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The Impact of Higher Education Enrollment on Per Capita GDP in the Yangtze River Delta: An Analysis Based on BCC-DEA and Spatial Econometric Models

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Abstract

The Yangtze River Delta (YRD) is a key driver of China's economic growth, with higher education playing a critical role in fostering regional economic development. This study uses the BCC-DEA model and spatial econometric methods with 2022 data to evaluate the efficiency of regular higher education enrollment in contributing to per capita GDP and explores its spatial distribution. The results reveal significant regional disparities in resource allocation, with some cities being DEA-efficient, such as Zhoushan, Wuxi, and Xuancheng (TE = 1), while others exhibit inefficiencies, including Shanghai (TE = 0.15; SE = 0.338) and Hefei (TE = 0.032; SE = 0.934). Spatial correlation between higher education resources and per capita GDP is weak, with Moran's $I = -0.073$, and OLS regression shows a mismatch between educational resources and economic development, with the coefficient of enrollment (-0.017 , $p = 0.694$) and low explanatory power ($R^2 = 0.094$; adjusted $R^2 = -0.359$). This study provides theoretical insights and policy recommendations for optimizing resource allocation and promoting coordinated development between higher education and the economy in the YRD region.

Keywords: Yangtze river delta, Student enrollment, Per capita GDP, BCC-DEA, Spatial econometric analysis

Introduction

The Yangtze River Delta region, comprising Shanghai, Jiangsu, Zhejiang, and Anhui provinces, is a crucial engine of China's economic development and has long played a pivotal role in the nation's overall economic and social progress. Known for its large economic scale and solid industrial foundation, the region has also leveraged its strong innovation-driven capacity and high degree of openness to play an essential role in advancing national reform and opening-up, as well as enhancing the country's comprehensive national strength (Ying, 2021). On November 30, 2023, President Xi Jinping chaired a symposium in Shanghai to promote the deeper integration of the Yangtze River Delta and delivered an important speech. He emphasized that advancing the integration of the region is of significant importance for establishing a new development pattern, driving high-quality growth, and achieving Chinese-style modernization and national rejuvenation. He called for a coordinated approach to advancing scientific and technological innovation, industrial innovation, ecological protection, and economic development, with the goals of "integration" and "high quality," to serve as a model and guide for high-quality development across the country.

Education, as a fundamental driver of economic development, plays an increasingly critical role in the integration and high-quality development of the Yangtze River Delta region. In particular, higher education plays an irreplaceable role in improving human capital quality, driving technological innovation, and promoting industrial upgrading (Liang Chen, 2024). The Yangtze River Delta region hosts some of the country's leading higher education resources, including universities and research institutions with international influence, which provide strong talent support and intellectual backing for the regional economy (Jinling Gao, 2024; Wei Bu, 2022). However, significant disparities in the allocation and utilization efficiency of higher education resources within the region persist, and the uneven distribution of economic development levels and educational resources among cities exacerbates this issue. Therefore, studying the impact of the number of university students in the Yangtze River Delta on regional economic development, analyzing the spatial distribution characteristics and efficiency of higher education resources, and exploring their potential mechanisms for economic development is of great theoretical value and practical significance. This research not only deepens the understanding of the synergy between education and economic development, but also provides scientific evidence for optimizing regional educational policies, improving resource allocation efficiency, and promoting economic integration.

A substantial body of research has explored the mechanisms through which education influences economic growth globally. The general consensus is that higher education significantly promotes regional economic development by enhancing human capital, facilitating knowledge spillovers, and boosting technological innovation capacity (Barro & Sala-i-Martin, 2004). For instance, the experiences of European and American countries demonstrate that higher education not only supplies the labor market with highly skilled talent, but also drives regional industrial upgrading through university-industry-government collaboration. In developing countries, the expansion and investment in higher education also have a significant positive impact on economic growth, although the intensity and mechanisms of this impact may vary depending on the stage of regional development and the distribution of educational resources (Jaffry, 2022).

In China, as higher education rapidly shifted from an elite model to a mass model, its role in promoting regional economic development has garnered significant attention. Recent studies have shown that the positive effects of education on per capita GDP are particularly pronounced in the eastern coastal regions, and there is a clear spatial heterogeneity between

educational investment and economic growth (Dexiang Zhang, 2024). However, existing research primarily focuses on national or provincial levels, and studies specifically examining the distribution and utilization efficiency of higher education resources within particular regions, such as the Yangtze River Delta, remain insufficient. In particular, there is a lack of comprehensive analysis of the interaction between education and economic development from the perspectives of spatial econometrics and efficiency evaluation.

In the context of the important relationship between economic development and the allocation of higher education resources in the Yangtze River Delta region, this study explores the relationship between the number of university students and per capita GDP, focusing on the following core questions: First, does higher education significantly influence the per capita GDP of cities in the Yangtze River Delta? Second, what are the spatial distribution characteristics and efficiency of higher education in the region? Third, what policy implications can be drawn from the efficiency of higher education resource allocation for regional economic development? To address these questions, this study employs Data Envelopment Analysis (DEA) to assess the resource utilization efficiency of the number of university students in relation to per capita GDP and identifies the spatial distribution characteristics of educational efficiency. Additionally, spatial autocorrelation models (such as Moran's I and LISA cluster analysis) are used to reveal the spatial dependence and regional agglomeration effects between higher education and per capita GDP. Furthermore, a spatial two-stage ordinary least squares (OLS) regression analysis is conducted to empirically assess the quantitative impact of higher education on per capita GDP. This research provides scientific evidence and policy recommendations for optimizing the allocation of higher education resources and promoting the coordinated economic development of the Yangtze River Delta region.

Methodology

1. Data Sources

The data used in this study are sourced from the officially published and publicly available Shanghai Statistical Yearbook, Jiangsu Statistical Yearbook, Anhui Statistical Yearbook, and Zhejiang Statistical Yearbook (2023 edition). The data are from the end of 2022 and include indicators related to higher education and economic development in the Yangtze River Delta region. This study selects 40 prefecture-level cities and 1 directly administered municipality (Shanghai) from the three provinces and one municipality (Jiangsu, Zhejiang, Anhui, and Shanghai) in the Yangtze River Delta as the Decision Making Units (DMUs). The key data used in this study include the number of university students and per capita GDP for each city.

The number of university students is defined as the total number of full-time students enrolled in all higher education institutions offering degree programs in a prefecture-level city. These institutions include full-time universities, independent colleges, higher vocational schools, and other higher education establishments that meet national standards for establishment and approval procedures. This variable reflects the scale of higher education resources in the city and is one of the key indicators of educational development. The number of university students not only represents the capacity for educational resource delivery but also indirectly reflects the supply and demand conditions of higher education within the region (Qian & Smyth, 2008). By quantifying educational resources at the prefecture level, this indicator provides a scientific basis for analyzing the impact of higher education on regional economic growth.

Per capita GDP is a core indicator used to measure the level of regional economic development. It is defined as the ratio of the total value of final output produced by all resident units in a certain period (regional GDP) to the total population of the region. Per capita GDP reflects both the overall efficiency of economic activities in the prefecture and the average economic welfare level of its residents. As a research variable, per capita GDP directly reflects the quality of regional economic development and provides important evidence for examining the contribution of higher education resources to economic growth (Barro, 2013).

2. BCC-DEA Model

Data Envelopment Analysis (DEA) is a non-parametric method based on mathematical programming, primarily used to assess the relative efficiency of Decision Making Units (DMUs) in environments with multiple inputs and outputs. This method was first introduced by Charnes, Cooper and Rhodes (1978) with the CCR model, which assumes that all DMUs exhibit constant returns to scale (Charnes et al., 1978). Later, Banker et al. (1984) introduced the BCC model, relaxing the constant returns to scale assumption of the CCR model and allowing different DMUs to exhibit varying returns to scale. The BCC model is based on four basic axioms of the production possibility set and incorporates Shephard's distance function, enabling it to simultaneously measure both technical efficiency and scale efficiency of the DMUs.

This study employs the BCC-DEA model in its product form for efficiency evaluation, primarily because this model can flexibly handle non-linear relationships between inputs and outputs and supports the variable returns to scale (VRS) assumption. This is especially suitable for the Yangtze River Delta region, where there are significant differences in scale and resource distribution among prefecture-level cities. In this research, the DEA-BCC model is used to analyze the impact of university student enrollment (educational resources) on per capita GDP (economic output) efficiency in 41 cities in the Yangtze River Delta. Specifically, the prefecture-level cities are treated as DMUs, with the number of university students as the input variable and per capita GDP as the output variable. By constructing an efficiency frontier based on these input and output variables, DEA can reveal the differences in efficiency regarding higher education resource allocation and economic output across different cities, providing a scientific basis for optimizing the allocation of regional higher education resources.

