycutt et al., 2008). Survivors described the therapeutic value of crying, confiding in trusted individuals, and openly discussing their struggles. These actions provide emotional relief and facilitate healing. Encouraging

survivors to engage in emotional catharsis, whether through crying or confiding in trusted individuals, can play a crucial role in mental health interventions. Providing opportunities for emotional expression and ensuring access to supportive relationships can build resilience and facilitate a quicker recovery process, especially in the aftermath of traumatic events such as natural disasters.

Lastly, social support played a pivotal role in recovery. The survivors highlighted the importance of family, community, and organizational support in helping them rebuild their lives. This finding was consistent with Bryant et al. (2019), who emphasized the significance of social support networks in disaster recovery. Collective solidarity strengthens survivors' ability to recover and move forward, showcasing the importance of strong interpersonal connections during times of crisis. These findings underscored the significant role of social support, especially from family, in facilitating the recovery process. This highlights the need to strengthen social networks within disaster preparedness and recovery strategies. Creating opportunities for communities and families to connect and offer emotional or practical assistance is vital for building resilience. Furthermore, incorporating family- and community-based support systems into disaster response efforts can alleviate the psychological impact on survivors and promote a more comprehensive and swifter recovery. In practical terms, fostering local community initiatives that strengthen family bonds and collective support can greatly aid in both the immediate and ongoing recovery of survivors.

The findings point out the need for systemic improvements in disaster response, particularly in ensuring the equitable allocation of resources and strengthening mental health support systems. Fostering community cohesion and promoting coping strategies are vital, especially for women. These insights can inform the development of comprehensive disaster preparedness and recovery frameworks that prioritize both physical needs and emotional well-being. In this context, faith-based coping, cultivating optimistic mindsets, emotional catharsis, and social support are interconnected factors that play a significant role in enhancing an individual's ability to cope with stress and adversity. Together, these factors form a holistic approach to emotional and psychological resilience among women.

Conclusion and Recommendations

The study provides an insightful understanding of the unique challenges and coping strategies experienced by women survivors of Typhoon Rai. They faced a lack of essential resources, delayed government responses, and insufficient psychological support, underscoring the need for more efficient and empathetic disaster response efforts. Faith-based comfort was a crucial coping strategy, providing hope and emotional strength to the Cebuano women survivors, with support of family and community playing an essential role in fostering recovery. There was a lack of sensitivity in some social interactions, with feelings of isolation and neglect heightened by the disaster, making the role of empathetic social support even more critical. Recovery should extend beyond rebuilding infrastructure to addressing emotional, psychological, and social needs.

Effective disaster management should integrate material aid with emotional support, including mental health interventions, faith-based practices, optimism, and social networks. To support recovery efforts, a multi-pronged approach is essential. Immediate interventions, such as stress debriefing sessions and the mobilization of mental health professionals, are critical for providing psychological aid to survivors. Additionally, local government units must streamline disaster response systems to ensure that resources and financial assistance are provided promptly, enabling critical interventions to be carried out effectively. Training government workers to understand and address the psychological needs of women survivors would also ensure a more compassionate response. Alongside these efforts, maintaining faith-based practices can offer a strong foundation of comfort and strength for survivors. Whether through prayer, meditation, or participation in a religious community, nurturing spiritual beliefs helps to build resilience during difficult times, providing emotional stability and a sense of purpose.

The significance of this study lies in its ability to illustrate the nature of recovery, emphasizing that it goes beyond merely restoring physical infrastructure. Effective recovery as perceived by women survivors must address emotional, psychological, and social needs alongside the material ones. The implications of these findings stress that disaster management must integrate both material and emotional dimensions to ensure that responses are not only resource-based, but that they are also culturally and emotionally sensitive. The interconnectedness of faith, optimism, emotional expression, and social support emerged as essential elements for fostering resilience, enabling women survivors to heal and rebuild after Typhoon Rai. This study calls for a more holistic approach to disaster recovery—one that combines practical assistance with emotional and psychological support, to promote long-term healing and well-being for women survivors.

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The Effects of Blended Learning Management in Earth Science on Learning Achievement and Digital Skills of Grade 4 Students at Ekamai International School

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Abstract

Aim/Purpose: This study examined the impact of blended learning on science learning achievement and digital skills among Grade 4 students at Ekamai International School, Bangkok. Specifically, it aimed to determine whether there were significant differences in academic performance and digital competency before and after the intervention. By evaluating these outcomes, the study provides insights into the effectiveness of blended learning in enhancing students' understanding of Earth Science and fostering essential digital skills. Additionally, it sought to explore how blended learning influences conceptual understanding, retention, and engagement in elementary science education. The study also examined the role of blended learning in developing students' ability to effectively utilize digital tools for research, communication, and presentations. Furthermore, it aimed to identify best practices for implementing blended learning in elementary classrooms, offering empirical data to inform curricular design and instructional methodologies. By investigating students' perceptions and experiences, this research evaluated the extent to which blended learning impacts motivation, self-directed learning, and overall classroom engagement. The findings of this study contribute to the growing body of knowledge on blended learning in elementary education, providing recommendations for educators and policymakers on optimizing its integration to improve student learning outcomes.

Introduction/Background: Blended learning combines traditional face-to-face instruction with online learning components, creating a flexible and interactive educational experience. This approach has gained attention for its potential to enhance student engagement, achievement, and digital competency by integrating technology into learning. In science education, where critical thinking and digital literacy are essential, blended learning offers opportunities for deeper understanding through multimedia resources, virtual simulations, and interactive activities. While research has demonstrated its benefits in secondary and higher education, its application in elementary education remains underexplored, particularly in improving digital skills and fostering student-centered learning.

Science education plays a crucial role in developing students' problem-solving abilities and inquiry-based learning skills, yet traditional teaching methods often rely on passive instruction that may not fully engage young learners. Blended learning addresses these limitations by providing personalized instruction, self-paced learning, and technology-enhanced activities that support conceptual understanding. Despite the increasing integration of technology in education, there is limited research on how blended learning impacts elementary students' academic performance and digital literacy in Thailand. This study seeks to fill this gap by assessing the effects of blended learning in the Earth Science course for Grade 4 students at Ekamai International School, Bangkok. By examining students' achievement and digital competency before and after the intervention, this research aimed to provide insights into the effectiveness of blended learning in elementary science education and inform best practices for its implementation.

Methodology: This study employed a quasi-experimental one-group pre-test and post-test design to assess the impact of blended learning on science learning achievement and digital skills among 20 Grade 4 students from Ekamai International School, selected through cluster random sampling. The intervention consisted of five Earth Science lessons using a flipped classroom model, spanning 40

instructional hours over ten weeks. Students engaged with online materials before participating in in-class sessions, which focused on hands-on interactive activities. Pre- and post-tests measured changes in science learning achievement and digital skills, using a standardized test and a digital competency assessment. Both instruments were validated for reliability and content accuracy. Paired *t*-tests were conducted to compare pre-test and post-test scores, with a significance level of $p < 0.05$, to determine whether blended learning significantly enhanced students' academic performance and digital literacy. The findings contribute to understanding how blended learning can support elementary science education and digital competency development.

Findings: 1. Science Learning Achievement: The results revealed a statistically significant improvement in students' post-test scores compared to their pre-test scores ($p < .05$). The effect size of the difference using Cohen's *d* was 2.30, which is considered a large effect size. This indicates that the blended learning approach effectively enhanced their understanding of Earth Science topics.

2. Digital Skills: No statistically significant difference was observed in students' digital skills before and after the intervention ($p > .05$). The effect size of the difference using Cohen's *d* was 0.41, which is considered a small effect size. This suggests that while the blended learning approach enriched science achievement, its impact on digital skills was not as pronounced within the study's timeframe.

Contribution/Impact on Society: This study contributes to the body of knowledge by providing empirical evidence on the efficacy of blended learning at the elementary level. The findings underscore its potential to improve academic outcomes in science education, while highlighting areas for further development in fostering digital skills. The results offer valuable insights for educators and policymakers who aim to integrate technology into early education, ensuring alignment with 21st century learning demands.

Recommendations: 1. For Practitioners: Implement blended learning models, such as the flipped classroom, in elementary science education to enhance student engagement and achievement. Provide structured guidance to improve digital skills through targeted activities.

2. For Researchers: Explore the long-term effects of blended learning on digital skills and its application across diverse subjects and age groups. Investigate methods to optimize the integration of digital literacy components into lesson plans.

Research Limitations: This study was constrained by its small sample size (20 students), lack of a control group, and short intervention duration (40 hours). The focus on a single subject, Earth Science, and the specific setting of an international school in Bangkok limits the generalizability of findings. Additionally, the study employed only the flipped classroom model, excluding other blended learning approaches that might yield different outcomes.

Future Research: Future studies might consider:

1. Expanding sample sizes and including diverse educational settings to improve generalizability.
2. Extending intervention durations to examine long-term effects on digital skills.
3. Exploring blended learning's impact across multiple subjects and incorporating advanced digital competencies such as coding and multimedia production.
4. Comparing the flipped classroom with other blended learning models to identify the most effective approaches for elementary education.

Keywords: *Blended learning, science learning achievement, digital skills*

Introduction

The rapid advancement of technology has catalyzed significant transformations in education, particularly in the domain of science learning. Blended learning, which integrates traditional classroom instruction with online platforms, has emerged as a promising pedagogical approach to enhance student engagement, academic achievement, and digital literacy. This model, characterized by its flexibility and student-centered design, allows learners to access online and in-person content,

fostering autonomy and self-directed learning while improving educational outcomes (Iyer et al., 2024; Smith & Hill, 2019).

Science education plays a crucial role in cultivating critical thinking, problem-solving skills, and scientific literacy, all of which are essential for success in the 21st century. Integrating online programs into blended learning environments adds a new dimension to traditional science education by offering opportunities for personalized learning and leveraging digital tools to deepen students' understanding of scientific concepts. Despite substantial evidence supporting the benefits of blended learning in secondary and higher education, there remains a lack of research exploring its impact on elementary students, particularly in science education.

This study addresses this gap by examining the effects of a flipped classroom model, a specific form of blended learning, on Grade 4 students at Ekamai International School in Bangkok, Thailand. The research aimed to determine whether implementing this model significantly enhances students' science learning achievement and digital skills. The flipped classroom model inverts traditional teaching practices by introducing instructional content outside the classroom, while using in-class time for hands-on, interactive activities. This approach aligns with constructivist principles, encouraging active learning and critical engagement with content.

By synthesizing findings from existing literature and conducting empirical analysis, this study sought to provide evidence-based insights into the effectiveness of blended learning in elementary science education. The results are expected to inform instructional practices, curriculum design, and policy-making, offering practical implications for educators and policymakers striving to optimize learning environments in an increasingly digital age. Furthermore, the study contributes to the growing discourse on educational innovation, emphasizing the potential of blended learning to prepare students for the demands of a technology-driven global society, particularly in the wake of the COVID-19 pandemic, which has accelerated the adoption of online and hybrid learning models.

Research Objectives and Questions

This study aimed to:

1. Evaluate whether the blended learning approach significantly improves science learning achievement in the topic of Earth Science among Grade 4 students.
2. Examine the impact of blended learning on the development of digital skills, including online research, word processing, presentation creation, and Internet safety, in Grade 4 students.
3. Provide evidence-based insights into the potential of blended learning to enhance elementary science education and to equip students with essential digital competencies.
4. Contribute to a broader understanding of blended learning's applicability and effectiveness in elementary education, particularly in science-related subjects.

The objective of this research was to investigate the effects of implementing a blended learning approach on Grade 4 students' science learning achievement and digital skills at Ekamai International School in Bangkok, Thailand.

To achieve these objectives, the study sought to answer the following research questions:

1. Does the implementation of a blended learning approach significantly improve science learning achievement in the topic of Earth Science among Grade 4 students?
2. Is there a statistically significant difference in digital skills development among Grade 4 students before and after implementing blended learning?

Literature Review

The integration of technology into education has brought about a significant shift in teaching and learning practices, particularly in the domain of science education. Blended learning, which merges traditional face-to-face instruction with online components, has gained attention as a transformative pedagogical approach. This section reviews the theoretical framework, empirical findings, and gaps in the literature to provide a foundation for examining the effects of blended learning, specifically the flipped classroom model, on elementary students' science learning achievement and digital skills.

Theoretical Framework

Blended learning is rooted in constructivist theories, particularly those proposed by Piaget and Vygotsky. Piaget's theory of cognitive development emphasizes the active role of learners in constructing knowledge through experiences and interactions with their environment (Piaget, 1971). Similarly, Vygotsky's social constructivism highlights the significance of collaboration and the Zone of Proximal Development, which enables learners to achieve higher levels of understanding with the guidance of more knowledgeable peers or instructors (Vygotsky, 1978). These theories support the design of blended learning environments, where students engage with digital tools and collaborative activities to comprehend scientific concepts better.

Blended Learning in Science Education

Science education is critical in developing problem-solving, critical thinking, and scientific literacy skills. Blended learning, which integrates traditional face-to-face instruction with digital learning experiences, has gained increasing recognition in elementary education. This approach allows students to benefit from personalized learning while maintaining collaborative classroom interactions. Research has indicated that blended learning improves student engagement, comprehension, and achievement in science education (Graham, 2013).

Blended learning in elementary education typically combines synchronous and asynchronous learning methods, utilizing digital platforms, multimedia resources, and interactive activities. By allowing learners to access content online, offline, or in person, blended learning enhances classroom instruction by redesigning the learning environment to provide greater freedom and adaptability to students (Iyer et al., 2024). Research has shown that blended learning approaches, such as the flipped classroom model, improve engagement and comprehension by shifting passive content outside the classroom and utilizing class time for interactive, hands-on activities (Bishop & Verleger, 2013). This method aligns with inquiry-based learning practices, fostering active exploration and real-world problem-solving (Dewey, 1938). Purnama et al. (2023) conducted a systematic literature review highlighting the various models of blended learning, with the flipped classroom emerging as the most common approach. Their study identified that integrating digital tools with traditional instruction enhanced conceptual understanding and student motivation in science education. Furthermore, Stockwell et al. (2015) found that blended learning environments provided opportunities for active learning, improving science education outcomes through digital engagement.

Several studies have examined the effectiveness of blended learning in enhancing student performance in science subjects. Empirical evidence has indicated that blended learning positively impacts academic performance. For instance, Means et al. (2013) found that students in blended learning environments achieved better learning outcomes than those in traditional settings. Similarly, Hwang et al. (2019) demonstrated that elementary students who engaged in blended learning environments exhibited higher academic achievement compared to those in traditional settings. The flexibility and interactive nature of digital tools allowed for more personalized instruction, addressing diverse student learning needs. Seage and Türegün (2020) analyzed the impact of blended learning on science, technology, engineering and mathematics (STEM) education, and found that students who participated in blended science learning outperformed their peers in standardized assessments. These findings underscore the positive correlation between blended learning strategies and improved academic outcomes in science education.

Blended learning not only improves academic performance, but also fosters creativity and student engagement. The use of digital tools in blended learning has been shown to enhance student engagement and motivation, essential factors for effective science education (Garrison & Vaughan, 2008). Miskiah et al. (2020) investigated how blended learning influenced creativity and activeness in elementary students, concluding that the integration of digital and hands-on activities promoted a more engaging and stimulating learning environment. The study emphasized that students in blended classrooms displayed higher levels of curiosity and problem-solving skills. Anthony (2019) further

supported these findings, indicating that the combination of traditional teaching best practices with blended learning enhanced student interaction, collaboration, and engagement.

The Flipped Classroom Model

The flipped classroom model is a widely recognized form of blended learning that reverses the traditional teaching structure by delivering instructional content online before class, and utilizing class time for active, collaborative learning (Tucker, 2012). This approach has been shown to improve student engagement, retention, and academic performance, particularly in science education (Lee & Yeung, 2021). By shifting content delivery outside the classroom, students can engage in discussions, problem-solving activities, and hands-on projects during in-person sessions, allowing for a more interactive and student-centered learning experience (Bergmann & Sams, 2012).

The flipped classroom model is aligned with inquiry-based learning, encouraging students to actively explore concepts and apply their knowledge in real-world problem-solving contexts (Dewey, 1938). It also supports differentiated instruction, offering flexibility for students who require additional time to process information or prefer independent learning (Abeysekera & Dawson, 2015). Research has demonstrated that flipped learning enhances critical thinking and problem-solving skills as students engage more deeply with content through active classroom participation (Chen et al., 2014). Say and Yildirim (2020) further highlighted that this approach fosters collaborative learning, improving student interaction and teamwork in science education.

However, successful implementation of the flipped classroom requires careful planning. Studies have emphasized the importance of teacher facilitation and well-structured digital content to maximize learning outcomes (Lee & Yeung, 2021). Wasriep (2022) examined frameworks for implementing the flipped classroom in primary science education, concluding that teacher training and student readiness are crucial for effective adoption. Similarly, Sharfun and Jung (2024) found that continuous professional development and coaching partnerships significantly influenced preservice teachers' ability to integrate flipped learning strategies effectively.

Despite its benefits, the flipped classroom model presents challenges. Increased preparation time for teachers, the need for student self-discipline, and potential difficulties in adapting younger learners to self-paced digital learning have remained key concerns (Bishop & Verleger, 2013). Without adequate preparation, students may struggle to participate in classroom activities, reducing the effectiveness of the flipped model (O'Flaherty & Phillips, 2015). Additionally, while the model is well-researched in secondary and higher education settings, its application in elementary science education remains underexplored (Wasriep, 2022). Future studies should further investigate its impact on younger students, best practices for implementation, and how to optimize blended learning strategies in primary education.

Digital Skills Development

Digital literacy is increasingly recognized as an essential competency in modern education, equipping students with the skills necessary to navigate both academic and professional environments. Blended learning serves as a powerful approach to fostering digital skills, integrating online research, word processing, and presentation software into students' learning processes (Smith & Hill, 2019). In elementary education, these competencies include information literacy, communication, digital content creation, safety, and problem-solving, all of which are essential for academic success and future careers (Redecker, 2017). Early exposure to digital tools enables students to critically evaluate and responsibly use digital resources (Hobbs, 2010), fostering critical thinking, creativity, and responsible digital citizenship. However, the digital divide remains a significant challenge, as unequal access to technology can limit opportunities for skill development, particularly for students from disadvantaged backgrounds (Livingstone & Helsper, 2007).

The effectiveness of digital literacy instruction depends on structured curriculum design and teacher proficiency in digital technologies. Tondeur et al. (2017) stressed that teachers' pedagogical beliefs strongly influence their use of technology in the classroom, underscoring the need for

professional development programs to support effective implementation. Similarly, Erwin and Mohammed (2022) found that structured digital literacy instruction led to increased skill proficiency among students, reinforcing the importance of teacher training and resource allocation. Rakisheva and Witt (2023) emphasized the need for integrating digital competence frameworks into teacher education programs to ensure that educators are well-equipped to facilitate digital learning. Without sufficient teacher support and technological resources, students may not fully develop the necessary digital skills to thrive in an increasingly digital world.

Despite its advantages, digital literacy education in elementary schools faces challenges, including access disparities, insufficient teacher training, and concerns regarding student safety in online environments. Walters et al. (2019) stressed the importance of teaching digital citizenship, ensuring that young learners understand ethical online behavior, data privacy, and cyberbullying prevention. Additionally, Osmani and Tartari (2024) highlighted the impact of digital technology on learning outcomes, showing that while technology can enhance engagement and motivation, its effectiveness depends on how well it is integrated into teaching methodologies. Addressing these challenges requires collaboration between educators, policymakers, and parents to create a balanced and inclusive digital learning environment that prepares students for future technological advancements while ensuring equitable access and responsible use of digital tools.

Research Gaps and Implications

While the benefits of blended learning and the flipped classroom model are well-documented in secondary and higher education, there is limited research on their effectiveness in elementary science education. This gap is significant, as younger students may have different learning needs and require tailored approaches to effectively engage with blended learning environments (Means et al., 2013). Furthermore, the interplay between blended learning and digital skills development at the elementary level remains poorly understood, despite the growing importance of these competencies in a technology-driven society.

Research Methodology

This study employed a quasi-experimental design with a one-group pre-test and post-test approach to evaluate the effects of a blended learning model, specifically the flipped classroom, on Grade 4 students' science learning achievements and digital skills. The quasi-experimental design was chosen to assess changes in the dependent variables before and after the intervention, while maintaining the integrity of the natural classroom setting. The use of a single-group design ensured that all participants were exposed to the same instructional methods, avoiding potential variability between groups. The pre-test and post-test approach with intervention in between was implemented to ensure that the results would represent those from a flipped classroom approach for the topic of Earth Science. No other approaches, such as a control group or any other treatment, were involved. Even if the students were to gain some knowledge or improvement via other methods, such as from extracurricular classes or private tutoring, its effect would have been small, and would not have any statistically significant effects on the other students or the test results. The researcher explained the research process and method to the parents, students, and administrators before the experiment commenced. Both parents and students were informed about the research projects, and parental consent was given. The confidentiality of student personal data, such as identity and academic performance, was protected. Parents and students were assured of fair treatment and transparency throughout the research process.

Population and Sample

The population for this study comprised 118 Grade 4 students enrolled at Ekamai International School in Bangkok, Thailand, during the 2024 academic year. During the study, all Grade 4 students received the same treatment utilizing a blended learning approach to avoid bias and complication. A one-group pre-test and post-test quasi-experiment design was chosen for this study in order to study

a single group of participants before and after the intervention. This was considered a quasi-experiment since there was no control group comparison.

The sample group was obtained by cluster random sampling. The 118 students were randomly arranged into mixed-ability groups of 6 class sections, ranging from Section A to G. Each group had approximately 20 representatives. Of the six groups of the total population; one group of 20 students was randomly selected to be used in the experiment and was able to represent the entire population because all six groups had similar characteristics.

Research Instruments

This study utilized three primary instruments; three experts with education backgrounds and extensive teaching experience evaluated the Item-Objective Congruence (IOC) value for each instrument.

1. **Blended Learning Lesson Plans:** Five Earth Science lesson plans, each designed for the flipped classroom model, were developed and implemented over ten weeks. These plans included pre-class online materials (e.g., videos, readings) and in-class collaborative activities (e.g., group discussions, experiments). The content covered Earth's layers, earthquakes and volcanoes, weathering and erosion, rocks and minerals, and fossils, aligning with the Next Generation Science Standards (NGSS).

2. **Science Learning Achievement Test:** A standardized test developed by the researcher measured students' understanding of Earth Science concepts. The test included 30 multiple-choice questions, 14 labeling exercises, and five short-answer questions. The test's content validity was evaluated using Item-Objective Congruence (IOC), with input from subject matter experts (Rovinelli & Hambleton, 1977). The IOC of the Science Learning Achievement test was .97, and the Reliability analysis for the science learning achievement test produced a Kuder-Richardson (KR-20) of .721 (Part 1), .929 (Part 2), and Cronbach's alpha coefficient of .626 (Part 3).

3. **Digital Skills Test:** This test, consisting of 20 multiple-choice questions, assessed students' competencies in word processing, online research, presentation software (e.g., Google Slides), and Internet safety. The test was validated through expert review with an IOC of 1.00, and reliability analysis using Kuder-Richardson (KR-20) of .672, ensuring it was aligned with study objectives (Tavakol & Dennick, 2011).

Data Collection Procedures

The study was conducted over 40 hours during the first quarter of the 2024-2025 academic year, starting on August 13 and ending on October 3, 2024. The students studied science for four hours per week for 10 weeks. Hence, the students were expected to attend the class for 40 hours during the quarter. The procedures included:

1. **Pre-test Administration:** Before the intervention, baseline data on science learning achievement and digital skills were collected using standardized tests. The researcher/teacher at the school administered and monitored this pre-test before the lesson began.

2. **Implementation of Blended Learning:** The flipped classroom model was applied, with students engaging in pre-class online activities and participating in interactive, hands-on activities during class sessions.

3. **Post-test Administration:** Following the intervention, the researcher/teacher administered the same standardized tests to evaluate changes in the dependent variables. The post-test was given as a quarterly examination after the lessons.

Data Analysis

Quantitative data from the pre-tests and post-tests were analyzed using paired sample *t*-tests to determine whether the intervention produced statistically significant changes in science learning achievement and digital skills. Descriptive statistics, including means and standard deviations, were also calculated to provide a clear understanding of the results. Statistical significance was set at $p < 0.05$.

Research Results

The study aimed to evaluate the impact of a blended learning approach, specifically the flipped classroom model, on the science learning achievement and digital skills of Grade 4 students at Ekamai International School in Bangkok, Thailand. Quantitative data were collected and analyzed from pre-tests and post-tests administered before and after the intervention.

Science Learning Achievement

The results showed a significant improvement in science learning achievement among the Grade 4 students after implementing the blended learning approach. The mean score on the post-test was significantly higher than the pre-test, indicating an enhanced understanding of Earth Science concepts. The mean difference in science learning achievement pre-test and post-test was 23.90, where the standard deviation was 10.37. The effect size of the difference using Cohen's d was 2.30, which is considered a large effect size.

Table 1 Paired Samples Descriptive Statistics for Science Learning Achievement Pre- and Post-Test Scores

Science Learning Achievements	<i>n</i>	Mean	<i>SD</i>	<i>t</i>	Sig.	Total Score
G4-B Pre-test	2	14.15	4.50			283
G4-B Post-test	2	38.05	9.87	10.30*	.000	761

Note. * $p < .05$.

A paired samples t -test was conducted to determine if there was a statistically significant difference between the dependent variable, student science learning achievement pre-test, and post-test. The pre-test and post-test scores of science learning achievement were compared to find statistically significant differences. The results from the paired samples t -test were as follows: $t = -10.300$. The pre-test and post-test scores were statistically different, with a significance of $p < .001$. The mean scores from the student science learning achievement post-test were significantly higher than the mean scores from the pre-test. Hence, there was a statistically significant difference in Grade 4 Science student science learning achievement before and after implementing blended learning.

Digital Skills

The digital skills of students were assessed in areas such as word processing, online research, presentation creation, and Internet safety. The post-test results demonstrated a modest improvement in digital skills compared to the pre-test. However, the change was not statistically significant.

Table 2 Paired Samples Descriptive Statistics for Digital Skills Pre-Test and Post-Test Scores

Paired Samples Statistics						
Digital Skills	<i>n</i>	Mean	<i>SD</i>	<i>t</i>	Sig.	Total Score
G4-B Pre-test	20	9.70	3.57	1.83	.083	194
G4-B Post-test	20	10.90	3.75			218

A paired samples t -test was conducted to determine if there was a statistically significant difference between the dependent variable, student digital skills pre-test, and post-test. The pre-test and post-test scores of digital skills were compared to find any statistically significant differences. The results from the paired samples t -test were as follows: $t = -1.831$. The pre-test and post-test scores were not statistically different, with a significance of $p = .083$. The mean scores from the student digital skills post-test were not significantly different from the mean scores from the pre-test. Hence, there was no

statistically significant difference in Grade 4 Science students' digital skills before and after implementing blended learning.

Discussion

The findings from this study highlighted the significant impact of blended learning, specifically the flipped classroom model, on science learning achievement in Grade 4 Earth Science students, but revealed no significant effect on students' digital skills development.

Science Learning Achievement

The results demonstrated a statistically significant increase in student science learning achievement after implementing blended learning, which was aligned with existing research on the benefits of blended learning. It also demonstrated a large effect size with Cohen's d at 2.30. According to previous studies, blended learning fosters active learning and deeper engagement with the content (Allen & Seaman, 2017; Garrison & Vaughan, 2008). In this study, students' science learning achievement scores improved dramatically from a mean of 14.15 in the pre-test to 38.05 in the post-test. This suggests that students benefited from the flipped classroom's structure, which allowed for more hands-on and interactive activities during class, a key component of constructivist learning theory.