The formulas used in this study are based on the descriptions by Gao and Huang (2011) on page 34 of Management Performance Evaluation: Data Envelopment Analysis (Qiang Gao, 2011), which provide a detailed explanation of the application of the product form model in DEA. The specific formula is as follows:

$$\text{Max } h_k = \sum_{r=1}^s u_r Y_{rk} - u_0$$

Subject to

$$\begin{aligned} & \sum_{i=1}^m v_i X_{ik} = 1 \\ & \sum_{r=1}^s u_r Y_{rj} - \sum_{i=1}^m v_i X_{ij} - u_0 \leq 0, j = 1, 2, \dots, n \\ & u_r, v_i \geq 0, r = 1, \dots, s, i = 1, \dots, m \\ & u_0 \text{ No positive or negative restrictions} \end{aligned}$$

(1)

3. Spatial Analysis

Building on the previous DEA model analysis, this study further incorporates spatial econometric methods to explore the spatial relationship between university enrollment and per capita GDP in the Yangtze River Delta. Spatial econometrics is a key tool for studying the spatial distribution and interrelationships of geographic phenomena, aiming to reveal the interdependence and spatial effects between spatial units (Anselin, 1988). Based on Anselin's (1988) theoretical framework, this study uses the DataV.GeoAtlas data visualization platform to download spatial map resources of the Yangtze River Delta region and utilizes the GeoDa spatial data analysis software for spatial modeling and visualization of relevant variables. This allows for the identification of spatial dependence and spillover effects between university enrollment and per capita GDP.

The specific analytical process includes the following three steps:

Step 1: Select Anhui, Jiangsu, Zhejiang, and Shanghai as the four provincial-level administrative units for spatial autocorrelation analysis. Spatial autocorrelation refers to the correlation between a geographic phenomenon or attribute in a given spatial unit and the same phenomenon or attribute in neighboring units. Spatial autocorrelation can be divided into global autocorrelation and local autocorrelation.

Global autocorrelation describes the distribution pattern of a phenomenon or attribute across the entire study area, revealing whether spatial clustering exists. The calculation formula for global autocorrelation is as follows:

$$I = \frac{n}{\sum_{i=1}^n \sum_{j=1}^n w_{ij}} \cdot \frac{\sum_{i=1}^n \sum_{j=1}^n w_{ij} (x_i - \bar{x})(x_j - \bar{x})}{\sum_{i=1}^n (x_i - \bar{x})^2} \quad (2)$$

Local autocorrelation further reveals specific clustering areas and can identify spatial associations within local regions. The calculation formula for local autocorrelation is as follows:

$$LISA_i = (x_i - \bar{x}) \sum_{j=1}^n w_{ij} (x_j - \bar{x}) \quad (3)$$

Where:

I represents Moran's I Index;

n is the number of spatial units;

x_i and x_j represent the attribute values of regions i and j , respectively;

\bar{x} is the global mean;

w_{ij} is the spatial weight matrix, indicating the spatial adjacency relationship between regions i and j ;

$LISA_i$ represents the Local Moran's I Index (Local Indicators of Spatial Association).

Step 2: By plotting the bivariate Moran's I map, BILISA clustering map, and significance distribution map, this study reveals the spatial correlation characteristics between university enrollment and per capita GDP. The bivariate Moran's I map reflects the degree of spatial association between the two variables, determining whether there is a positive or negative spatial correlation. The BILISA clustering map further identifies specific spatial clustering types, including "high-high clusters" (both university enrollment and per capita GDP are high), "low-low clusters" (both are low), "high-low clusters" (high university enrollment

but low per capita GDP), and “low-high clusters” (low university enrollment but high per capita GDP), uncovering the spatial imbalance between regions. The significance distribution map shows the significant areas of local spatial autocorrelation, identifying the statistically significant spatial association regions and further revealing the spatial distribution differences between regions.

Finally, ordinary least squares (OLS) regression analysis is used to model the relationship between university enrollment and per capita GDP, generating a regression report to explore their correlation and significance in the spatial dimension. On this basis, the analysis is further refined to each provincial-level administrative unit, examining the spatial correlation between university enrollment and per capita GDP by province and deeply revealing the geographical spatial interactions between the two variables.

Results

1. Static Analysis: The Impact of Higher Education on Per Capita GDP Efficiency

The data used in this study are based on statistical figures from the end of 2022, and thus, the analysis in this section is a static analysis. By importing the statistical data on university enrollment (input variable) and per capita GDP (output variable) from 41 cities in the Yangtze River Delta into the DEAP 2.1 analysis software, the static efficiency results for each prefecture-level city were calculated, as shown in Table 1.

Table 1 Static Efficiency Analysis of Higher Education's Impact on Per Capita GDP in the Yangtze River Delta Region

Item	E	SE	θ	SRC	Type	Item	TE	SE	θ	SRC	Type
Shanghai	0.15	0.338	0.051	1.076	DRS	Ma'anshan	0.262	0.913	0.239	0.695	IRS
Hangzhou	0.049	0.98	0.048	0.913	IRS	Wuhu	0.132	0.925	0.122	0.728	IRS
Ningbo	0.144	0.996	0.143	0.981	IRS	Xuancheng	1	0.798	0.798	0.46	IRS
Wenzhou	0.108	0.821	0.089	0.497	IRS	Tongling	0.363	0.852	0.31	0.555	IRS
Jiaxing	0.312	0.926	0.288	0.729	IRS	Chizhou	0.373	0.814	0.303	0.485	IRS
Huzhou	0.5	0.906	0.453	0.676	IRS	Anqing	0.248	0.69	0.171	0.398	IRS
Shaoxing	0.17	0.956	0.162	0.823	IRS	Huangshan	0.452	0.784	0.354	0.452	IRS
Jinhua	0.143	0.802	0.114	0.467	IRS	Nanjing	0.081	0.357	0.029	1.07	DRS
Quzhou	0.896	0.836	0.749	0.524	IRS	Wuxi	1	0.187	0.187	1.187	DRS
Zhoushan	1	1	1	1	—	Xuzhou	0.09	0.855	0.077	0.561	IRS
Taizhou	0.375	0.846	0.317	0.542	IRS	Changzhou	0.51	0.368	0.187	1.066	DRS
Lishui	0.362	0.756	0.273	0.436	IRS	Suzhou (in Province)	0.391	0.263	0.103	1.113	DRS
Hefei	0.032	0.934	0.03	0.753	IRS	Nantong	0.162	0.971	0.158	0.88	IRS
Huabei	0.322	0.689	0.222	0.397	IRS	Lianyungang	0.257	0.834	0.214	0.521	IRS
Bozhou	0.67	0.439	0.294	0.253	IRS	Huai'an	0.181	0.884	0.16	0.623	IRS
Suzhou (in Province)	0.381	0.435	0.165	0.251	IRS	Yancheng	0.238	0.888	0.212	0.632	IRS
Bengbu	0.2	0.63	0.126	0.363	IRS	Yangzhou	0.194	0.984	0.191	0.928	IRS
Fuyang	0.247	0.411	0.102	0.237	IRS	Zhenjiang	0.183	0.985	0.18	0.932	IRS
Huainan	0.165	0.527	0.087	0.304	IRS	Taizhou	0.313	0.963	0.302	0.849	IRS
Chuzhou	0.266	0.843	0.224	0.537	IRS	Suqian	0.514	0.818	0.421	0.493	IRS
Lu'an	0.272	0.474	0.129	0.273	IRS						

NOTE:

TE:Technical Efficiency

SE:Scale Efficiency

θ: Comprehensive Efficiency

SRC : Scale Return Coefficient

IRS: Increasing Returns to Scale

—: No scale return identified

DRS: Decreasing Returns to Scale

In Table 1, the product of technical efficiency (TE) and scale efficiency (SE) equals the overall efficiency (θ), which reflects the overall efficiency performance of the decision-making units (DMUs). In terms of scale returns, DRS indicates decreasing returns to scale, while IRS indicates increasing returns to scale. Table 1 presents the static results from the model, revealing the impact of higher education resource allocation on regional economic output from three dimensions: technical efficiency, scale efficiency, and returns to scale. These results provide a foundational basis for analyzing the efficiency disparities of higher education within the region.

According to the DEA analysis results in Table 1, cities with a technical efficiency (TE) of 1 are considered DEA efficient units (effective DMUs), such as Zhoushan, Wuxi, and Xuancheng. These cities have achieved optimal allocation of higher education resources and are able to fully utilize educational investments to maximize regional economic output. For example, Zhoushan's technical efficiency (TE = 1) and scale efficiency (SE = 1) both reach the efficiency frontier, indicating that its higher education resource allocation is perfect, with no restrictions from scale returns (SRC = 1). Similarly, Wuxi not only performs excellently in technical efficiency (TE = 1), but its scale returns coefficient (SRC = 1.187) reflects that further expansion of its educational resources would yield higher output. These efficient units provide valuable insights for optimizing educational resource allocation in other cities.