Constructivism, which underpins the flipped classroom approach, emphasizes active student participation in the learning process, where students build knowledge through experiences inside the classroom. The theoretical foundation, supported by Piaget's and Vygotsky's work on active learning, reveals how the flipped classroom's interactive activities provide opportunities for learners to construct knowledge rather than passively receive information (Piaget, 1971; Vygotsky, 1978). This study's significant improvement in academic performance reflected this constructivist principle.

Furthermore, the use of digital tools through an online platform (Google Classroom), such as video lectures and interactive simulations, can help promote active learning and collaboration, which are important for deeper understanding and knowledge retention (Dziuban et al., 2004). Students who experience blended learning environments generally perform better than those in traditional face-to-face classroom settings (Seage & Turegun, 2020). This is due to opportunities for personalized learning, where students can review online materials at their own pace, at any place, and at any time through digital platforms (Mean et al., 2013).

Digital Skills

In contrast to science learning achievements, the results for digital skills were less conclusive, with no statistically significant improvement observed in students' digital skills (pre-test mean: 9.70, post-test mean: 10.90). This finding was somewhat surprising given the nature of blended learning, which typically incorporates various digital tools and platforms. However, while students were exposed to digital tools through blended learning, this exposure alone may not have been sufficient to foster significant gains in digital competency. The duration of this study extended to only a quarter of a full semester, which was about 10 weeks or 40 hours. This may have been insufficient for students to gain digital competencies that would make a significant difference in test results.

The researcher believes that one reason why the students' results did not show significant differences was due to low exposure to digital devices, the digital divide, and accessibility or digital access. The digital divide in elementary education remains a significant barrier to equitable learning opportunities, affecting students' access to technology, Internet connectivity, and essential digital skills. According to García and Weiss (2020), the COVID-19 pandemic further exposed and deepened existing inequalities in digital access, disproportionately impacting students from low-income households who lacked reliable Internet access and devices for remote learning. This gap is not only about having access to technology, but also about the ability to utilize digital tools effectively, a concept referred to as digital accessibility.

Van Deursen and Helsper (2018) highlighted that individuals who can engage meaningfully with digital resources experience greater educational benefits, while those without access fall behind academically.

Furthermore, the digital skills gap in elementary education is exacerbated by the "homework gap," where students without Internet access struggle to complete online assignments, putting them at a long-term disadvantage (Auxier & Anderson, 2020). Research by Hampton et al. (2021) emphasized that broadband connectivity was directly linked to student performance, with those lacking reliable Internet access showing lower academic outcomes. Addressing these disparities requires targeted interventions, including broadband expansion, device accessibility programs, and digital literacy initiatives, to ensure all students can develop the digital skills necessary for future success.

Digital literacy is a complex competency that includes the ability to use digital tools and critical thinking, creativity, and responsible digital citizenship (Howell, 2012). Structured guidance and practice are essential for elementary students to develop these skills. Since the treatment and focus of classroom settings were on science education rather than digital competency, students may have required more exposure to digital tools to show significant differences in the test results. Although this study aimed to determine if there was a relationship between science learning achievement and blended learning, and since blended learning requires the use of digital skills, the secondary objective was related to digital skills. The results suggested that the blended learning model, while effective in improving science learning achievement, may need to be supplemented with specific digital skills training to significantly impact students' digital competencies (Redecker, 2017).

However, the lack of significant improvement in digital skills contrasts with other research that highlights the potential of blended learning to enhance digital competencies (Oliver & Trigwell, 2005). This discrepancy may be due to the specific implementation of the flipped classroom model in this study, which focused more on scientific skills, the nature of science, and content mastery than on the intentional development of digital literacy. It highlights the need for more structured and targeted digital skills instruction within blended learning environments, especially for younger students who may lack foundational digital competencies.

Implications for Practice

The findings of this study highlight the potential of blended learning—specifically the flipped classroom model—to enhance science learning achievement and digital skills in elementary education. By integrating online instructional materials with interactive, hands-on classroom activities, educators can create student-centered learning environments that improve conceptual understanding, engagement, and retention in science. Additionally, the study underscored the importance of developing digital literacy at an early age, as digital tools play an increasing role in education and future careers. Schools should incorporate structured technology-based activities, such as online research, multimedia presentations, and Internet safety lessons, to equip students with essential 21st century skills.

For successful implementation, educators must receive proper training in technology integration and digital pedagogy, ensuring they can design and manage effective blended learning environments. Schools and policymakers should support investments in digital infrastructure, teacher training, and equitable access to technology to prevent disparities in learning opportunities. Additionally, curriculum designers should consider adopting blended learning as a core instructional strategy, integrating it across subjects to enhance both academic performance and independent learning skills. By implementing these strategies, schools can create a more engaging, inclusive, and future-ready education system that fosters both scientific literacy and digital competence among young learners.

Limitations and Future Research

This study was subject to certain limitations, including its small sample size, lack of a control group, and short duration, which may affect the generalizability of its findings. Future research could explore the long-term effects of blended learning on academic achievement and digital skills, and its application across different grade levels and subject areas. Comparative studies examining different blended learning models, such as station rotation or enriched virtual models, could provide deeper insights into their relative effectiveness.

Conclusion

The findings of this study underscore the potential of the flipped classroom model to enhance science learning achievement in elementary education. However, limited improvement in digital skills scores highlights the need for deliberate, targeted strategies to foster digital literacy. By addressing these challenges and leveraging the strengths of blended learning, educators can create engaging, effective learning environments that prepare students for the demands of a technology-driven global society.

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How Entrepreneurial Spirit Influences Entrepreneurial Intentions Through Psychological Capital: A Case Study in Guangxi, China

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Abstract

Aim/Purpose: This paper aimed to explore the influence of entrepreneurial spirit on entrepreneurial intentions, and to investigate whether a stronger entrepreneurial spirit was correlated with higher entrepreneurial intentions among students. It also investigated the possible mediating role of psychological capital in order to understand how psychological capital may bridge or influence the relationship between entrepreneurial spirit and entrepreneurial intentions.

Introduction/Background: These issues were addressed by integrating theories of entrepreneurial spirit, psychological capital, and entrepreneurial intentions, and conducting an empirical study. The study built on previous research that examined these constructs separately or in limited combinations, seeking to provide a more comprehensive understanding of how entrepreneurial spirit, characterized by innovation, risk-taking, and perseverance, interacts with psychological capital, consisting of optimism, resilience, hope, and self-efficacy, to shape college students' entrepreneurial intentions.

Methodology: The research was conducted using a survey questionnaire. The target population was college students in Guangxi, China, with a final sample size of 2,131 students from 15 universities. An online questionnaire ("Questionnaire Star") was used; it was sent to a convenience sample of students, allowing them to freely choose whether to participate or not. The questionnaire was designed based on Luthans' psychological capital measurement theory, covering Entrepreneurial Spirit (consisting of innovation ability, risk-taking, and leadership dimensions), Entrepreneurial Intentions (entrepreneurial motivation, attitude, and subjective perception dimensions), and Psychological Capital (optimism, resilience, and hope dimensions), with four questions for each dimension, and five additional questions about respondents' demographic characteristics. All questions were scored on a 5-point Likert scale. The data was analyzed using various statistical techniques, including Cronbach's alpha for reliability testing, Kaiser–Meyer–Olkin and Bartlett's tests for validity assessment, ANOVA for variance analysis, Pearson's correlation for relationship examination, and regression analysis using Stata 17 to test hypotheses and analyze direct and mediating effects.

Findings: The study found that entrepreneurial spirit had a significant positive correlation with entrepreneurial intentions, and this relationship was further mediated by psychological capital. Cronbach's alpha tests showed good reliability for all constructs, with coefficients as follows: psychological capital (.894), self-efficacy (.754), hope (.713), resilience (.727), optimism (.704), entrepreneurial spirit (.860), and entrepreneurial intentions (.869). The Kaiser–Meyer–Olkin value of .898 and a passing score for Bartlett's test of sphericity indicated the data's suitability for factor analysis. Descriptive statistics revealed gender and class level differences in the measured variables, with more female and senior respondents; higher scores were observed among seniors and males. ANOVA results showed that the regression model significantly explained variations in the outcome variables. Pearson's correlation analysis indicated strong positive correlations between Entrepreneurial Spirit and Entrepreneurial Intentions (.697), Psychological Capital and Entrepreneurial Intentions (.805), and Entrepreneurial Spirit and Psychological Capital (.521). Regression analyses demonstrated that both Entrepreneurial Spirit and Psychological Capital had significant positive effects on Entrepreneurial Intentions, with acceptable VIF and D-W values. The mediation effect was

confirmed through three regression models, where the introduction of Psychological Capital enhanced the model's explanatory power, as shown by increased ΔR^2 values.

Contribution/Impact on Society: This study clarifies psychological capital's mediating role between entrepreneurial spirit and intentions, advancing theoretical frameworks in entrepreneurship. Practically, it suggests integrating targeted psychological capital training (e.g., resilience and optimism enhancement) into educational programs to strengthen students' entrepreneurial preparedness, aligning with national entrepreneurship policies. The findings highlight how nurturing entrepreneurial mindsets in underdeveloped areas could stimulate local ventures like cultural tourism startups, addressing regional disparities while contributing to sustainable economic growth and job creation.

Recommendations: For practitioners in entrepreneurship education, it is recommended to incorporate activities into curricular programs that cultivate entrepreneurial spirit, focusing on enhancing students' innovation, risk-taking, and perseverance, while simultaneously nurturing their psychological capital to boost confidence and resilience. Researchers are advised to further explore the complex relationships among these variables, possibly by incorporating additional factors or using more diverse samples. Moreover, future studies could investigate optimal ways to develop and integrate these constructs in educational settings.

Research Limitations: The main limitations of this study included its geographical focus on Guangxi, China, which may limit the generalizability of the findings due to China's diverse economic and cultural contexts. Additionally, the study only examined the mediating role of psychological capital, overlooking other potential mediating factors such as social networks, family support, and institutional factors. The cross-sectional nature of this study limited the understanding of temporal changes in entrepreneurial intentions and related constructs.

Future Research: Future researchers could use a larger sample by including students from different Chinese regions and diverse institutional backgrounds. They could also explore other mediating and moderating variables in the relationship between entrepreneurial spirit and entrepreneurial intentions, conduct longitudinal studies to track changes over time, and investigate the impact of different entrepreneurship educational programs on these constructs.

Keywords: *Entrepreneurial spirit, psychological capital, entrepreneurial intentions, students*

Introduction

Entrepreneurial Spirit refers to a mindset and attitude of innovation, risk-taking, adaptability, perseverance, and entrepreneurial vision; together these factors play an active role in the formation of entrepreneurial consciousness and the entrepreneurship process (Kong et al., 2020). As an important innovative force for social development, the entrepreneurial intentions of college students need to be kindled and cultivated. However, entrepreneurial spirit alone is not enough; *Psychological Capital*, as an individual psychological resource, also plays an important role in this process. Psychological capital, including optimism, resilience, hope, and self-efficacy, directly affects the entrepreneurial intentions of college students (Chen & Wang, 2017). A high level of psychological capital enhances an individual's confidence; it also enhances an individual's determination when facing entrepreneurial challenges. Thus, psychological capital increases the probability of entrepreneurial success.

Researchable Questions

1. How does entrepreneurial spirit influence college students' entrepreneurial intentions?
2. How does entrepreneurial spirit influence college students' entrepreneurial intentions through psychological capital?

Research Objectives

1. To explore the influence of entrepreneurial spirit on entrepreneurial intentions; to investigate whether a stronger entrepreneurial spirit is correlated with higher entrepreneurial intentions among students.
2. To investigate the mediating role of psychological capital; the study further delves into how psychological capital bridges or influences the relationship between entrepreneurial spirit and entrepreneurial intentions.

Literature Review

Connotation of Entrepreneurial Spirit

Entrepreneurial spirit encompasses the unique mental qualities and capabilities that empower individuals to create, innovate, and take risks. Autio et al. (2001) defined entrepreneurial spirit as the driver of innovation that propels the economy. As research in this field has advanced over time, the significance of entrepreneurial spirit has only grown more pronounced. Koh and Buttle (2022) view it as the ability to take uncertainty and risk, while Qu and Tan (2021) regard it as the ability to find and create value in opportunities. Entrepreneurial spirit includes several dimensions such as innovation, decision-making ability, risk-taking, and awareness of opportunities, which form the basis for entrepreneurial intentions.

The Effect of Entrepreneurial Spirit on Entrepreneurial Intentions

There has been much research on college students' entrepreneurial intentions and the factors that influence them. Scholars have usually studied these influencing factors separately. Entrepreneurial spirit is often researched in mature start-ups or enterprise management; the focus is mainly on organizational management, enterprise performance, and so on.

When it comes to entrepreneurial spirit and college students, research has mainly been done on entrepreneurship education. Although entrepreneurship education involves ability and skill training, entrepreneurial spirit is more about personality traits and other elements related to innate abilities and experience. Furthermore, these can't be addressed by entrepreneurship education alone (Li & Chen, 2018). So studying the relationship between entrepreneurial spirit traits and entrepreneurial intentions as a whole may further improve entrepreneurship educational systems and achieve theoretical and practical significance.

Luthans' (2002) study delved into the relationship between university-supported entrepreneurial spirit and students' entrepreneurial intentions by using questionnaires examining social background, individual attitudes, self-efficacy, and predisposition. Wei's (2019) study revealed that three external factors were barriers to entrepreneurial intentions, including a) insufficient regulations and legal protection in terms of policy, b) asymmetry of language, experience, and information in terms of socio-culture, and c) financial support, partners, and suitable employees in terms of economy. Qu and Tan (2021) believed that the spiritual power of "mass entrepreneurship and innovation" originates from entrepreneurial spirit, and that the cultivation of entrepreneurial spirit among college students is an important mechanism to promote the practice of innovation and entrepreneurship among them. Scholars Li and Chen (2018) pointed out that innovation and entrepreneurship education entail more than simply urging students to open a company and journey on the road of entrepreneurship, but are part of a human development process.

Psychological Capital

Psychological capital appreciation, which refers to a positive psychological state manifested by an individual in the process of growth and development, is a core psychological element that transcends human and social capital, and is a psychological resource that promotes personal growth and performance improvement.

Psychological capital is a concept developed by Shane and Venkataraman (2000) based on positive organizational behavior and positive psychology. They believed that psychological capital is a positive

psychological state possessed by an individual, which has the characteristics of being developable and measurable. Scholars such as Wilson et al. (2007) summarized psychological capital into four dimensions: optimism, resilience, hope, and self-efficacy. In China, Zhao and Zhang (2023) divided psychological capital into two categories from actual situations: one was transactional psychological capital, i.e., optimism and hope, resilience and tenacity, courage and self-confidence, etc.; and the other was interpersonal psychological capital, which includes tolerance and courtesy, honesty and modesty, and patience and gratitude.

The Effect of Psychological Capital on Entrepreneurial Intentions

In studies involving entrepreneurial intentions and the psychological capital of college students, Fred Luthans, an American psychologist and a founder of the psychological capital theory, has made important contributions to the concept and measurement of psychological capital (Zhao et al., 2010). His research lays a crucial theoretical foundation for understanding the impact of individual self-efficacy on entrepreneurial intentions. In the field of entrepreneurship education, the theories and practices of Luthans have had a profound impact on the cultivation of entrepreneurial spirit and entrepreneurial intentions among college students (Zhao & Zhang, 2023).

With the advent of in-depth research on college students' entrepreneurial intentions, scholars began to introduce the concept of psychological capital into business settings, and developed the concept of entrepreneurial psychological capital. Qin and Kong (2022) found that entrepreneurial psychological capital included three dimensions: positive growth, optimism and hope, and idiosyncrasy and daring. Liang and Dunn (2016) found that optimism, hope, and self-efficacy were among the psychological capital elements that demonstrated significant positive relationships with entrepreneurial team behavior.

Empirical research has confirmed that entrepreneurial spirit exerts a significant positive influence on college students' entrepreneurial intentions. Zhao and Zhang (2023), along with other scholars such as Shane and Venkataraman (2000), have pointed out that college students' entrepreneurial intentions were not only related to their external environment, but also related to their own psychological traits. Wilson et al. (2007) argued that college students' psychological capital can be tested to determine their entrepreneurial potential through the three dimensions of self-efficacy, social interaction, and positive acumen. The entrepreneurial potential of college students can be assessed to make scientific predictions, thereby guiding entrepreneurship education in colleges and universities. Scholar Wei (2019) pointed out that psychological capital not only directly affects the entrepreneurial intentions of college students, but also indirectly affects their entrepreneurial spirit by acting on their traditional economic capital, human capital, and social capital.

In summary, existing research has explored the impact of entrepreneurial spirit on entrepreneurial intentions, as well as the influence of psychological capital on entrepreneurial intentions. However, there is a lack of research specifically focusing on how entrepreneurial spirit affects entrepreneurial intentions through psychological capital. Moreover, there is also a shortage of studies in this regard that target specific college students. This represents a gap that is worthy of further exploration.

Research Framework and Hypotheses

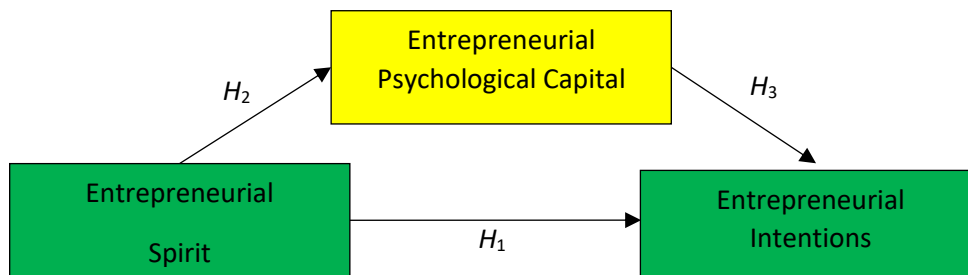
Based on the above research results, this study examined China as a case of how entrepreneurial spirit affects college students' entrepreneurial intentions through psychological capital, and analyzed whether and how psychological capital may play a role as a mediating variable in influencing how entrepreneurial spirit affects college students' entrepreneurial intentions. Therefore, the following hypotheses were proposed.

H₁: Entrepreneurial spirit positively influences the entrepreneurial intentions of college students.

H₂: Entrepreneurial spirit positively affects psychological capital.

H₃: Psychological capital plays a mediating role in how entrepreneurial spirit influences the entrepreneurial intentions of college students.

Figure 1 Model Design



Methodology

Research Scope

This study focused on the impact of entrepreneurial spirit on entrepreneurial intentions, and the mediating role of psychological capital in this relationship. The research subjects were college students from Guangxi Province in China. Data collection was conducted using an online questionnaire (named “Questionnaire Star”); a questionnaire link was sent to an unspecified convenience sample of college students, who freely chose whether or not to answer the survey.

Population and Sample Size

This study's subjects were college students in Guangxi Province: specifically sophomore, junior, senior, and graduate students. There are about 400,000 college students in Guangxi.

Based on the overall scale and the needs of this study, the targeted number of respondents was approximately 2,000; the final qualified sample size that was collected was 2,131.

Data Collection Instruments

According to the psychological capital measurement theory of Luthans (2002), entrepreneurial psychological capital in this study was divided into three dimensions: optimism, resilience, and hope. Four questions were drafted for each dimension, for a total of 12 questions. College students' entrepreneurial intentions were also divided into three dimensions: entrepreneurial motivation, entrepreneurial attitude, and subjective perception, with four questions for each dimension, totaling 12 questions. For entrepreneurial spirit, three dimensions were also selected: innovation ability, risk-taking, and leadership, with four questions for each dimension, totaling 12 questions. Together with five questions about respondents' basic situations, there were a total of 41 questions, all of which were scored using a 5-point Likert scale, from 1 to 5 (= *Strongly Disagree*, 2 = *Disagree*, 3 = *Average*, 4 = *Agree*, and 5 = *Strongly Agree*).

This study was carried out using a network questionnaire. The survey subjects were college students (undergraduates at the sophomore level or above) and graduate students who were enrolled in 15 universities in Guangxi, China. The survey was conducted by means of a network questionnaire (Questionnaire Star). The questionnaire was distributed anonymously. Acceptance of the survey indicated willingness to complete it. A total of 3,051 questionnaires were received, and after excluding those that did not meet the requirements, 2,131 valid questionnaires were recovered. The information obtained from this survey is shown below.

Reliability Test

Cronbach's alpha coefficient was used to measure the internal consistency reliability of the scale. A coefficient value greater than .70 is generally considered to indicate good reliability of the scale. The results for each variable may be seen in Table 1.

Table 1 *Cronbach's Alpha Test*

Variable	Cronbach's α
Psychological Capital	.894
Self-Efficacy	.754
Hope	.713
Resilience	.727
Optimism	.704
Entrepreneurial Spirit	.860
Entrepreneurial Intentions	.869

In the study of relevant dimensions, the measurement of Self-Efficacy within the Psychological Capital domain demonstrated a certain level of internal consistency, as evidenced by its Cronbach's alpha coefficient. Similarly, the dimensions of hope, resilience, and optimism also showed good reliability, with their respective coefficients falling within acceptable ranges. This implied that the measurements designed for these aspects were reliable enough to provide valid insights for further analysis. Entrepreneurial Spirit and Entrepreneurial Intentions also displayed high Cronbach's alpha coefficients, signifying a high degree of internal consistency. This indicated that the measurement methods employed for these two variables were robust and trustworthy to accurately capture the constructs they represented, thereby laying a solid foundation for subsequent research and interpretation.

Validity Check

From Table 2, it can be seen that the Kaiser–Meyer–Olkin value (KMO) was .898, which was greater than .60, meeting the prerequisite requirements for factor analysis, implying that the data could be used for factor analysis research. The data also passed Bartlett's test of sphericity ($p < .05$), which indicated that the research data was suitable for factor analysis, and the test of validity was passed.

Table 2 *Kaiser–Meyer–Olkin and Bartlett's Tests*

Kaiser–Meyer–Olkin Values		.898
Bartlett Sphericity Check	Approximate Chi-square	3098.567
	<i>df</i>	2129
	<i>p</i> -value	.000**

Note. * $p < .05$; ** $p < .01$.

Data Analysis and Interpretation

As shown in Table 3 on the following page, the descriptive statistical data about the respondents presented a diverse picture. In terms of gender, there was an imbalance as females were in the majority, which might have resulted from differences in interests or recruitment approaches that favored female participants. For class levels, seniors formed a relatively large group; they may have been more aware of the study, and also more willing to participate due to their advanced academic standing and accumulated experience. There was a good diversity of respondents due to a fairly even split between Economics/Management majors and students from other disciplines. This broadened the perspective of the research and helped avoid field of study bias.

Table 3 *Descriptive Statistical Analysis of the Respondents (n = 2,131)*

Project	Category	Number	Percent
Gender	Male	814	38.2
	Female	1,317	61.8
Class Level	Sophomores	388	18.2
	Juniors	471	22.1
	Seniors	848	39.8
	Graduate Students	424	19.9
Field of Study	Economics and Management	961	45.1
	Non-Economics and Management	<u>1,170</u>	<u>54.9</u>
Totals	--	2,131	100

Mean Value Analysis

The mean values of the main variables are shown in Table 4, and they provide useful perspectives on differences among various groups of respondents.

Table 4 *Mean Values of Variables (n = 2,131)*

Variable	Entrepreneurial Spirit	Entrepreneurial Intentions	Psychological Capital
Overall	2.234	2.062	2.521
Sophomores	2.121	1.752	2.415
Juniors	2.245	1.942	2.496
Seniors	2.413	2.212	2.632
Graduate Students	2.132	2.243	2.621
Male	2.312	2.126	2.674
Female	2.015	1.716	2.357

When the data is examined by class levels, it's evident that there are significant variations as students make progress in their academic programs. Seniors generally displayed relatively higher levels in the aspects being measured compared to students in earlier years. This could be primarily due to the fact that as they move forward in their studies, they accumulate a wealth of knowledge and diverse experiences. They have likely been exposed to more courses, practical projects, and campus activities related to entrepreneurship or personal development, gradually enhancing their understanding and manifestation of these aspects. For instance, through participating in business plan competitions or internships during their senior year, they might have a deeper sense of entrepreneurial spirit and stronger intentions in this regard. By contrast, sophomores seemed to be at a relatively nascent stage of development in these aspects. They were still in the process of laying a foundation for their academic knowledge. They might not have had as many opportunities to engage deeply with relevant real-world applications or explore their own potential in these specific areas.

Regarding gender differences, males tended to exhibit higher levels than females across the variables. This disparity could stem from a variety of factors. Socially from an early age, boys are often encouraged to be more adventurous, take risks, and show leadership qualities in many cultures, which might align more closely with the traits associated with entrepreneurial spirit and intentions. They might also have more exposure to role models in the business world, or have been influenced by family expectations that emphasize career achievements and independence in a way that promotes development of these aspects. On the other hand, females may face different social expectations and stereotypes that sometimes limit their full exploration of and expression in these domains. However, it's important to note that these are just general trends, and individual differences within each gender can be substantial.

Analysis of Variance (ANOVA)

The ANOVA results displayed in Table 5 provide crucial insights into the analysis.

Table 5 ANOVA (*The intermediate process*)

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	94.441	2	97.241	312.121	0.000**
Residual	77.885	2129	0.142		
Total	131.345	2131			

Note. * $p < .05$; ** $p < .01$.

The data showed a highly significant value ($p < .01$), with the regression model playing an important role in explaining variations in the outcome variable (Entrepreneurial Intentions). The factors or independent variables incorporated into the model had a significant impact, and were relevant to understanding the phenomenon under study. This means that the hypothesized and modeled relationships have practical significance.

On the other hand, the residual component represented the part of the variability that the model failed to explain. Although it is inevitable that there will always be some unexplained variance in any real-world data analysis, the size of the residual sum of squares relative to the regression sum of squares indicates how well the model performs. By comparison, a smaller residual sum of squares would suggest that the model was a better fit for the data.

Relevance Analysis

Based on the analysis presented in Table 6, it's evident that there are significant relationships among the variables. There exists a substantial positive correlation between Entrepreneurial Spirit and Entrepreneurial Intentions. This means that as Entrepreneurial Spirit intensifies, Entrepreneurial Intentions tend to increase accordingly.

Likewise, a notably strong positive correlation between Psychological Capital and Entrepreneurial Intentions was also observed. This suggests that a higher level of Psychological Capital was also closely associated with stronger Entrepreneurial Intentions.

Moreover, there was a positive correlation between Psychological Capital and Entrepreneurial Spirit. Essentially, an increase in Entrepreneurial Spirit was accompanied by a rise in Psychological Capital. Overall, these correlations highlight the interconnections among these aspects and emphasize their mutual influence in the context of the research.

Table 6 Pearson's Correlation

Variable	Entrepreneurial Spirit	Psychological Capital	Entrepreneurial Intentions
Entrepreneurial Spirit (x)	1		
Psychological Capital (m)	.521**	1	
Entrepreneurial Intentions (y)	.697**	.805**	1

Note. * $p < .05$; ** $p < .01$.

Research Results

Regression Analysis

After the data was collated, the direct and mediating effects were tested separately first, and then the research hypotheses were tested using Stata 17 statistical software.

The Effect of Entrepreneurial Spirit and Psychological Capital on Entrepreneurial Intentions

The statistical data regarding the effect of Entrepreneurial Spirit and Psychological Capital on Entrepreneurial Intentions were as follows.

Table 7 Effect of Entrepreneurs' Spirit and Psychological Capital on Entrepreneurial Intentions (n = 2,131)

Independent Variable	Unstandardized Coefficient		Standardization Coefficient	t	Sig.	VIF	R ²	Adjusted R ²	F
	B	Std. Error	Beta						
Entrepreneurial Spirit (X)	.208	0.049	.345	4.231	.000**	1.589	.328	.198	84.258
Psychological Capital (M)	.513	0.041	.512	12.512	.000**	2.389	.414	.191	58.415

Dependent variable: Entrepreneurial Intentions (Y)

D-W value: 1.857

Note. * $p < 0.05$ ** $p < 0.01$.