In contrast, DEA inefficient units (inefficient DMUs) such as Shanghai and Hefei exhibit significant issues with resource allocation efficiency. For example, Shanghai's technical efficiency is only 0.15, and its scale efficiency is 0.338, showing decreasing returns to scale (DRS, SRC = 1.076), indicating that its educational resource input has become excessive, diminishing the marginal output of resource utilization. Similarly, Hefei's technical efficiency (TE = 0.032) is at its lowest level, indicating extremely low efficiency in the use of higher education resources. However, its scale efficiency (SE = 0.934) is relatively high, suggesting that it could improve overall efficiency by reasonably expanding the scale of educational resource input.

2. Interprovincial Spatial Analysis Results

In the spatial analysis, this study uses the Queen contiguity weight and sets the order to 1 (Order 1) to construct the spatial weight matrix. This method is based on the shared boundary or vertex relationship between spatial units, assuming that two spatial units are adjacent if they share a common boundary segment or vertex. By setting the weight for the direct adjacency relationship among the four provincial-level administrative units in the Yangtze River Delta (Anhui, Jiangsu, Zhejiang, and Shanghai), the order 1 setting only considers the spatial correlation between adjacent units, excluding higher-order spatial interactions, which makes the spatial weight matrix more intuitive and concise. The research results are shown in Figure 1.

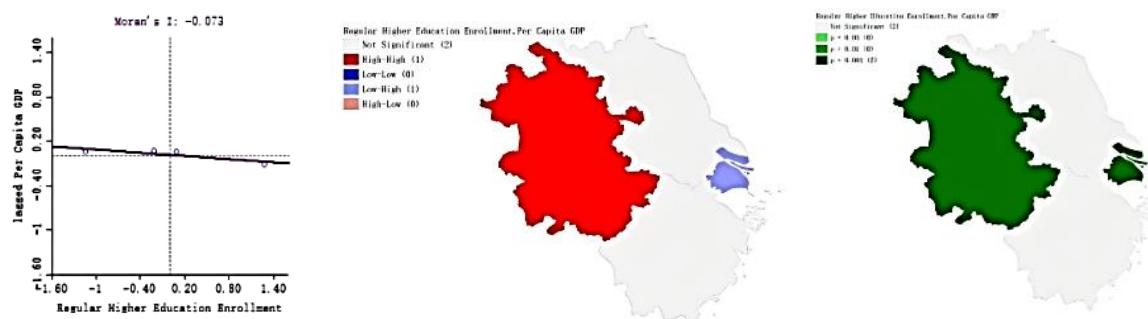


Figure 1 Interprovincial Spatial Analysis Results in the Yangtze River Delta Region

Figure 1's Moran's I map shows that the spatial correlation between the number of university students and per capita GDP in the Yangtze River Delta is weak, with a specific Moran's I value of -0.073, indicating a slight negative correlation. The trend line in the scatter plot is slightly downward sloping, further confirming the negative correlation between the two variables. However, the data points are widely dispersed, suggesting a weak overall spatial association. This indicates that the impact of the number of university students on regional economic development, specifically on per capita GDP, is not spatially balanced and the overall effect is weak.

In the BiLISA clustering view, some areas of Anhui Province are identified as high-high clusters (red areas), meaning both the number of university students and per capita GDP are high, with significant positive spatial correlation. In contrast, Shanghai is characterized as a low-high cluster (blue area), where the number of university students is relatively low, but the surrounding areas have higher per capita GDP, indicating significant spatial correlation between Shanghai and its neighboring high-value areas. Other regions do not exhibit clear spatial clustering features and are categorized as non-significant areas (gray areas).

In the BiLISA significance map, some areas in Anhui Province and Shanghai passed the statistical significance test at a significance level of $p \leq 0.001$ (dark green areas), indicating that the spatial correlation between the number of university students and per capita GDP is significant in these regions. Other areas in the Yangtze River Delta did not pass the significance test (gray areas), showing an uneven spatial correlation between regions. Therefore, from a spatial perspective, the relationship between the number of university students and per capita GDP shows significant regional differences, further revealing the presence of spatial dependence and spillover effects between regions.

To further explore the relationship between the number of university students and per capita GDP in the Yangtze River Delta, this study conducted an Ordinary Least Squares (OLS) regression analysis for verification. The specific form of the regression equation is as follows:

$$\text{Per Capita GDP} = 154157 - 0.0169028 \times \text{Regular Higher Education Enrollment}$$

Table 2 OLS Regression Results for the Number of University Students and Per Capita GDP in the Yangtze River Delta Region

Variable	Coefficient	Std.Error	t-Statistic	Probability
CONSTANT	154157	60949.3	2.52926	0.12717
Regular Higher Education Enrollment	-0.0169028	0.0371553	-0.454922	0.69377

From the specific regression results in Table 2, the effect of the number of university students on per capita GDP is not significant (coefficient = -0.0169, $p = 0.69377$), which is consistent with the previous Moran's I analysis results. Furthermore, the explanatory power of the model is weak, with an R^2 of 0.0937 and an adjusted R^2 of -0.3593. The F-statistic did not pass the significance test ($p = 0.6938$), indicating a poor overall model fit.

Further regression diagnostics show that there is no multicollinearity issue, with the multicollinearity condition number being 4.448286, which falls within a reasonable range. Based on the results of both the OLS regression and spatial autocorrelation analysis, it can be concluded that the relationship between the number of university students and per capita GDP is statistically weak and exhibits regional heterogeneity. This provides the necessary theoretical support and data foundation for subsequent in-depth spatial econometric model analysis.

2.1 Spatial Analysis Results for Anhui Province

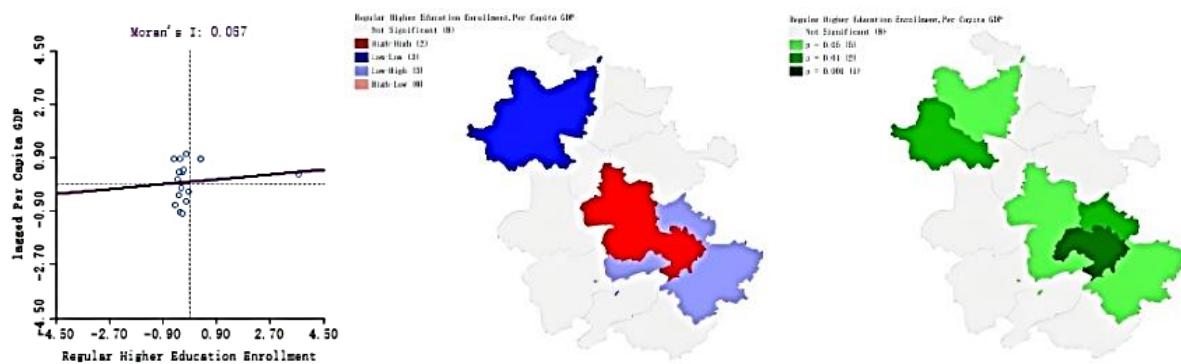


Figure 2 Spatial Analysis Results for Anhui Province's Enrollment and Per Capita GDP

The Moran's I index on the far left of Figure 2 is 0.087, indicating a weak positive spatial autocorrelation between the number of enrolled students in Anhui Province's higher education institutions and per capita GDP, though the overall correlation is not significant, and the spatial distribution appears relatively dispersed.

The middle section, which analyzes local spatial autocorrelation, reveals significant regional differences within Anhui Province:

The northwestern region (Fuyang, Bengbu, and Huabei cities) exhibits a low-low clustering phenomenon, indicating that these areas have both low enrollment numbers and low per capita GDP.

The central region (Hefei and Wuhu cities) shows a high-high clustering, reflecting these cities' relatively rich educational resources and high economic development levels.

The southern region (Tongling, Ma'anshan, and Xuancheng cities) presents a low-high clustering phenomenon, indicating that these areas have fewer enrolled students but higher per capita GDP.

The significance distribution map on the far right of Figure 2 shows that most regions in Anhui Province do not have statistically significant spatial autocorrelation, indicating that the spatial coupling relationship between the number of enrolled students and per capita GDP is not significant. Only Wuhu City in the southern part of the province demonstrates significant spatial autocorrelation. This suggests that, overall, Anhui Province has not yet formed a significant spatial agglomeration effect, but there are noticeable spatial disparities between local regions, reflecting the uneven spatial distribution of educational resources and economic development.