The results show that the independent variable Entrepreneurial Spirit (X) had a significant positive effect ($p < .01$) on the dependent variable Entrepreneurial Intentions (Y). The Variance Inflation Factor (VIF) was 1.589, within the acceptable range, indicating no serious problem of multicollinearity.

Psychological Capital had a significant positive effect ($p < .01$) on Entrepreneurial Intentions to an even greater extent. Its VIF was 2.389, so there was no serious multicollinearity. In addition, the R^2 was .414 and the Adjusted Coefficient of Determination (Adjusted R^2) was .328, which indicated that the independent variable explained about 41.4% of variance in the dependent variable, or about 32.8% after adjustment. Thus, this model had a certain degree of explanatory ability. The D-W value was 1.857, close to 2.00, which indicated that the residuals did not have significant autocorrelation, and that the model was a good overall fit with the data. It may be concluded that both Entrepreneurial Spirit and Psychological Capital significantly and positively affected Entrepreneurial Intentions, and so H_1 was established.

The Impact of Entrepreneurial Spirit on Psychological Capital

The statistical data about the effect of Entrepreneurial Spirit on Psychological Capital was as follows.

Table 8 Effect of Entrepreneurial Spirit on Psychological Capital (n = 2,131)

Independent Variable	Unstandardized Coefficient		Standardized Coefficient	t	Sig.	VIF	R ²	Adjust R ²	F
	B	Std. Error	Beta						
Entrepreneurial Spirit (X)	.412	.056	.395	7.357	.000**	3.124	0.341	0.185	83.254

Mediating Variable: Psychological Capital (M)

D-W value: 1.749

Note. * $p < 0.05$; ** $p < 0.01$.

The results showed that the unstandardized coefficient (B) was .412 and the standard error (Std. Error) was 0.056. The standardized coefficient (Beta) was .395, which meant that each unit increase in Entrepreneurial Spirit was related to an increase in Psychological Capital of .395 units when controlling for the other variables. Thus, Entrepreneurial Spirit had a significant positive effect on Psychological Capital. The D-W value was 1.749, which was used to test whether there was autocorrelation in the residuals. It is generally considered that when this value is close to 2.00, there is no significant autocorrelation in the residuals; thus, the D-W value of the model was within the acceptable range. Statistically, the p -value was less than .01 ($p < .01$), indicating that this positive effect was highly significant. Thus, it was concluded that Entrepreneurial Spirit had a positive effect on Psychological Capital, and so H_2 was established.

Mediation Effect Test

In order to test the mediating effects of Psychological Capital, three models were established: *Model 1*: Entrepreneurial Spirit → Entrepreneurial Intentions; *Model 2*: Psychological Capital → Entrepreneurial Intentions; *Model 3*: Entrepreneurial Spirit → Psychological Capital → Entrepreneurial Intentions. The results of regression analysis are shown in Table 9 below.

Table 9 Regression Analysis of the Three Models (n = 2,131)

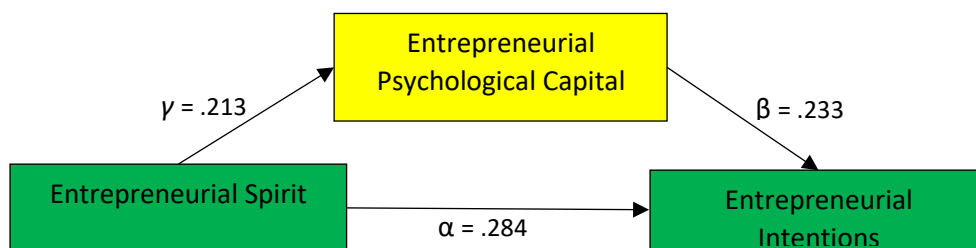
Variable	Model 1: Entrepreneurial Spirit → Entrepreneurial Intentions		Model 2: Entrepreneurial Spirit → Psychological Capital		Model 3: Entrepreneurial Spirit → Psychological Capital → Entrepreneurial Intentions	
	Beta	p	Beta	p	Beta	p
Entrepreneurial Spirit (X)					.284	.000**
Entrepreneurial Intentions (Y)	.345	.000**	.395	.000**	.213	.000**
					.233	.003**
t	8.457		7.125		9.215	
F	68.474		74.124		85.241	
ΔR^2	.245		.184		.302	

Table 9 Regression Analysis of the Three Models (n = 2,131) presents the different regression relationships. In Model 1, the relationship between Entrepreneurial Spirit (X) and Entrepreneurial Intentions (Y) was examined. Here, the regression coefficient showed a certain level of association, with the corresponding *p*-value, *t*-value, and *F*-value indicating the significance and strength of this relationship. The ΔR^2 value also gave an idea of the amount of variance explained by this model.

Model 2 focused on the connection between Entrepreneurial Spirit and Psychological Capital. Similar to Model 1, various statistical values, such as the regression coefficient, *p*-value, *t*-value, and *F*-value, are provided, along with the ΔR^2 , which reveal the explanatory power of this relationship.

Model 3 was a mediation model, which is of particular interest. It showed the direct effect of Entrepreneurial Spirit on Entrepreneurial Intentions, as well as its indirect effect through Psychological Capital. The direct effect was significant, and the indirect effect was also significant. The total effect, calculated by adding the direct and indirect effects, showed a combined influence. The *t*-value and *F*-value again provided information about the significance and strength of the relationship. Notably, the ΔR^2 value indicated that with the inclusion of the mediating variable of Psychological Capital, the model's ability to explain the variance increased, showing that the introduction of this variable enhanced the model's explanatory power. This supported the establishment of *H*₃, suggesting that Entrepreneurial Spirit Affects Entrepreneurial Intentions not only directly, but also through the mediation of Psychological Capital, highlighting the complex and multifaceted nature of the relationships among these variables. Based on the analysis of the above data, the proposed model derived is shown in Figure 2.

Figure 2 Mediation Effect Test



Discussion

After the empirical study, it was verified that all three hypotheses were valid. For college students in Guangxi, China, Entrepreneurial Spirit had a positive effect on Entrepreneurial Intentions, and its influence coefficient was .284, which was consistent with the results of Zhao et al. (2010) and Qu and Tan (2021). Entrepreneurial Spirit positively affected Psychological Capital, and its influence coefficient was .213, which was not too different from the research results of Zhao and Zhang (2023). Psychological Capital played a mediating role in the process of Entrepreneurial Spirit affecting college students' Entrepreneurial Intentions, with an impact coefficient of .233, which was consistent with the findings of Wei (2019). Although the above research results were consistent with relevant literature, there were significant differences in the mediating factors, perhaps due to regional differences.

Conclusions, Recommendations, and Limitations

Conclusions

1. Entrepreneurial Spirit had a significant positive impact on Guangxi college students' Entrepreneurial Intentions.
2. Entrepreneurial Spirit had a significant positive impact on these students' Psychological Capital.
3. Psychological Capital played a mediating role in the positive impact of Entrepreneurial Spirit on college students' Entrepreneurial Intentions.

Recommendations

Based on an analysis of the empirical results, the researchers concluded that strengthening Entrepreneurial Spirit training would enhance college students' entrepreneurial awareness. Also, cultivating their entrepreneurial Psychological Capital and enhancing their entrepreneurial confidence would be key to enhancing their Entrepreneurial Spirit.

Strengthening Entrepreneurial Spirit Training Can Enhance Students' Entrepreneurial Awareness

This study found that Entrepreneurial Spirit had a significant positive effect on college students' Entrepreneurial Intentions. Entrepreneurial Spirit includes traits such as innovation, risk-taking, self-confidence, and persistence, which are qualities necessary for entrepreneurial success. Cultivating college students' Entrepreneurial Spirit and enhancing their level of entrepreneurial Psychological Capital can help stimulate their entrepreneurial enthusiasm and motivation. Therefore, helpful changes suggested by these results include strengthening Entrepreneurial Spirit through entrepreneurship education, and encouraging students to form innovative intentions and entrepreneurial determination through entrepreneurship practice, which would lay a solid foundation for their entrepreneurial pathways.

Cultivating Entrepreneurial Psychological Capital and Enhancing Entrepreneurial Confidence

This study also found that Psychological Capital partially mediated the relationship between students' Entrepreneurial Spirit and their Entrepreneurial Intentions. Psychological Capital refers to an individual's psychological resources, including traits such as self-efficacy, hope, resilience, and optimism. These psychological resources can help individuals cope with difficulties and challenges, and enhance their entrepreneurial confidence and resilience. Therefore, entrepreneurship education should focus on cultivating college students' entrepreneurial Psychological Capital. It should also focus on improving their self-efficacy and optimism. Moreover, it should enhance their determination and courage to face entrepreneurial risks and challenges.

Limitations and Suggestions for Further Study

This study had the following limitations and shortcomings due to various constraints, and suggested improvements in future studies include the following:

1. The sample for this study was college students in Guangxi, China. Due to the vastness of China's geographic area and differences in economic development and cultural backgrounds, these results

may not be fully representative of all Chinese college students. Therefore, future studies should expand their samples to cover more regions and different types of colleges/universities in order to improve the generalizability and representativeness of their findings.

2. This paper only examined the mediating role of Psychological Capital in the relationship between Entrepreneurial Spirit and its influence on Entrepreneurial Intentions, and did not examine other possible mediating variables. For example, factors such as social support, entrepreneurship education, and market opportunities may also play an important role in this process. Future research should expand the range of mediating variables to provide a more comprehensive understanding of the mechanisms by which Entrepreneurial Spirit may influence Entrepreneurial Intentions.

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Exploring University Choice Factors Among School Leavers in Selected Sri Lankan Districts: A Second-Order Confirmatory Factor Analysis

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Abstract

Aim/Purpose: This study explored key factors influencing school leavers' selection of public universities in rural Sri Lankan districts. Grounded in Chapman's Model of Student College Choice and relevant economic decision-making theories, the variables that shape university selection were identified. It aims to provide policymakers and educational institutions with actionable insights to enhance enrollment strategies and improve access to higher education.

Introduction/Background: Higher education plays a crucial role in socio-economic development; however, Sri Lanka's Gross Enrollment Ratio remains low compared to that of other middle-income Asian nations, limiting human capital growth. Although public universities have expanded open and distance learning programs, rural enrollment remains low due to sociocultural, economic, and institutional barriers.

Methodology: We conducted a cross-sectional survey to analyze the factors influencing university choice among school leavers in four economically disadvantaged districts: Badulla, Matale, Monaragala, and Rathnapura. The target population consisted of school leavers who had completed the General Certificate of Education Advanced Level examination. A stratified random sampling method was used to ensure representation across different socioeconomic backgrounds. A total of 300 self-administered questionnaires were distributed, of which 239 were fully completed. After data screening, 201 valid responses were retained, with 38 responses excluded due to missing data or response biases (e.g., extreme uniformity in unrelated questions). An Exploratory Factor Analysis was conducted using a statistical software package to identify latent constructs underlying the observed variables, retaining factors with loadings above 0.50. Confirmatory Factor Analysis was performed using AMOS Version 23 to confirm the factor structure, assess model fitness, and establish construct validity. Structural Equation Modeling was then employed to test hypothesized relationships between latent constructs and observed variables.

Findings: Exploratory Factor Analysis was conducted to identify key underlying factors influencing university selection. Out of 26 initial variables, eight were excluded because their factor loadings were below 0.50, leaving 18 variables retained for further analysis. The Kaiser criterion (eigenvalues > 1.0) and Principal Component Analysis with Varimax rotation were employed to extract and interpret the factors. This analysis identified five key constructs underlying university selection: Student Characteristics, University Image, Fixed University Characteristics, University Communication Efforts, and Influence of Significant Persons. Structural Equation Modeling provided further support for these findings, demonstrating that Student Characteristics had the strongest effect on university selection ($\gamma = 0.95, p < 0.001$). This construct included factors such as a student's interest in higher education, career aspirations, and expectations of future job opportunities. Notably, nearly 50% of the surveyed students belonged to lower-middle-income households, highlighting the critical role of higher education in providing socioeconomic mobility and influencing university selection decisions.

The University Image construct also played a significant role ($\gamma = 0.50, p < .01$), with 83% of respondents preferring public universities due to their perceived reputation and better career prospects compared to private institutions. Fixed University Characteristics—including factors such as location, transportation costs, and cost of living—exerted a moderate effect on university choice ($\gamma =$

0.34, $p < .05$). These logistical and financial concerns were particularly relevant for students from rural areas, where accessibility remains a critical barrier to higher education.

Additionally, University Communication Efforts ($\gamma = 0.34$, $p < .05$) were found to be an important determinant of university selection. Outreach efforts such as open days, social media engagement, and career guidance seminars played a crucial role in bridging the informational gap, particularly in underprivileged districts where students have limited exposure to higher education opportunities. Lastly, the Influence of Significant Persons (e.g., peers, teachers, and family members) had a relatively minor impact ($\gamma = 0.14$, $p = .08$), suggesting that while external influences shape initial perceptions, students' intrinsic motivations and institutional factors are more decisive in final university selection.

Contribution/Impact on Society: This study provides empirical evidence on the key factors influencing university choice in economically disadvantaged districts of Sri Lanka, offering valuable insights for policymakers, universities, and education stakeholders. A key contribution of this study is its emphasis on socioeconomic mobility through education. With nearly 50% of surveyed students from lower-middle-income households, higher education plays a vital role in breaking cycles of poverty and fostering long-term economic development. Furthermore, the study underscores the underutilization of open and distance learning systems, despite their potential to increase accessibility for students in remote areas.

Recommendations: By implementing data-driven policies based on these findings, Sri Lanka can improve its Gross Enrollment Ratio, strengthen its skilled workforce, and drive national progress in the global knowledge economy.

Research Limitation: This study was limited to four rural districts, which may affect its findings' generalizability. Survey distribution challenges, language barriers, and non-response bias could have influenced the results.

Future Research: Future studies should expand their samples to include urban and rural areas for broader applicability. Longitudinal research tracking students' university and career outcomes would provide deeper insights. Investigating technology adoption in open and distance learning and assessing financial aid and career counseling programs could offer practical policy recommendations.