2.2 Spatial Analysis Results of Jiangsu Province

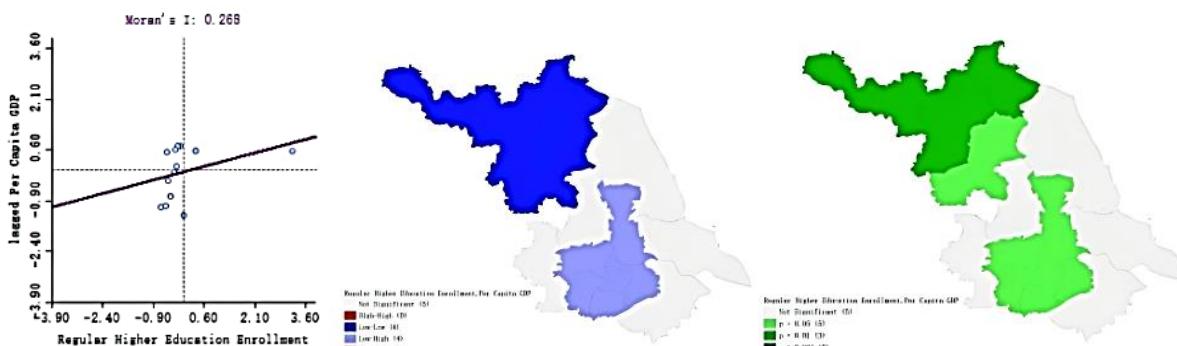


Figure 3 Spatial Analysis Results of Higher Education Enrolled Students and Per Capita GDP in Jiangsu Province

The leftmost Moran's I value is 0.268, indicating a weak but significant positive spatial autocorrelation between the number of enrolled students in higher education and per capita GDP in Jiangsu Province, with a certain clustering effect observed across regions. The middle local spatial autocorrelation analysis shows that the northern regions of Jiangsu Province (Xu Zhou, Lianyungang, Huai'an, and Suqian) exhibit a low-low cluster, meaning these areas have both lower numbers of enrolled students and lower per capita GDP. The southern regions (Zhenjiang, Changzhou, Wuxi) and the central region of Taizhou display a low-high cluster, indicating that these areas have higher per capita GDP but fewer enrolled students. Additionally, some regions do not show significant spatial clustering, reflecting spatial distribution differences.

The rightmost significance distribution map further reveals the spatial correlation characteristics of higher education enrolled students and per capita GDP in Jiangsu Province: The northern areas show significant spatial autocorrelation, while the southern and some central regions do not reach statistical significance. This indicates that while there is a clear spatial coupling between the number of enrolled students in higher education and per capita GDP in Jiangsu Province, a north-south difference exists. The northern regions, where educational resources and economic development are lagging, require increased investment in education resources to promote coordinated and balanced development of regional economy and higher education.

2.3 Zhejiang Province Spatial Analysis Results

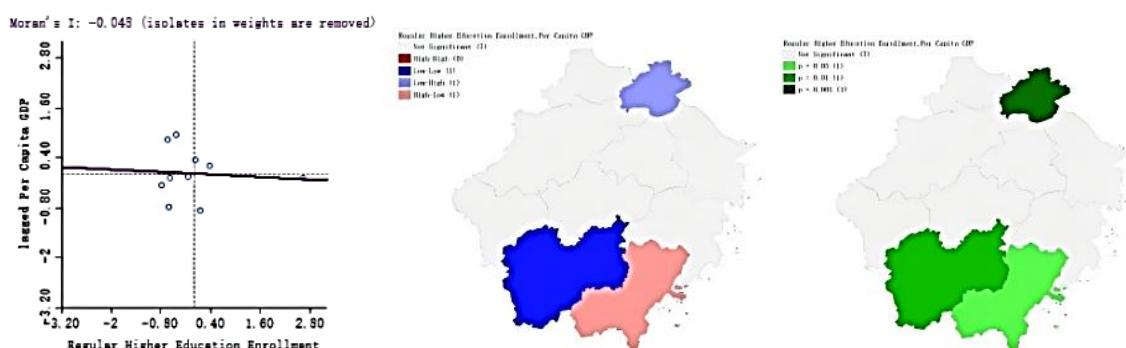


Figure 4 Spatial Analysis Results of Higher Education Enrolled Students and Per Capita GDP in Zhejiang Province

The leftmost Moran's I value is -0.048, indicating a weak negative spatial autocorrelation between the number of enrolled students in higher education and per capita GDP in Zhejiang Province, and overall, it is not significant. This suggests that the spatial distribution of enrolled students and per capita GDP is highly dispersed, with no apparent spatial clustering characteristics.

The middle local spatial autocorrelation analysis shows that the southern part of Zhejiang Province, particularly Wenzhou City, exhibits a high-low cluster, indicating that this area has a higher number of enrolled students but lower per capita GDP. The southwestern region, represented by Lishui City, displays a low-low cluster, reflecting that both enrolled students and per capita GDP are relatively low, suggesting spatial disadvantage clustering. The northern city of Jiaxing shows a low-high cluster, meaning it has fewer enrolled students but higher per capita GDP. In addition, most areas in the northern part of the province show no significant spatial autocorrelation, indicating that the spatial distribution of enrolled students and per capita GDP in these regions does not exhibit significant spatial correlation.

The rightmost significance distribution map further shows that the spatial autocorrelation in some southern areas is significant, while the majority of northern and central regions do not reach statistical significance. This indicates that the spatial correlation between the number of enrolled students and per capita GDP in Zhejiang Province is weak, with uneven regional distribution. Some areas exhibit low-level clustering. Overall, Zhejiang Province needs to optimize the allocation of higher education resources, improve educational investment and economic development in the southern and southwestern regions, to promote coordinated and balanced development of regional education and economy.

Discussions

1. Comparison of Theoretical Expectations and Actual Results

Traditional economic growth theories suggest that an increase in the number of enrolled students in higher education represents the accumulation of human capital, and as human capital is a crucial driver of economic growth, it should, in principle, have a significant positive correlation with regional GDP per capita (Lucas, 1988). However, the actual results of this study did not fully validate this expectation in the Yangtze River Delta region. According to the spatial analysis using Moran's I index, the overall region (with a value of -0.073) and Zhejiang Province (with a value of -0.048) showed a negative correlation, while Anhui Province (0.087) exhibited a weak positive correlation, though not significant. Jiangsu Province, although showing a certain degree of positive correlation (Moran's I = 0.268), still had a correlation strength lower than theoretical expectations. This phenomenon indicates that an increase in the number of enrolled students in higher education does not necessarily translate into a significant improvement in regional economic performance, reflecting potential issues in the efficiency of higher education resource utilization, the alignment of human capital with industry needs, and other factors, which warrant further investigation.

2. DEA Efficiency Analysis and the Current State of Higher Education Resource Utilization

Based on the results of the Data Envelopment Analysis (DEA) model, many cities show low technical efficiency (TE), scale efficiency (SE), and overall efficiency (θ), indicating that there are inefficiencies in the allocation and utilization of higher education resources. For example, Shanghai's technical efficiency is only 0.15, and its overall efficiency (θ) is also low, suggesting that the current resources are not being fully utilized and are unable to effectively drive economic growth. Moreover, an increase in the number of enrolled students does not necessarily lead to the accumulation of high-quality human capital, especially in cases where resource allocation is uneven and there are regional disparities in educational quality, making it difficult for higher education resources to reach their potential.

It is noteworthy that some cities exhibit characteristics of decreasing returns to scale (DRS), particularly in economically developed cities such as Shanghai, Nanjing, Suzhou, Wuxi, and Changzhou in Jiangsu Province. These areas suffer from over-expansion of higher education resources, which leads to a decline in resource utilization efficiency. The expansion of scale does not necessarily bring corresponding improvements in economic benefits; instead, it may lead to resource waste and inefficiency in educational output. Previous research has indicated that in some regions of China, higher education research activities are in a stage of decreasing returns to scale, with low research efficiency and significant disparities in research efficiency and resource utilization across regions (Rui Li, 2017). Therefore, enhancing resource allocation efficiency, improving educational quality, optimizing the layout of higher education resources, and promoting the coordination between higher education and regional economic development have become urgent issues that need to be addressed.

3. Regional Differences and the Balanced and Coordinated Development of Higher Education

The results of the DEA model and spatial analysis indicate that the distribution of higher education resources in the Yangtze River Delta region exhibits significant imbalance. Cities in northern Jiangsu, such as Suqian, Lianyungang, and Huai'an, northern Anhui, such as Bozhou and Suzhou, and southwestern Zhejiang, such as Lishui, have low overall efficiency (θ) and scale efficiency (SE). For example, Suqian has an overall efficiency of 0.421, Bozhou has 0.294, and Lishui has 0.273, all of which are far below efficient levels. Coupled with these areas exhibiting increasing returns to scale (IRS), it suggests that higher education resources have not yet reached an optimal configuration and that there is room for optimization and moderate expansion. Research indicates that there are significant differences in higher education resources between regions, and a clear "Matthew Effect" exists between the higher education system and the economic system (Huanliang Wang, 2022).

Against this backdrop, there should be increased investment in higher education resources in underdeveloped areas to address the inefficiencies in resource supply and utilization. Additionally, attention should be given to aligning higher education training with local economic needs, promoting the rational distribution of higher education resources across regions, narrowing regional economic disparities, and achieving coordinated development in the Yangtze River Delta region. Research has shown that improving the efficiency of education funding and coordinating the relationship between the level of economic development and the scale of higher education is crucial for promoting the development of higher education in underdeveloped areas.