Keywords: *University choice, higher education, rural students, Sri Lanka*

Introduction

The global economy is undergoing a major shift toward Asia, now the largest trading region in the world. This transition is fueled by advancements in labor, capital, and technology, which have spurred significant economic growth in the region. The International Monetary Fund emphasizes the critical role of a robust knowledge economy in sustaining this growth. As economies expand and populations grow wealthier, the demand for higher education has surged, particularly in Asia. By 2021, one-third of all higher education students globally were enrolled in Eastern and Southeastern Asia. Projections suggest that by 2040, global enrollment will reach 600 million, with over 60% of students located in Asia. Countries like India are making substantial efforts to meet this demand, aiming to double their Gross Enrollment Ratios (GER) in higher education to 50% by 2035 (Misra & Pachauri, 2025). These trends underscore the importance of higher education in fostering economic development and competitiveness.

Despite this regional growth, Sri Lanka significantly lags behind its neighbors in both enrollment rates and institutional capacity. In 2020, Sri Lanka's GER in tertiary education was just 20%, one of the lowest in Asia (UNESCO, 2023). Several factors have contributed to this disparity, including financial barriers, cultural perceptions of higher education as inaccessible, and a preference among school leavers for non-university career paths. Additionally, Sri Lanka's higher education system relies heavily on conventional learning frameworks, with only one institution offering Open and Distance Learning (ODL). By contrast, many countries in the region have successfully leveraged ODL to improve access

to higher education. For example, China achieved a GER of 60.2% in 2023, and 25% of its graduates were expected to come from ODL systems (Zhang, 2023).

While extensive research has examined factors influencing university selection globally and within Sri Lanka, there remains a knowledge gap in understanding how economically disadvantaged rural students navigate these choices, particularly in a system with limited ODL opportunities. Existing studies have primarily focused on urban students or generalized national trends, leaving a lack of nuanced insights into regional disparities.

In this study, factors were examined that influence the university chosen among Sri Lankan school leavers, with a focus on public universities in economically disadvantaged rural districts. It employed Chapman's (1981) model of student college choice as its primary theoretical framework. This model identifies key determinants of university choice, including student characteristics (academic achievement, socio-economic background) and external influences (institutional reputation, cost, and marketing efforts). Structural Equation Modeling (SEM) was employed to investigate how variables such as academic standards, economic considerations, and career expectations interact to shape university preferences.

Geographical Disparities in Higher Education Access

Sri Lanka faces significant geographical disparities in access to higher education. Urban centers like Colombo are home to five national universities and several other higher education institutions, offering a wide range of programs and facilities. By contrast, rural districts such as Monaragala lack national universities entirely, creating significant barriers for students in these areas. Economically disadvantaged districts, such as Badulla and Ratnapura, face similar challenges. In these regions, only three out of ten advanced-level students have an opportunity to attend university, as compared to much higher enrollment ratios in more developed areas. These geographical imbalances exacerbate existing inequalities and limit opportunities for students from rural and underprivileged backgrounds.

Addressing these disparities requires targeted policies to improve accessibility and equity in higher education. Understanding the factors that influence university choice is critical not only for increasing enrollment rates, but also for aligning educational offerings with labor market needs. Beyond student challenges, universities, employers, and policymakers play a crucial role in shaping higher education access and outcomes. Universities must adapt their programs to meet evolving job market demands, while policymakers need to address systemic barriers that hinder equitable access to education.

Literature Review

To understand the complex dynamics influencing university choice, this study drew on various theoretical frameworks from behavioral, economic, and marketing perspectives. These frameworks offered valuable insights into the interplay of academic, financial, and cultural factors that shape student preferences. Behavioral models, such as the Theory of Planned Behavior (Ajzen, 1991) and the Expectancy-Value Theory (Eccles et al., 1983), emphasize the role of attitudes, social norms, and perceived challenges in decision-making. The Theory of Planned Behavior highlights how students' intentions are shaped by their attitudes toward higher education, societal expectations (e.g., family influence), and confidence in overcoming barriers such as financial constraints or geographical limitations. In Sri Lanka, these factors are particularly relevant due to the strong influence of familial and cultural values on students' aspirations.

In the context of this study, these theoretical constructs were empirically examined through factor analysis, where attitudes toward higher education, perceived financial constraints, and social influences were manifested as latent constructs derived from observed survey responses. For example, students' perceptions of affordability, parental encouragement, and perceived career benefits can cluster into distinct factors that shape university selection. Additionally, while behavioral models focus on individual decision-making, they often have overlooked systemic constraints, such as the limited number of university seats in Sri Lanka's merit-based system. This study integrated these

perspectives to uncover the key underlying dimensions influencing university choice, thus bridging psychological theories with an empirical factor-analytic approach.

Marketing frameworks, including Consumer Behavior Models (Kotler & Keller, 2012) and Brand Equity Models (Aaker, 1991), have examined how universities attract students through branding and outreach efforts. In Sri Lanka, public universities have dominated the higher education landscape, and their branding efforts have been minimal. However, marketing still occurs indirectly through university rankings, alumni networks, and informational campaigns. These models provide valuable insights into how institutions communicate their value propositions to prospective students, though they may have limited applicability in centralized admission systems where students have less agency in the selection process.

Theories of social capital (Coleman, 1988) have explored the role of social networks, peer influence, and family expectations in shaping educational decisions. In Sri Lanka, rural students often rely heavily on close-knit community networks for guidance, while urban students may have access to more diverse information sources. This disparity highlights how social capital can both empower and constrain student choices. However, these theories often overlook the impact of regional inequalities and systemic barriers on the effectiveness of social networks in facilitating access to higher education.

Economic perspectives, such as Human Capital Theory (Becker, 1964), focus on the cost-benefit analyses that underlie university choice. While Sri Lanka's tuition-free system reduces direct costs, indirect expenses such as living costs and opportunity costs remain significant barriers, particularly for students from rural and economically disadvantaged backgrounds. Financial aid models, although relevant in many global contexts, have limited applicability in Sri Lanka, where scholarships are often merit-based rather than need-based, which further marginalizes economically disadvantaged students.

Chapman's (1981) model is well-suited for studying university choice in Sri Lanka. It identifies key determinants such as academic reputation, institutional characteristics, and external influences. In the Sri Lankan context, socio-economic background, academic performance, and institutional reputation are critical factors. However, the model could benefit from adaptation to include systemic barriers, such as regional disparities in educational infrastructure and the limited adoption of ODL systems.

While extensive literature exists on the determinants of university choice globally, significant gaps remain in understanding how these factors interact in specific socioeconomic and cultural contexts. Studies have largely focused on Western higher education systems (e.g., Perna, 2006; Hemsley-Brown & Oplatka, 2006) and market-driven models of student decision-making (Maringe, 2006), often neglecting centralized and merit-based systems like Sri Lanka's.

Similarly, while research on Sri Lankan university choice exists, much of it remains fragmented or outdated. The majority of studies emphasize broad socio-economic challenges (e.g., De Silva, 2023; Premaratne et al., 2016) rather than empirically examining how specific psychological, economic, and marketing-based factors interact in students' decision-making processes. This study fills a gap by integrating behavioral, economic, and marketing perspectives within an empirical factor-analytic framework to systematically identify the key constructs that shape university selection in Sri Lanka.

Based on the literature review and the unique context of Sri Lanka, the following hypotheses were formulated to explore the research question: *What are the underlying latent constructs that influence students' university selection decisions in Sri Lanka?* Based on the literature survey and the specific context of Sri Lanka, the following hypotheses were developed:

1. H_1 : Academic reputation and perceived quality of education significantly influence students' university choice.
2. H_2 : Financial considerations, despite the absence of tuition fees, play a role due to living expenses and potential financial aid.
3. H_3 : Geographical proximity and institutional facilities are crucial determinants in the selection of a university.
4. H_4 : Social and cultural influences, including family expectations and peer advice, significantly affect students' decisions.

5. H_5 : Effective communication and information delivery by universities are key factors in attracting students.

These hypotheses aimed to investigate the specific factors that drive university choice among Sri Lankan students, providing policymakers and educational institutions with insights to enhance their strategies and improve enrollment rates.

Methodology

A quantitative research design was employed to explore underlying factors influencing university selection among students. Specifically, factor analysis was utilized to identify latent constructs by examining patterns among observed decision-making variables, enabling data reduction and construct identification. The research followed a cross-sectional survey approach, conducted across four economically underdeveloped districts in Sri Lanka: Badulla, Matale, Monaragala, and Rathnapura. These districts were selected based on their low economic rankings (Abeynayake et al., 2023).

The target population included school leavers who had completed the General Certificate of Education Advanced Level examination within the Sri Lankan education system. Data collection occurred in May 2024, approximately one month after examinations, allowing participants to reflect on their higher education choices. A printed questionnaire, translated into Sinhala, Tamil, and English, was distributed to accommodate language preferences.

A stratified random sampling method was employed to ensure representative coverage of subgroups within the population. The strata were based on the urban-rural classification of school locations, a critical factor in understanding disparities in university selection. This method enabled the capture of diverse perspectives and experiences. A total of 300 questionnaires were distributed, and 239 fully completed responses were received. After data screening, 201 valid responses were retained. Responses exhibiting inconsistencies, such as extreme uniformity across unrelated questions, were excluded to maintain data integrity and accuracy. Items showing significant deviations from normality or poor reliability were also removed.

The survey questionnaire was systematically developed based on Chapman's (1981) Model of Student College Choice and relevant literature on university selection factors (e.g., Ajzen, 1991; Becker, 1964; Eccles et al., 1983). The development process followed a structured approach to ensure content validity, which included item generation, domain definition, and expert validation. A table of specification (included in Appendix 1) provides a detailed mapping of: Each construct and its corresponding items, operational definitions, and supporting references for content validity.

The questionnaire comprised two sections:

1. Demographic Information: This section included ten questions addressing participants' profiles, such as educational qualifications, family income, and geographic location. The scales used were adapted from the Central Bank of Sri Lanka and the Department of Education. These variables were essential for analyzing the influence of socioeconomic factors on university choice.

2. Likert Scale Questions: The items in this section were designed to evaluate factors influencing university selection, including student characteristics, aspirations, external influences, and institutional features. Responses were rated on a 10-point Likert scale ranging from "*least important*" to "*exceptionally important*." The questionnaire was validated through a pilot test and expert feedback to ensure reliability (DeVellis, 2016).

Data Analysis

Data analysis involved multiple steps:

1. Descriptive Analysis: Initial descriptive statistics summarized participant demographics and response patterns using a statistical software package.

2. Reliability Analysis: Cronbach's alpha was calculated to evaluate the internal consistency of survey items.

1. Exploratory Factor Analysis (EFA): This identified key factors with loadings above .50.

2. Structural Equation Modeling (SEM): Using AMOS Version 23, SEM tested relationships between observed and latent variables, offering a detailed understanding of factors influencing university choice. Confirmatory Factor Analysis (CFA) was used to validate model fitness and construct validity (Byrne, 2001; Kline, 2015).

These methodological steps ensured a rigorous analysis, producing reliable and actionable insights into university selection in Sri Lanka.

Results and Discussion

Table 1 summarizes the respondents' demographic and educational characteristics. Most participants were from Matale (34.3%), followed by Badulla (26.4%), Monaragala (21.8%), and Rathnapura (17.6%). The majority (66.9%) fell within the 19–20 age range, typical for students completing Advanced Level (A/L) examinations in Sri Lanka.

Table 1 *Demographic Profile of Candidates (n=239)*

Features		Count	Percentage(%)
District (where you live)	Badulla	63	26.4
	Monaragala	52	21.8
	Rathnapura	42	17.6
	Matale	82	34.3
Age	19–20	160	66.9
	21–22	72	30.1
	23–24	7	2.9
Gender	Male	53	22.2
	Female	181	78.8
Highest Academic Qualification	Other	19	7.9
	Sat for Advanced Level Exam	157	65.7
	Passed Advanced Level Exam	63	26.4
Approximate Distance to Main Town	< 1 km	16	6.7
	1–2 km	16	6.7
	3–5 km	44	18.4
	6–10 km	70	29.3
	10–20 km	48	20.1
	20 km<	45	18.8
Approximate Distance to Nearest Public University from Your Home	< 1 km	22	9.2
	1–2 km	27	11.3
	3–5 km	54	22.6
	6–10 km	117	49.0
	10–20 km	7	2.9
	20 km<	12	5.0
AL Subject Stream	Bio science	29	12.1
	Mathematics	22	9.2
	Commerce	41	17.2
	Arts	110	46.0
	Technology	37	15.5
University Preference	Government Universities	199	83.3
	Semi Government Universities	11	4.6
	Private Universities	11	4.6
	Foreign Universities	18	7.5
Main University Disciplines	Humanities	10	4.2
	Social Science	15	6.3
	Natural Science	1	0.4
	Engineering and Technology	52	21.8
	Business and Management	43	18.0
	Medicine and Health Science	26	10.9
	Education or Primary Education	14	5.9

	Arts and Design	30	12.6
	Law and Legal Studies	36	15.1
	Agriculture and Environmental Studies	12	5.0
<hr/>			
Monthly Family Income	<Rs. 17,000	21	8.8
	Rs. 17,000–27,000	37	15.5
	Rs. 27,000–56,000	113	47.3
	Rs. 56,000–200,000	63	26.4
	Rs. 200,000 <	5	2.1

Academically, 65.7% of respondents had sat for their A/L exams and 26.4% had completed them, placing them at or near university entry level. Over 70% resided in rural areas distant from district capitals, with 60% living near public universities, indicating reasonable access to higher education. For subject streams, Arts and Humanities dominated (46.0%), followed by Commerce (17.2%), with Biosciences, Mathematics, and Technology making up the rest. These figures aligned with national trends, with over half of school leavers choosing Arts. Government universities were preferred (83.3%), reflecting the appeal of Sri Lanka's free higher education system, particularly in rural areas.

Students' intended fields of study showed a balanced distribution across disciplines, except for lower representation in natural sciences. Family income data revealed that 47% of respondents fell within the Rupees 27,000–56,000 range, indicative of lower-middle-income status, highlighting the socioeconomic challenges influencing their education choices.