Conclusion and suggestions

This study demonstrates that in the Yangtze River Delta (YRD), the expansion of higher education enrollment does not automatically translate into higher per capita GDP, and that significant disparities exist in the efficiency of resource allocation across cities. While Zhoushan, Wuxi, and Xuancheng exhibit optimal efficiency in utilizing educational resources, major urban centers such as Shanghai and Hefei reveal inefficiencies, reflecting problems of over-expansion, diminishing returns to scale, and the misalignment between educational outputs and local industrial needs. Spatial econometric analysis further indicates that the relationship between higher education resources and economic development is heterogeneous and not uniformly positive, with weak global spatial correlation and localized clusters of imbalance. These findings confirm that the quality, efficiency, and relevance of higher education matter more than mere enrollment growth, and that differentiated regional strategies are necessary to optimize educational investments.

From a policy perspective, the results suggest that greater emphasis should be placed on enhancing the efficiency of resource utilization, particularly in underdeveloped areas where investments have not yet achieved optimal outcomes. Coordinated allocation mechanisms across provinces should be strengthened to mitigate regional disparities and support the integration of the YRD. At the same time, improving the match between university training and labor market needs is crucial. Strengthening university–industry linkages can improve graduate employability, stimulate innovation, and promote industrial upgrading. Such measures would not only increase the economic returns of higher education but also enhance the role of universities as drivers of social and technological progress.

This research also generates new knowledge with implications for society and communities. It challenges the conventional assumption that higher education expansion

inherently drives economic growth, showing instead that efficiency and alignment are the determining factors. The study highlights the importance of equitable access to high-quality education in reducing regional inequality and promoting balanced development. By clarifying the inefficiencies in current resource distribution, it provides evidence to guide reforms that can help local communities benefit more directly from educational investments. Aligning higher education outputs with industry needs will strengthen the competitiveness of the labor force, foster innovation capacity, and generate broader social benefits, from employment opportunities to community development and social mobility.

Future research should build upon these findings by adopting approaches that capture both temporal and qualitative dimensions. Dynamic panel data analysis could be used to reveal longer-term causal effects of higher education on economic outcomes. Beyond enrollment figures, micro-level and qualitative data such as graduate employment, innovation capacity, and the social relevance of higher education outputs would provide a more comprehensive picture of educational effectiveness. Further investigation into policy and governance structures is also essential to explain disparities in resource allocation and to propose structural reforms that align higher education with regional development strategies. Additionally, spatial research should be broadened to account for cross-regional linkages within the YRD, while innovative modeling could incorporate Shanghai's unique administrative position into spatial frameworks. Such extensions will not only refine the measurement of higher education efficiency but also deepen understanding of its broader societal and economic impacts.

New knowledge and the effects on society and communities

The data in this study comes from the 2022 year-end statistics in the statistical yearbooks of the three provinces and one city in the Yangtze River Delta, and is static in nature. The results derived from the DEA model only reflect the static characteristics of higher education resource allocation efficiency at a specific point in time, without revealing the dynamic development trend. In terms of spatial analysis, the study is based on province-level administrative units for overall spatial analysis, while discussions at the city level are conducted province by province. This approach is limited by the administrative structure of Shanghai – as a provincial-level unit, Shanghai cannot be analyzed in spatial relation with the other 40 cities in the Yangtze River Delta as a whole, thus limiting the exploration of its spatial spillover effects on surrounding cities. This is a limitation of the present study, and future research could explore the changing trends in higher education resource allocation efficiency from a dynamic perspective by incorporating data over a longer time series, while also strengthening the spatial impact analysis of Shanghai and its surrounding cities within regional integration to address the gaps in the current research.

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Exploring Coaching Strategies, Techniques and Team Dynamics towards a Winning Volleyball Team

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Abstract

This study explores effective coaching strategies, techniques, and team dynamics essential for achieving success in volleyball. Conducted with all 32 student-athletes from a private university in Batangas, Philippines, this research utilizes qualitative exploratory methods and thematic analysis to uncover insights into coaching effectiveness and team cohesion. The total number of participants reflects the entire population of student-athletes at the university, ensuring comprehensive representation. Key findings highlight the significance of personalized training programs tailored to individual needs, detailed performance feedback, innovative skill development drills, and strategic game simulations. Effective team dynamics, including strong communication, mutual trust, and resilience, are crucial for maintaining high performance and navigating competitive challenges. The study also identifies challenges in coaching, such as conflict resolution and role balancing. Recommendations include implementing tailored training plans, providing regular feedback, using innovative techniques, and fostering a supportive team environment. Future research may investigate the long-term effects of personalized training on player development across various competition levels.

Keywords: Coaching strategies, Coaching techniques, Team dynamics, Volleyball

Introduction

Volleyball, a sport renowned for its dynamic play and strategic complexity, demands more than just physical ability. Effective coaching and cohesive team dynamics are crucial elements that influence a team's success. As teams compete at various levels, from local tournaments to national championships, the impact of coaching strategies and team cohesion becomes increasingly apparent. Fatimah et al. (2024) emphasize that effective coaching profoundly affects player development and overall team success, while robust team dynamics create a collaborative environment that enhances performance.

In competitive sports, coaching extends beyond merely refining technical skills; it encompasses nurturing players' growth through personalized attention and strategic guidance (Chen, 2024). Tailored training programs that address individual strengths and weaknesses have proven to significantly boost players' abilities and contribute to team success. Moreover, innovative coaching techniques such as targeted skill drills and strategic game simulations prepare athletes for real-match scenarios, enhancing their adaptability and strategic thinking.

Equally significant are the dynamics within the team. Torres (2024) underscores that successful volleyball teams often demonstrate strong communication, trust, and mutual support among members, which are essential for maintaining high morale and effective performance. Team cohesion, marked by unity and a shared purpose, plays a crucial role in achieving success on the court. The ability to manage pressure and adapt to changing situations further highlights the importance of resilience in competitive sports.

Despite their importance, both coaching and team dynamics present challenges. Coaches must adeptly handle issues related to conflict resolution, role balancing, and continuous adjustments to team strategies. When left unaddressed, these issues can hinder player development and disrupt team harmony. Hence, thoughtful and proactive management of these dynamics is vital to maintain focus and unity.

The necessity of conducting this research stems from the increasing competitiveness of collegiate volleyball and the rising expectations placed upon coaches and athletes. In the context of a private university in Batangas, understanding the specific coaching strategies and team dynamics that contribute to performance can provide actionable insights for sports program development. While numerous studies have examined coaching or cohesion individually, limited research has explored the interrelationship between these two factors from the perspective of student-athletes in the local setting.

This study is therefore timely and relevant. By analyzing the lived experiences of all 32 student-athletes the entire population of the university's volleyball teams this research provides a holistic and context-specific understanding of what drives success in collegiate volleyball. The findings will not only inform better coaching practices and foster stronger team dynamics but also contribute to the academic literature on sports psychology, leadership, and team management in the Philippine context. This research offers practical implications for coaches, athletic program administrators, and educators, aiming to enhance athlete development, promote resilience, and improve team performance through evidence-based strategies. Its significance lies in its potential to guide the continuous improvement of coaching practices and the cultivation of unified, high-performing teams.

Objectives of the Study

This study aims to explore coaching strategies, techniques, and team dynamics in volleyball success as revealed by student-athletes. The goal is to formulate actionable recommendations based on the analysis of these factors to enhance overall team performance and success.

Specifically, this aims to:

1. Identify effective volleyball coaching strategies and techniques
2. Explore the role of team dynamics in volleyball success
3. Analyze the challenges in coaching and team dynamics
4. Formulate actionable suggestions to build a winning volleyball team

Methodology

Research Design

This study employed a qualitative exploratory research design using thematic analysis to investigate the coaching strategies, techniques, and team dynamics that contribute to a successful volleyball team. The exploratory nature of this research aims to gain in-depth insights into the experiences of student-athletes, focusing on how coaching strategies and team dynamics influence their performance and overall team success.

Research Setting and Participants

The study was conducted within the volleyball program of a private university in Batangas, Philippines. The participants included 32 student-athletes, comprising 16 men and 16 women, who have been actively involved in the university's volleyball team. These athletes have competed in various local, regional, and national tournaments for two academic years, and their extensive experience in competitive play, along with their history of success, makes them ideal participants for this study.

Data Collection Procedure

Data were collected through Focus Group Discussions (FGDs), with permission obtained from the university and the sports department. Separate FGDs were held for the men's and women's volleyball teams to capture gender-specific experiences and perspectives. The discussions were conducted in a private, comfortable setting within the university to encourage open and candid dialogue.

A semi-structured discussion guide was utilized, featuring questions designed to explore various aspects of coaching and team dynamics. Key questions included: What specific coaching strategies have been most effective in improving individual performance? Can you describe particular techniques used by your coach that impact the team's success? How do coaches tailor their techniques for different skill levels within the team? Are there specific drills or exercises that have been instrumental in your development? How do team dynamics contribute to achieving success in volleyball, and can you provide examples of how teamwork and communication have influenced performance? Participants were also asked about challenges faced in coaching and team dynamics, and how these challenges have been addressed or could be improved. The FGDs were audio-recorded with participants' consent, and additional notes were taken to capture observations and non-verbal cues. These recordings and notes served as the primary data for thematic analysis.

As both the coach and the researcher, there is a potential for bias in the responses collected. Recognizing this, steps were taken to mitigate any influence of my dual role on the study's outcomes. Confidentiality and anonymity were assured to the participants to promote

honest feedback. Furthermore, efforts were made to minimize my influence on the responses, including the use of an independent facilitator to conduct the FGDs and ensure a neutral environment for data collection.

Data Analysis

The data collected from the Focus Group Discussions (FGDs) were analyzed using thematic analysis (Schreier, 2012) to identify and interpret patterns related to coaching strategies, techniques, and team dynamics. The process began with transcribing the FGDs verbatim, ensuring an accurate representation of participants' responses, and reviewing facilitator notes to capture additional context. Initial coding was performed by examining the transcripts line-by-line to generate codes that represented significant concepts and ideas related to the research questions. These codes were then grouped into broader themes based on their similarities and relationships.

The development of themes was an iterative process, involving constant comparison and refinement to ensure they accurately reflected the data. Preliminary themes were reviewed and refined through multiple iterations, re-examining the data to ensure comprehensiveness and relevance. The final themes were validated against the original transcripts to confirm their accuracy.

To ensure the accuracy and clarity of the data for international readers, the researcher sought the assistance of a grammarian to translate the responses from the original language to English. This step was crucial for presenting the findings to a broader audience. The translated responses were reviewed and approved by the athletes to ensure that the translations accurately reflected their intended meanings.

The analysis culminated in organizing and summarizing the themes in relation to the study's objectives, highlighting key findings that provide insights into effective coaching strategies, techniques, and team dynamics. This approach allowed for a detailed narrative on the factors contributing to volleyball success, aiding the researcher in formulating actionable recommendations to enhance team performance.

Ethical Considerations

In this study, informed consent was obtained from all participants before conducting the Focus Group Discussions (FGDs), ensuring they understood the research purpose and their right to withdraw at any time. Confidentiality was strictly maintained by anonymizing participants and securely storing audio recordings and transcripts. The research adhered to ethical guidelines set by the university's research ethics board. Participants were assured that their responses would be used exclusively for research purposes and would not affect their status within the university or the team. Throughout the data collection and analysis phases, ethical practices were upheld to respect participants' rights and ensure the integrity of the research.

Results

The succeeding tables present a comprehensive analysis of the findings from the Focus Group Discussions, highlighting key themes related to effective coaching strategies, the role of team dynamics, and challenges encountered in coaching and team interactions.

I. Identified Effective Volleyball Coaching Strategies and Techniques

Table 1 presents the effective volleyball coaching strategies and techniques identified in the study. It details themes and subthemes related to personalized training, performance feedback, skill drills, and game simulations, showcasing how these strategies enhance team performance.

Table 1 Identified Effective Volleyball Coaching Strategies and Techniques

Themes	Subthemes	Exemplar Texts
Effective Coaching Strategies	Personalized Training Programs	<p>Our coach creates specific training plans tailored to each player's strengths and weaknesses. [p20]</p> <p>I really appreciate how the coach adjusts the drills to fit my specific needs. [p3]</p> <p>The individualized attention during practice helps me focus on my areas for improvement. [p14]</p>
	Detailed Performance Feedback	<p>We receive regular, detailed feedback on our performance, which helps us improve quickly. [p23]</p> <p>The coach's feedback after each match is always thorough and actionable. [p10]</p> <p>Knowing exactly what to work on based on the coach's detailed observations has been crucial for my development. [p7]</p>
Innovative Techniques	Skill Development Drills	<p>The skill drills, like the targeted serving practice, have significantly enhanced our technique. [p1]</p> <p>Our coach introduced new drills that have really improved our ball control. [p18]</p> <p>Specific drills tailored to individual skills have been a game-changer for us. [p4]</p>
	Strategic Game Simulations	<p>Simulating game scenarios during practice helps us prepare better for real matches. [p23]</p> <p>Practicing with game-like situations makes a huge difference when we face actual opponents. [p13]</p> <p>The coach's use of game simulations in training has made us more adaptable and strategic during matches. [p5]</p>

Legend: p1-p32 -participants 1-32

As reflected in the table, personalized training programs emerged as a significant factor in player development. Athletes particularly valued the customized training plans that addressed their individual strengths and weaknesses. Consequently, this tailored approach allows for targeted improvement, enabling players to focus on specific areas and enhance their overall performance. Therefore, the effectiveness of such individualized attention underscores its importance in optimizing player growth.

Moreover, detailed performance feedback is another crucial element. Athletes appreciated the regular and thorough feedback provided by the coach, which offers actionable insights after each match. In turn, this continuous feedback helps players understand their performance, identify areas for improvement, and make necessary adjustments. Thus, the emphasis on detailed observations reveals the critical role of constructive criticism in fostering ongoing development.

Furthermore, innovative skill development drills have also proven to be effective. The introduction of targeted drills, such as specific serving practices, has significantly enhanced players' techniques and ball control. This implies that incorporating specialized drills into training programs can effectively address individual skill areas and contribute to overall team improvement.

Additionally, strategic game simulations have been highlighted as a valuable training technique. Practicing game-like scenarios helps athletes prepare for real match situations, improving their adaptability and strategic thinking. As a result, this method allows players to handle game pressures and adjust strategies effectively, which is crucial for competitive performance.

In summary, the strategies and techniques identified personalized training programs, detailed performance feedback, innovative skill development drills, and strategic game simulations demonstrate a comprehensive approach to enhancing volleyball performance. Collectively, these methods support player development and contribute to team success.

II. Role of Team Dynamics in Volleyball Success

Table 2 illustrates the critical role of team dynamics in achieving volleyball success. The table emphasizes the importance of effective communication, trust and support, team cohesion, adaptability, and the ability to handle pressure in fostering a successful and cohesive team environment.

Table 2 Role of Team Dynamics in Volleyball Success

Themes	Subthemes	Exemplar Texts
Team Collaboration	Effective Communication	Good communication on the court helps us anticipate each other's moves and coordinate better. [p2] We constantly talk to each other during games, which keeps everyone on the same page. [p9] Clear and open communication has been crucial for our success in tight matches. [p10]
Trust and Support		Trusting each other and having each other's backs makes a huge difference in our performance. [p20] When we support each other, even after mistakes, it keeps our morale high. [p29]
Team Cohesion		The trust we have as a team helps us recover quickly from setbacks during games. [p32] Our strong sense of unity helps us stay focused and work together towards our goals. [p19] Team cohesion is critical; we support each other both on and off the court. [p23]
Team Resilience	Adaptability and Flexibility	Being able to adapt to different game situations quickly is crucial for our success. [p4] We adjust our strategies based on the opponents and game flow, which helps us stay competitive. [p12]
Handling Pressure		Staying calm and focused under pressure is key to performing well in high-stakes matches. [p22] We have learned to manage stress and support each other through challenging moments. [p11]

Legend: p1-p32 -participants 1-32

Effective communication emerges as a crucial factor. Athletes consistently reported that good communication on the court enhances their ability to anticipate each other's moves and coordinate actions. Furthermore, constant dialogue during games helps maintain alignment and effectiveness, which is particularly vital during close matches. Thus, the importance of clear and open communication in fostering synchronized and successful team performance is evident.

In addition, the role of trust and support within the team cannot be understated. Players noted that mutual trust and support significantly impact their performance. Specifically, the ability to back each other up and maintain morale after mistakes contributes to quick recovery and overall team success. Consequently, fostering a supportive environment is critical for sustaining high performance levels.

Moreover, team cohesion is highlighted as another essential factor. Athletes emphasized that a strong sense of unity helps them stay focused and work collaboratively

towards shared goals. To illustrate, supporting each other both on and off the court strengthens team cohesion, which is crucial for achieving collective success. Team resilience reveals the importance of adaptability and pressure management. Athletes described how the ability to adjust strategies according to game situations is vital for competitiveness. Additionally, staying calm under pressure and managing stress effectively are crucial for high-stakes matches. Therefore, adaptability and resilience are key to navigating the challenges of competitive play.

III. Challenges in Coaching and Team Dynamics

Table 3 outlines the key challenges encountered in coaching and team dynamics, focusing on team interaction issues and integration and adaptation challenges. It details themes such as conflict resolution, role balancing, cohesion building, and adaptability to changes.

Table 3 Challenges in Coaching and Team Dynamics

Themes	Subthemes	Exemplar Texts
Team Interaction Issues	Conflict Resolution	Addressing conflicts swiftly is crucial to maintaining focus and avoiding disruptions during matches. [p4]
	Balancing Roles	Handling disagreements constructively helps keep the team united and focused. [p32]
Integration and Adaptation Challenges	Cohesion Building	Ensuring a balance in team roles is essential for effective contributions from all members. [p24]
	Adaptability to Changes	Aligning individual strengths with team needs has significantly enhanced our overall performance. [p17]
	Cohesion Building	Building a strong sense of team cohesion requires ongoing effort and activities. [p5]
	Adaptability to Changes	Adapting to changes in team dynamics or strategy can be challenging but necessary. [p19]
		Flexibility in roles and strategies helps us adjust to unexpected situations effectively. [p21]

Legend: p1-p32 -participants 1-32

Team Interaction Issues highlight critical aspects of managing team relationships. Effective conflict resolution is essential for maintaining team focus and cohesion, emphasizing the need for swift and constructive handling of disagreements to prevent disruptions and uphold team unity. Balancing roles within the team is also crucial; ensuring that each member's strengths align with team needs enhances overall performance and supports effective contributions from all members, which is vital for team success.