To identify key variables influencing student university choices, a Structural Equation Model was utilized. The process began with Exploratory Factor Analysis using 26 variables. Principal Axis Factoring (PAF) with varimax rotation was applied, as it is more robust against normality violations compared to Principal Component Analysis and better suited for identifying underlying factors. Unlike PCA, which focuses on variance retention for dimensionality reduction, Principal Axis Factoring aims to uncover latent structures among variables.

Eight variables were excluded due to factor loadings below the 0.50 threshold, leaving 18 variables for SEM analysis. A PAF approach with varimax (orthogonal) rotation was used to derive the factor structure. Varimax rotation was chosen to maximize the interpretability of factors by maintaining orthogonality, aligning with theoretical expectations that the extracted constructs remain distinct. While oblique rotation assumes factor correlation, preliminary analyses indicated minimal inter-factor correlations, justifying the use of varimax for a clearer and more meaningful factor solution. This approach, based on established guidelines for factor analysis (Hair et al., 2019), ensured construct validity, internal consistency, and model reliability. By removing weakly loading items, the final model demonstrated a stronger factor structure, improved explanatory power, and better overall fit for hypothesis testing.

Table 2 highlights the suitability of the data for factor analysis through Bartlett's Test of Sphericity ($\chi^2 = 2175.94$, $df = 171$, $p < .05$) and the Kaiser-Meyer-Olkin (KMO) measure (0.809). The significant Bartlett's Test result confirmed correlations among variables, while the KMO value demonstrated strong data adequacy for factor analysis.

Table 2 KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.809
Bartlett's Test of Sphericity	Approx. Chi-Square	2175.068
	<i>df</i>	171
	Sig.	.000

Table 3 outlines EFA results, extracting five factors based on Kaiser criterion (eigenvalues > 1.0).

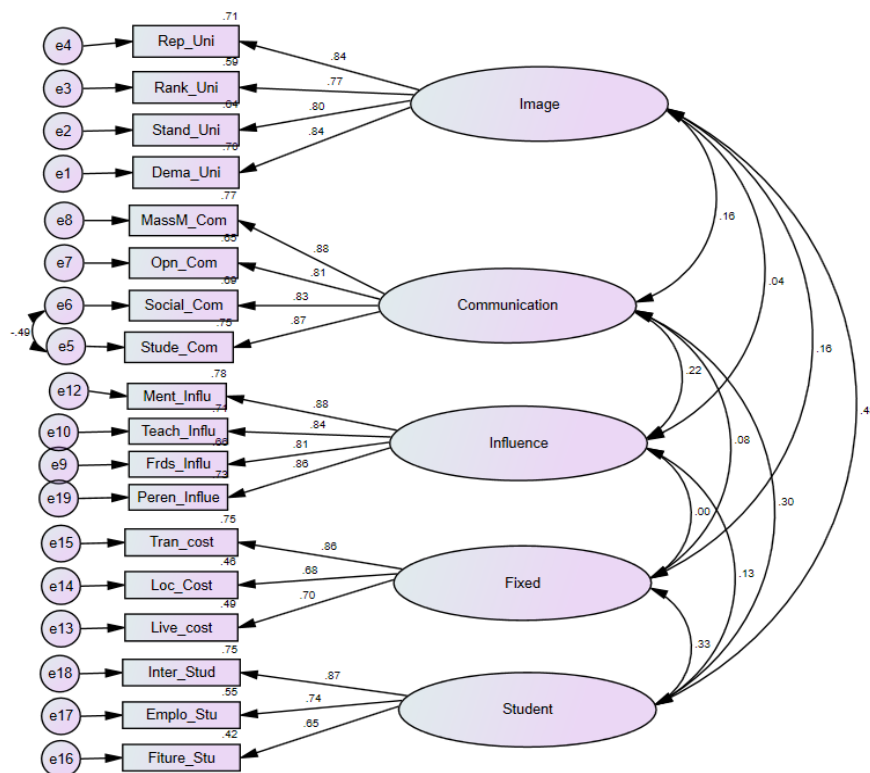
Table 3 *Exploratory Factor Analysis Results*

Factor	Total Variance Explained								
	Initial Eigenvalues			Extraction Sums of Squared			Rotation Sums of Squared		
	Total	Variance % of	Cumulative %	Total	Variance % of	Cumulative %	Total	Variance % of	Cumulative %
1	4.999	26.313	26.313	4.661	24.534	24.534	3.224	16.971	16.971
2	3.355	17.660	43.972	3.042	16.010	40.544	2.986	15.715	32.686
3	2.457	12.931	56.904	2.164	11.392	51.936	2.781	14.636	47.322
4	2.030	10.687	67.590	1.649	8.677	60.613	1.763	9.278	56.600
5	1.274	6.707	74.297	.907	4.774	65.387	1.670	8.787	65.387

Extraction Method: Principal Axis Factoring

These factors explain 74.297% of the initial variance, which decreases slightly to 65.387% post-rotation. The rotation redistributes the explained variance more evenly: the first factor accounts for 16.971%, the second 15.715%, and so on. The balanced distribution aids interpretability, showing that the dataset's structure was well captured by these five factors. The final factors and their cumulative variance representation affirm its robustness, providing a foundation for subsequent SEM analysis.

After conducting Exploratory Factor Analysis, the Structural Equation Model was implemented by exporting the EFA outcomes directly to AMOS with the appropriate plug-in. The measurement model of the SEM in AMOS is depicted in Figure 1.

Figure 1 *Measurement Models for CFA*

The model's fitness was evaluated using Maximum Likelihood estimation. A total of 2,000 bootstrapping samples were utilized to enhance the accuracy and robustness of parameter estimation in SEM. The AMOS output revealed the following characteristics of the model: No. of variables: 47, No. of observed variables: 18, No. of unobserved variables: 29, No. of exogenous variables: 24, and No. of endogenous variables: 23.

Following the guidelines outlined by Awang (2015), the first step involved identifying observations that were farthest from the centroid using Mahalanobis distance. To address issues related to normality, 38 outliers were identified and subsequently removed from the dataset. As a result, the dataset was refined to include 201 valid responses, ensuring conformity to the assumptions of normality in subsequent analyses. The measurement model tested for item redundancy by inspecting the Modification Indexes of the output. A correlated error above 10.0 between the e6 and e5 items was noted, which are constructs of University Communication with students. Therefore, these two correlated measurement errors of redundant items were considered as free parameters, and the final measurement model was developed.

Following the finalization of the measurement model, its fitness was rigorously assessed using various fit indices, encompassing absolute fit, incremental fit, and parsimonious fit criteria. Table 4 presents a comprehensive overview of these fitness measures and their respective levels of acceptance.

Table 4 *Model Fit and the Level of Acceptance*

Category	Index	Reported Value	Acceptable Threshold
1. Absolute Fit	Chi-Square (CMIN/ χ^2)	198.708	$p > .05$ (ideal, but sensitive to sample size)
	DF (Degrees of Freedom)	129	-
	CMIN/DF (Chi-Square/df)	1.540	< 3.0 (Good Fit)
	RMSEA (Root Mean Square Error of Approximation)	.052	< .08 (Good Fit)
	GFI (Goodness-of-Fit Index)	.906	> .90 (Acceptable Fit)
	RMR (Root Mean Square Residual)	.066	< .05 Preferred
2. Incremental Fit	AGFI (Adjusted Goodness-of-Fit Index)	.90	> .90 (Acceptable Fit)
	CFI (Comparative Fit Index)	.965	> .90 (Good Fit)
	TLI (Tucker-Lewis Index)	.958	> .90 (Good Fit)
	NFI (Normed Fit Index)	.907	> .90 (Good Fit)
3. Parsimonious Fit	Chi sq/df (CMIN/DF)	1.540	< 3.0 (Good Fit)

1. Absolute Fit: This category evaluates how well the model fits the observed data without considering model complexity. The Chi-square statistic yielded a value of 198.708, which, while ideally expected to have a non-significant p -value ($> .05$), is known to be highly sensitive to sample size. For larger samples, Chi-square often becomes significant regardless of model fit, making it less reliable as a standalone metric. The CMIN/DF (Chi-Square/df) ratio of 1.540 falls well within the acceptable range (< 3.0), indicating a good model fit. Additionally, the Root Mean Square Error of Approximation (RMSEA) was .052, which meets the criterion for a good fit ($RMSEA < .08$). The Goodness-of-Fit Index (GFI) was .906, exceeding the acceptable threshold ($> .90$). However, the Root Mean Square Residual (RMR) was .066, which was slightly above the preferred value ($< .05$), suggesting some room for improvement in residual discrepancies.

2. Incremental Fit: This category assesses the improvement in fit resulting from adding more parameters to the model. The Adjusted Goodness of Fit Index (AGFI) was .90, meeting the acceptable threshold ($> .90$). Additionally, the Comparative Fit Index (CFI) was .965, the Tucker-Lewis Index (TLI) was .958, and the Normed Fit Index (NFI) was .907—all of which indicate a good model fit as they

exceed the recommended threshold ($> .90$). These results demonstrate that the model performed well in capturing incremental improvements.

3. Parsimonious Fit: This category evaluates the balance between model fit and simplicity. The Chi-Square divided by Degrees of Freedom (CMIN/DF) ratio was 1.540, well below the threshold of 3.0, indicating an appropriate balance between model complexity and fit quality. This suggests that the model was neither overly simplistic nor unnecessarily complex, making it a well-optimized fit.

Overall, the measurement model demonstrated satisfactory fit across all three categories, meeting or exceeding the predefined acceptance criteria. This comprehensive evaluation provides confidence in the measurement model's reliability and validity for further analysis and interpretation. Its validity and reliability were further scrutinized through an examination of convergent validity and the reliability of all constructs. Table 5 illustrates the convergence of these constructs, with both the average variance extracted (AVE) and composite reliability (CR) values meeting established thresholds. Notably, all AVE values exceeded .50, indicating sufficient reliability in measuring each construct.

Additionally, composite reliability was confirmed, as all CR values surpassed the minimum requirement of .60, further bolstering the model's reliability. Construct validity was rigorously assessed through an evaluation of fitness indexes, as detailed above in Table 4. These indexes represent various aspects of model fit, including absolute fit, incremental fit, and parsimonious fit criteria. The results demonstrated that all fitness indexes met or exceeded accepted levels of fit, providing strong evidence in support of construct validity. Furthermore, Table 5 presents the confirmatory factor analysis report, providing additional insights into the model's validity. Following a thorough examination, redundant tests were conducted to ensure the model's robustness.

Table 5 *Confirmatory Factor Analysis Report*

Construct	Item Code	Factor Loading	Cronbach's Alpha	CR (Min. .60)	AVE (Min. .50)	MSV
Student Characteristics	Sinterest	.867	.792	.800	.575	.229
	SPromotejob	.744				
	Scareer	.648				
	UniTransport	.865				
Fixed University Characteristics	UniLocation	.678	.787	.795	.567	.109
	UniCCOL	.702				
	Imentors	.883				
	ITeachers	.842				
Significant persons	IFriends	.810	.911	.911	.719	.048
	Ipagent	.856				
	Mmassmedia	.880				
	Mopendays	.809				
University effort to Communication	Msocialmedia	.833	.901	.911	.719	.088
	Munistudents	.868				
	UniReputation	.845				
	UniRanking	.768				
University Image	UniStanders	.800	.882	.887	.662	.229
	UniDemand	.839				

Note. CR = Composite Reliability, AVE = Average Variance Extracted, MSV = Maximum Shared Variance.

To ascertain the discriminant validity of the constructs, Table 6 presents the Discriminate Validity Index. Notably, the diagonal values (square roots of AVE) of each construct were found to be higher than the correlations between constructs, suggesting successful discrimination among the constructs within the measurement model.

Table 6 *Discriminant Validity Index*

	Fixed University Characteristics	University Image	University Effort to Communicate	Significant Persons	Student Characteristics
Fixed University Characteristics	.753				
University Image	.162	.814			
University Effort to Communicate	.084	.164	.848		
Significant Persons	.005	.038	.219	.848	
Student Characteristics	.330	.479	.297	.127	.758

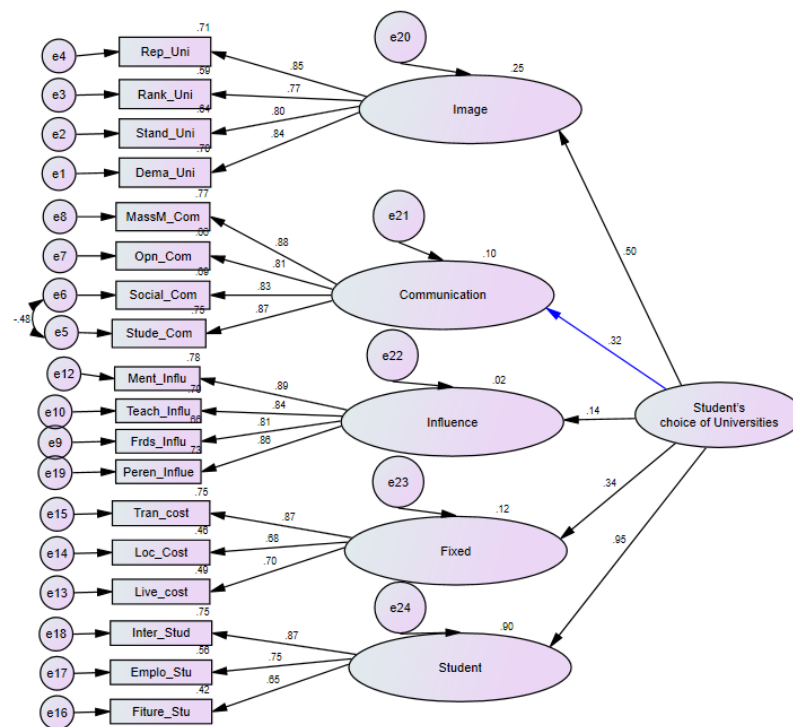
Normality of data is a crucial assumption in SEM, especially when using Maximum Likelihood Estimation (MLE). The accuracy and efficiency of MLE depend significantly on normality of the data distribution (Byrne, 2016). Non-normal data can lead to biased parameter estimates, underestimated standard errors, and inflated Chi-square values, ultimately affecting model validity (West et al., 1995). The use of skewness and kurtosis values in normality assessment ensures that any deviations are within acceptable limits, facilitating robust and reliable SEM analysis (Curran et al., 1996).