Integration and Adaptation Challenges underscore the ongoing efforts required to build and maintain team cohesion. Developing a strong sense of unity demands continuous activities and shared experiences to reinforce team bonds. Additionally, adaptability to changes in team dynamics or strategies is necessary for navigating unforeseen circumstances. Flexibility in roles and strategies enables the team to adjust effectively, which is crucial for overcoming challenges and sustaining competitive performance.

Discussions

The findings from this study provide valuable insights into effective volleyball coaching strategies, the critical role of team dynamics, and the challenges faced in coaching and team interactions. The results highlight several key themes, including the importance of personalized training, effective communication, team cohesion, and adaptability, as well as the challenges related to conflict resolution and role balancing.

The study's results underscore the significance of personalized training programs. Athletes valued training plans tailored to their specific strengths and weaknesses, which facilitated targeted improvements and enhanced overall performance. This aligns with research on individualized coaching, which suggests that customized training approaches can significantly impact player development by addressing unique needs and fostering growth (Childs, 2024). The effectiveness of detailed performance feedback, as revealed in the study, further supports the notion that regular, actionable insights are crucial for continuous improvement. This feedback mechanism helps players understand their performance and make necessary adjustments, a process that is vital for skill development and competitive success (Khatkar & Chaudhary, 2023).

Innovative techniques such as skill development drills and strategic game simulations emerged as pivotal in enhancing players' techniques and adaptability. Targeted drills improved specific skills like serving and ball control, reflecting the importance of focused practice in skill acquisition (Yevtushenko, et al., 2023). Game simulations, on the other hand, prepared players for real match scenarios, which is crucial for adapting strategies and handling game pressures. This approach is consistent with studies suggesting that practice in game-like conditions enhances performance by improving tactical understanding and adaptability (Endo et al., 2023).

Moreover, effective communication, trust, and support within the team were identified as critical for achieving success. The results demonstrate that good communication helps players anticipate each other's moves and coordinate effectively, which is essential for team cohesion and performance (Low et al., 2021). Trust and mutual support also play a significant role in maintaining high morale and quick recovery from setbacks, reflecting the importance of psychological safety and team morale in sports (Kumbar & Patil, 2024). Additionally, team cohesion emerged as a key factor in maintaining focus and working collaboratively towards goals. The emphasis on unity both on and off the court highlights the integral role of strong interpersonal relationships in fostering a supportive and successful team environment (Qi & Villanueva, 2024).

In addition, the study also highlighted team resilience, particularly in terms of adaptability and handling pressure. The ability to adjust strategies based on game situations and stay calm under pressure is crucial for competitive performance. This finding aligns with research on psychological resilience in sports, which emphasizes the need for flexibility and stress management in achieving success (López-Gajardo et al., 2022).

The challenges identified, including conflict resolution, balancing roles, and adapting to changes, underscore the complexities of managing team dynamics. Effective conflict resolution is essential for maintaining team focus and unity, preventing disruptions that could affect performance (Leis et al., 2023). Balancing roles within the team ensures that all members contribute effectively, which is vital for maximizing team potential and performance (Jaiyeoba et al., 2023). Integration and adaptation challenges further reveal that building team cohesion requires ongoing effort and activities to foster unity. This involves creating opportunities for team bonding and addressing issues related to changes in team dynamics or strategies. As mentioned by Efek & Eryigit (2022), flexibility in roles and strategies helps teams navigate

unexpected situations, which is crucial for maintaining competitive performance and overcoming challenges.

In sum, the study highlights the critical role of personalized training programs and detailed performance feedback in enhancing volleyball player development and performance. Incorporating targeted skill drills and game simulations is crucial for improving technical abilities and adaptability. Effective communication, trust, and team cohesion are essential for fostering a successful team environment. Developing resilience, including adaptability and stress management, is vital for navigating competitive pressures. Addressing challenges such as conflict resolution and role balancing is necessary for optimizing team dynamics. Thus, a comprehensive coaching approach that integrates these elements can significantly boost team performance and cohesion.

Conclusion and suggestions

This study highlights the significance of a comprehensive approach to volleyball coaching that integrates personalized training, detailed performance feedback, and innovative techniques. Personalized training programs, tailored to individual strengths and weaknesses, are essential for enhancing player development and performance. Detailed feedback, provided regularly and thoughtfully, enables players to understand and address their specific areas for improvement, fostering continuous growth. The use of skill development drills and strategic game simulations proves crucial for refining technical skills and preparing players for real-match scenarios, thereby enhancing adaptability and strategic thinking.

Effective team dynamics, marked by strong communication, mutual trust, and cohesion, are vital for achieving success. Building and maintaining team cohesion through activities that strengthen unity and support is essential for high morale and performance. Furthermore, team resilience, including adaptability and pressure management, is critical for navigating competitive challenges and maintaining consistent performance levels. Addressing challenges such as conflict resolution and role balancing is also necessary for optimizing team interactions and ensuring effective contributions from all members.

To enhance volleyball coaching and team success, coaches may implement personalized training plans that cater to each player's specific needs. Regular and detailed performance feedback should be provided to facilitate ongoing improvement. Incorporating innovative training techniques, such as skill drills and game simulations, will help players develop their technical abilities and strategic understanding. Promoting effective communication within the team will improve coordination and effectiveness, while fostering team cohesion and mutual support will sustain high performance. Additionally, developing resilience through adaptability and stress management training is crucial for handling competitive pressures. Finally, addressing conflict resolution and role balancing will help maintain team focus and unity. For future research, it is recommended to explore the long-term effects of personalized training programs on player development across different levels of competition.

New knowledge and the effects on society and communities

This study contributes new knowledge by offering a comprehensive qualitative exploration of coaching effectiveness and team cohesion from the perspectives of student-athletes in a private university in Batangas, Philippines. It presents a novel approach by examining not only coaching strategies but also the interpersonal dynamics within the team, thus providing a holistic view of factors influencing athletic performance. What sets this study apart is its emphasis on personalized training programs, detailed performance feedback, and innovative techniques that cater to the individual needs of each player. In doing so, it highlights how tailored coaching can significantly enhance both individual development and overall team success. Moreover, the study addresses less frequently discussed challenges in team sports such as conflict resolution, role clarity, and resilience-building, offering practical strategies for managing these issues within a collegiate sports environment.

Beyond academic contribution, the study has meaningful implications for society and local communities. By encouraging more effective coaching practices, it has the potential to uplift the quality of sports programs in educational institutions and local sports organizations. Improved team dynamics can foster environments that promote empathy, collaboration, and mutual respect among athletes, which are essential qualities not only in sports but also in everyday social interactions. These values, when cultivated through team sports, can contribute to the development of responsible and resilient individuals. Furthermore, the lessons drawn from this research are applicable to other sports and team-based initiatives, making the findings valuable for a wide range of settings. This research promotes a culture of performance excellence and collaboration that benefits the broader community by nurturing youth who are adaptable, disciplined, and committed to shared goals.

Based on the findings of this study, several practical recommendations can be offered to key stakeholders. Coaches and trainers are encouraged to adopt individualized training methods and provide consistent, constructive feedback to support players' growth. They should also prioritize fostering trust, open communication, and mutual respect among team members through regular team-building exercises and clear role definition. When conflicts or misunderstandings arise, strategic interventions should be implemented promptly to maintain a positive team atmosphere. For sports program coordinators and school administrators, investing in professional development for coaches particularly in areas like team psychology, adaptive leadership, and communication is highly recommended. Institutional policies should also support collaborative and inclusive coaching practices that reinforce teamwork and resilience.

Student-athletes, on the other hand, are encouraged to engage actively in self-reflection, peer collaboration, and constructive feedback processes to enhance their individual and team development. Local government units and community sports organizations can use this study as a basis to design youth programs that mirror these best practices, promoting both athletic excellence and personal development. Lastly, future researchers may build upon this study by conducting comparative investigations across different sports or institutions, or by exploring the long-term effects of various coaching styles on athlete performance and retention. These practical suggestions aim to bridge the gap between research and real-world application, ensuring that the insights from this study can drive meaningful improvements in sports and education.