After achieving model fitness and validation, the normality assessment proceeded to the structural modeling phase. The test for normality and outliers was conducted for each variable in the dataset. As per SEM guidelines, MLE was utilized. The thresholds for skewness and kurtosis values are well-documented in SEM literature. Kline (2015) suggests that for a sample size larger than 200, a skewness value below 1.5 and a kurtosis value below 7.0 are indicative of an acceptable level of normality. These thresholds help ensure that the data approximates a normal distribution closely enough for the assumptions of MLE to hold (Tabachnick & Fidell, 2013). Given that the sample size exceeded 200, the maximum acceptable value for skewness was 1.5, and the critical range for kurtosis should not exceed 7.0. In Table 6, both the skewness and Critical Ratio (CR) values did not exceed the accepted range. Therefore, normality was assured in the model.

The fit indices (Chi-square/*df*, RMSEA, NFI, NNFI, CFI, GFI, AGFI) obtained for the model in Figure 2 were reviewed, and it was observed that the model was significant at the .05 level. The Standardized Root Mean Square Residual (SRMR) value of .065 indicated that the model explained the correlations within an average error of .065. Although this SRMR value was slightly higher than the ideal value of .05 for well-fitting models, values as high as .08 are deemed acceptable (Jöreskog & Sörbom, 1993).

The Chi-square/*df* ratio of 198.708 was below the threshold, with a CMIN/*df* value of 1.54, suggesting that the model fits the data well relative to its complexity and that the sample size was adequate for assessment. The Normed-Fit Index (NFI) was .907, indicating a good fit as recommended values greater than .90 are indicative of a good fit. The Tucker-Lewis Index (TLI) was .958, suggesting a very good fit as values should be $\geq .95$ (Jöreskog & Sörbom, 1993).

Figure 2 *Second-Order Model of Factorial Structure for University Choice Fit Indices of Model*



Note. p -value = .000, CMIN/df 1.540, CFI = .965, TLI = .958, IFI = .965, RMSEA = .05, NFI = .907, GFI = .906, RMR = .0654

Discussion

This study integrated Chapman's model (1981) and the Theory of Planned Behavior to examine factors influencing university choices among Sri Lankan students. By employing printed surveys and random sampling, this study aimed to identify the underlying constructs that shape students' university selection decisions. Factor analysis was utilized to uncover patterns among observed variables, allowing for the identification of latent factors that influence student choices.

The initial hypotheses were developed based on theoretical considerations and prior research, identifying key determinants of university choice such as academic reputation, financial considerations, and social influences. However, the exploratory factor analysis (EFA) grouped these individual variables into five broader latent constructs: Student Characteristics, University Image, Fixed University Characteristics, University Communication Efforts, and Influence of Significant Persons. To ensure alignment between the theoretical framework and empirical findings, the original hypothesis variables were mapped onto these broader constructs. Specifically, academic reputation and perceived quality of education were captured under University Image, while financial considerations were categorized under Student Characteristics. Similarly, geographical proximity and institutional facilities aligned with Fixed University Characteristics, whereas social and cultural influences (such as family expectations and peer advice) were reflected in Influence of Significant Persons. Lastly, effective communication and information delivery by universities corresponded with University Communication Efforts.

This methodological approach is supported by classical literature in factor analysis and structural equation modeling. Hair et al. (2019) emphasized that EFA serves to identify latent constructs that best represent observed variables, ensuring a more reliable and valid measurement model. Similarly, Kline (2015) noted that theoretical constructs often manifest differently when subjected to empirical testing, necessitating an adaptation of originally hypothesized variables into data-driven factors. MacCallum et al. (1999) further argued that Exploratory Factor Analysis is a critical step in refining

theoretical models, helping researchers distill complex relationships into meaningful constructs that improve model fit and explanatory power. Structural Equation Modeling identified five key constructs affecting university choice: Student Characteristics, University Image, Fixed University Characteristics, University Communication Efforts, and Influence of Significant Persons.

Among these, Student Characteristics had the most substantial influence, with a correlation coefficient of $\gamma = .95$. This construct included factors such as a student's interest in studying, expected job opportunities after graduation, and future career prospects. These findings aligned with studies by Connie et al. (2022) and Cabrera and La Nasa (2000), which emphasized employment opportunities as critical in university decision-making. Nearly 50% of surveyed students reported a monthly family income of Rupees 27,000–56,000 (US\$88–\$183), highlighting the aspirational role of higher education in improving socioeconomic status.

The University Image construct, with a correlation of $\gamma = .50$, was another significant determinant. This included reputation, rankings, and demand. Hemsley-Brown and Oplatka (2006) stressed that institutional reputation heavily influences student decisions. Similarly, Maringe (2006) observed that demand for universities is often linked to academic quality, campus facilities, and overall student experience. The preference for public universities, chosen by 83% of respondents, reflected their perceived superior reputations and career prospects compared to private institutions.

Fixed University Characteristics, including location, transport costs, and cost of living, also significantly impacted choices ($\gamma = .34$). These factors were particularly relevant for rural students, where logistical and financial barriers can restrict access to higher education. Similarly, University Communication Efforts ($\gamma = .34$) played a critical role, emphasizing the value of outreach activities such as open days, social networks, and seminars. These efforts were particularly effective in rural settings, where direct communication bridges information gaps about programs and career prospects.

The influence of Significant Persons, such as peers, teachers, and family members, had a modest positive impact ($\gamma = .14$). While external influences were present, they were less decisive compared to intrinsic motivations and institutional factors. This aligned with recent studies (e.g., Connie et al., 2022), indicating that students in this context exhibit greater independence in decision-making.

Conclusion

This study provides critical insights into the factors shaping university choices in Sri Lanka's rural districts. These findings have practical implications for policymakers aiming to enhance higher education enrollment, and highlighted the paramount importance of student characteristics, particularly career aspirations, in shaping decisions. Students prioritize public universities due to expectations of better employment opportunities, underscoring the need for educational offerings aligned with labor market demands.

University image, including reputation and rankings, emerged as another crucial factor. Institutions must maintain high standards and quality assurance to attract prospective students. Efforts to improve institutional visibility through effective communication strategies, including social media and outreach programs, are essential. Low-cost initiatives like open days and school-level workshops can significantly impact rural students. Contrary to expectations, students in these districts demonstrated a notable degree of independence, with relatively limited influence from family, peers, or high school personnel. This highlights the need for direct communication between universities and students, bypassing traditional mediators.

In summary, this study identified key latent constructs influencing university selection through factor analysis. Academic reputation and perceived quality of education, financial considerations, geographical proximity and institutional facilities, social and cultural influences, and university communication efforts emerged as significant dimensions shaping students' decisions. Aligning university programs with students' academic expectations, addressing financial and logistical barriers, and strengthening institutional reputation can enhance the appeal of higher education institutions. Additionally, improving communication strategies and outreach efforts can ensure students receive the necessary information to make informed choices. By addressing these core factors, policymakers

and educational institutions can improve accessibility and enrollment, ensuring that higher education remains a pathway to socioeconomic advancement for Sri Lanka's youth.

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Appendix 1

Survey Items and their Theoretical Foundations for University Choice Determinants

Construct	Item Code	Description	Reference
Student Characteristics	Sinterest	Interest in university admission	Ajzen (1991)
	Spromotejob	Aspiration to pursue higher education for career growth	Becker (1964)
	Scareer	Future career perspectives and job market expectations	Eccles et al. (1983)
Fixed University Characteristics	UniTransport	Accessibility of transportation to the university	Chapman (1981)
	UniLocation	Geographical location and convenience	Chapman (1981), Cabrera & La Nasa (2000)
	UniCCOL	Cost of living while attending university	UNESCO (2023)
Significant Persons	Imentors	Influence of mentors on university selection	Coleman (1988), Chapman (1981)
	ITeachers	Recommendations from teachers and academic advisors	Coleman (1988), Chapman (1981)
	IFriends	Advice and experiences shared by friends	Coleman (1988), Chapman (1981)
	Iparent	Parental expectations and financial support	Coleman (1988), Chapman (1981)
University Efforts to Communicate	Mmassmedia	Impact of mass media (TV, newspapers, radio) on decision-making	Hemsley-Brown & Oplatka (2006)
	Mopendays	University open days and promotional events	Maringe (2006)
	Msocialmedia	Social media outreach and online engagement	Kotler & Keller (2012)
	Munistudents	Influence of current university students on prospective applicants	Kotler & Keller (2012)
University Image	UniReputation	Reputation of the university within academia and industry	Chapman (1981), Hemsley-Brown & Oplatka (2006)
	UniRanking	National and international ranking of the university	Chapman (1981), Hemsley-Brown & Oplatka (2006)
	UniStandards	Academic standards, curriculum quality, and faculty expertise	Cabrera & La Nasa (2000), Maringe (2006)
	UniDemand	Overall demand and competition for admission	Cabrera & La Nasa (2000), Maringe (2006)

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Acknowledgment of Sources: Reviewers should point out important relevant published work that has not been cited by the authors. A reviewer should also call to the editor's attention any substantial similarity or overlap between the manuscript under consideration and any other published paper of which they have personal knowledge.

SUBMISSIONS

Unsolicited manuscripts are welcomed. Submissions must be in the form of completed articles; partially completed articles are not considered.

Articles published elsewhere will not be considered. Full manuscripts of abstracts published in any form will be considered, but editorial judgment will be exercised to accept or reject.

The journal's policy is not to reconsider an article that has been rejected by its referees. Papers that primarily feature negative results are also unlikely to be accepted, as are those which focus on promoting a concept by selectively choosing positive results.

Papers rejected by the editorial team are not open to reconsideration. Rejection may be based on a number of considerations including relevance, interest to readers, timeliness, adoption of a writing style that is considered offensive or partisan political, outside the space considerations stipulated by the journal, or failure to follow the specified guidelines.

Human Behavior, Development and Society (HBDS) Author Guidelines

Here are some general guidelines for preparing and submitting articles to *HBDS*.

1. Manuscripts for Submissions

- 1.1. Manuscripts should be no less than 10 and no more than 15 pages in length.
- 1.2. Manuscripts should be written in correct and standard academic English.
- 1.3. Manuscripts should be single-spaced.
- 1.4. Manuscripts should use Calibri font size 11.
- 1.5. Manuscripts should contain minimal formatting (bold and italics commands are acceptable).
- 1.6. Manuscripts should not contain editorial controls of any kind.
- 1.7. Manuscripts should also contain a 800–900-word abstract of the article. Provide at least three keywords, but do not exceed seven.

2. Suggested Referencing Format

- 2.1. In order to maintain a consistent look for *Human Behavior, Development and Society*, use of the American Psychological Association (APA) publication guidelines is mandatory. For details, please see the APA Publication Manual (7th edition).
- 2.2. *HBDS* follows the APA guidelines for endnotes (preferred), in-text citations and references.
- 2.3. Referencing Samples: Please refer to <http://www.apastyle.org/> for questions about referencing, and serialization in the APA format.

3. Submissions Procedure

- 3.1. Manuscripts submitted to *HBDS* must not have been previously published elsewhere or under review for publication in other journals.
- 3.2. Manuscripts must adhere to the journal guidelines; failure to comply with these may result in the rejection of a submission.
- 3.3. Manuscripts must be submitted through the ThaiJo online submission system at <https://so01.tci-thaijo.org/index.php/hbds>; look for the *HBDS* web page.
- 3.4. Manuscripts should be submitted by no later than December 31 for the April issue, April 30 for the August issue, and August 31 for the December issue. Nonetheless, even if a submission is received before the stated dates, and is accepted, the journal's Administrative Board reserves the right to decide on the publication date.

4. Review Process

- 4.1. Manuscripts will be checked for originality and prescreened by the editorial staff to see if their structure, content, and formatting comply with journal standards.
- 4.2. Manuscripts will undergo a double-blind review process conducted by at least 2 qualified independent peer reviewers who are external to authors' institutions, and knowledgeable in a relevant academic field. This process typically takes from 4–6 weeks, depending on peer reviewer response times.
- 4.3. Authors will be informed of reviewers' comments as soon as they are available.
- 4.4. Authors will be given up to 1 month to revise their papers (should that be necessary) and should return the revised version by the 1st of February/June/October (or earlier).

5. Numbers in APA Style

- 5.1 In general, round decimals to two places with the exception of *p*-values (three decimal places is the limit— $p < .01$ or $.001$). Percentages are expressed as whole numbers or to one decimal place.
- 5.2 Rounding rules: If the final number is 5 or more, add one to the last decimal place to be kept (1.565 becomes 1.57). If the number is less than 5, write the number with the required decimal places (2.344 becomes 2.34).
- 5.3 When a statistical expression cannot exceed the value of 1, then the number reported is NOT preceded by a zero (e.g., with *p*-values— $p < .01$, also applies to correlations, Cronbach's alpha).
- 5.4 Large numbers—use commas between groups of three digits in most figures of 1,000 or more.

5.5 Further information can be gained by consulting. James Cook University, Singapore. (n.d.). Numbers in APA. See https://www.jcu.edu.sg/__data/assets/pdf_file/0009/680085/Numbers-in-APA.pdf; Guadagno, R. (2010). Writing up your results – Guidelines based on APA style. Retrieved from https://ich.vscht.cz/~svozil/lectures/vscht/2015_2016/sad/APA_style2.pdf

6. Recommended Verb Tenses for APA Style Articles (p. 118)

Paper Section	Recommended Tense	Example
Literature review (or whenever discussing other researchers' work)	Past Present perfect	Quinn (2020) presented Since then, many investigators have used
Method Description of procedure	Past Present perfect	Participants completed a survey Others have used similar methods
Reporting results	Past	Results were nonsignificant Scores increased Hypotheses were supported
Discuss implications of results	Present	The results indicate
Presentation of conclusions, limitations, future directions, etc.	Present	We conclude Limitations of the study are

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