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Fostering Cross-Cultural Understanding Through Southeast Asian Multicultural Literature: Insights from Preservice ESL Teachers' Learning Experiences

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Abstract

This study investigated the relationship between culturally diverse learning experiences and cross-cultural understanding in the teaching of Southeast Asian multicultural literature among preservice teachers of English as a Second Language (ESL). Guided by the framework of culturally responsive teaching, it examined how specific instructional activities such as creative dramatics, visual arts projects, graphic organizers, writing workshops, and research tasks relate to the critical, empathic, and conceptual dimensions of cross-cultural understanding. The study employed a quantitative descriptive-correlational design and gathered data from 107 preservice ESL teachers enrolled in a state university in the Southern Tagalog region of the Philippines through a validated researcher-made questionnaire. The results indicated that all five learning activities were perceived as highly relevant, with research tasks and creative dramatics receiving the highest mean scores. Cross-cultural understanding was also found to be highly manifested, with empathic and conceptual understanding registering higher levels than critical understanding. Statistical analysis revealed a significant positive relationship between the relevance of culturally diverse learning experiences and the level of cross-cultural understanding. The findings affirm the pedagogical value of integrating culturally responsive strategies in literature instruction to promote intercultural awareness and appreciation. These results suggest that ESL teacher education programs should strengthen the integration of multicultural literature in the curriculum to enhance both literary competence and intercultural competence. Incorporating such approaches in teacher training may better prepare future educators to design inclusive, culturally sensitive learning environments, thereby contributing to the broader goals of equity, respect for diversity, and global citizenship in education.

Keywords: Cross-cultural understanding, Culturally responsive teaching, Learning experiences, Preservice ESL teachers, Southeast Asian multicultural literature

Introduction

As society progresses in the 21st century, rapid changes continuously shape the world, exposing students to diverse cultural backgrounds, races, nationalities, and lifestyles. In response, multicultural education has emerged as a school reform approach and a movement aimed at promoting equity, social justice, and democracy. Multicultural education seeks to redesign traditional educational practices, fostering the development of socially responsible and culturally aware individuals. Its primary goal is to ensure that all students have equal educational opportunities, regardless of their cultural background (Karácsony et al., 2022).

The need for multicultural education is particularly urgent due to the increasingly diverse student populations in schools. However, despite this diversity, school systems often lack sufficient representation of multiculturalism. These deficiencies arise from educators' inability to effectively integrate culturally relevant content and practices into their teaching (Banks & McGee, 2020). To address this gap, the use of multicultural literature—depicting a variety of cultures, values, and perspectives—can help students appreciate their own cultural identity while gaining insights into other societies. Literature serves not only as a medium for artistic appreciation but also as a tool for advancing ideological understanding (Zhang & Jin, 2025).

Multicultural literature, which represents ethnic, urban, and diverse multicultural perspectives, plays a critical role in shaping students' conceptualization of identities and cultures (Ezell & Daly, 2023). A lack of such literature in classroom activities may perpetuate social issues like racism, while the inclusion of diverse literary works can foster pride in students' cultural heritage and affirm their sense of belonging within their communities (Rushanthan & Rushanthan, 2023). In recent years, there has been a surge in literature that dispels prejudices, promotes inclusivity, and amplifies marginalized voices in the literary landscape.

Incorporating multicultural literature into the curriculum is a crucial step toward recognizing cultural differences, fostering self-worth, and achieving educational equity (Gilmetdinova, 2020). This type of literature offers authentic cultural content and narrates the experiences of minorities, addressing themes of freedom, socio-cultural experiences, and racial identity (Baumert et al., 2023). Particularly in the ASEAN region, fostering awareness of the diverse cultures and shared values among Southeast Asian nations is essential for promoting a collective ASEAN identity and reinforcing the region's unity in diversity (Bañez & Callo, 2022).

Literary texts, as cultural artifacts, offer students the opportunity to respond to, interpret, and evaluate works by synthesizing knowledge from sociology, politics, and history. Analyzing ASEAN literature, in particular, helps students develop a deeper understanding of the historical and cultural bonds that unite the region, strengthening their sense of regional identity. Such texts allow students to relate to their peers from other ASEAN countries, enhancing their sense of social connectedness despite cultural differences.

Cultural diversity, a multifaceted concept, refers to the coexistence of diverse human knowledge, beliefs, customs, and practices, encompassing race, gender, religion, language, and more (Yousef, 2024). It also involves understanding how individuals navigate and respond to these differences. Promoting inclusiveness in schools and raising awareness of intercultural education benefits all students by fostering acceptance and supporting their success in an increasingly diverse world. Teachers play a crucial role in this process, as their understanding and appreciation of cultural diversity can significantly impact student outcomes (Muega, 2016).

In recognition of these challenges, this study examined the preservice English as a Second Language (ESL) teachers' cross-cultural understanding of Southeast Asian

Multicultural Literature. As future literature educators, these ESL preservice teachers have a pivotal role in enhancing students' awareness of both their own and other cultures by providing a foundation for more inclusive and culturally sensitive learning experiences. As students gain knowledge of the diverse societies that shape their world, they will also learn to appreciate cultural differences without judgment, fostering a more accepting and inclusive mindset. This is particularly important in combating prejudices, racism, and cultural appropriation, which are pervasive in contemporary society.

Through cross-cultural understanding, literature can serve as a powerful catalyst for change, promoting unity and mutual respect. This study is also expected to guide future literature teachers in their efforts to teach cross-cultural understanding effectively. The researchers believe that a comprehensive understanding of Southeast Asian Multicultural Literature will not only deepen students' appreciation of cultural diversity but also contribute to their holistic intellectual and emotional development, transforming them into lifelong learners capable of navigating a multicultural world.

This study centers on Southeast Asian multicultural literature within the framework of preservice ESL teacher education in the Philippines. While multicultural education has been extensively examined, there remains a limited focus on integrating Southeast Asian literary texts in teacher education programs. This research addresses this gap by foregrounding the regional and cultural contexts that are most relevant to preservice teachers in the Philippine setting. It acknowledges the need to prepare future educators who are capable of responding effectively to the cultural diversity present in their classrooms. The study aims to develop preservice teachers' critical and empathetic cross-cultural understanding through engagement with local and regional narratives. This focus seeks to contribute to the enhancement of multicultural pedagogy and the cultivation of culturally responsive teaching practices in language and literature education.

Objectives

This study focused on the learning experiences and cross-cultural understanding of Southeast Asian multicultural literature among preservice ESL teachers enrolled at a state university in the Southern Tagalog region during the academic year 2022-2023. The study aimed to provide useful information on how different learning activities help preservice teachers appreciate and understand cultural diversity through literature.

Specifically, this study aimed to:

1. Determine how relevant preservice ESL teachers find various cultural diversity-based learning activities, such as creative dramatics, visual arts projects, graphic organizers, writing workshops, and research, when studying Southeast Asian multicultural literature.
2. Measure the levels of cross-cultural understanding of Southeast Asian multicultural literature among preservice teachers, focusing on three aspects:
 - 2.1. Critical understanding, which refers to the ability to analyze and evaluate cultural portrayals;
 - 2.2. Conceptual understanding, which involves the acceptance and appreciation of cultural diversity and social justice;
 - 2.3. Empathic understanding, which is the emotional connection to cultural experiences found in the literature.
3. Identify the relationship between how relevant preservice teachers find the cultural diversity learning activities and their levels of cross-cultural understanding.

This study examines how culturally relevant learning experiences influence preservice teachers' development of cross-cultural understanding. The results are expected to offer valuable insights for teacher education programs in designing effective instructional strategies. Such strategies can enhance the ability of future ESL teachers to engage students with diverse

cultural backgrounds and to foster inclusive classrooms. This study aims to contribute to the improvement of multicultural education by highlighting the role of Southeast Asian multicultural literature in preparing culturally competent educators who can respond sensitively to the needs of a diverse student population.

Methodology

Research Design

The primary aim of this research was to examine preservice teachers' learning experiences and cross-cultural understanding of Southeast Asian multicultural literature. A descriptive-correlational research design was employed, as it involves collecting and analyzing data to gain insights into current conditions and the behavior or functioning of individuals or groups at the time of the study. Additionally, this design allows for the use of statistical methods to determine the strength of relationships between two or more variables. According to Hoy & Adams (2023), quantitative research involves gathering and interpreting numerical data to identify trends, averages, and hypotheses, as well as to examine causal relationships and generalize findings to larger populations. For this study, a self-constructed questionnaire was used to collect quantitative data from the respondents of the study.

This method was chosen as it is most suitable for interpreting data and for validating hypotheses or objectives concerning relationships between variables. Chattamvelli & Shanmugam (2023) explain that descriptive statistics provide basic information about the data collected in a study, while Miksza et al. (2023) note that the primary goal of a descriptive-correlational study is to describe relationships between variables without attempting to establish causality. This approach is appropriate for the current study, as the researchers sought to explore correlations between preservice teachers' assessments of the relevance of Southeast Asian multicultural literature and their cross-cultural understanding.

Subjects of the Study

The respondents of this study were the preservice ESL teachers of a state university in the Southern Tagalog region, the Philippines. Out of a total population of 107 preservice ESL teachers, a sample size of 84 was determined using the Raosoft Sample Size Calculator with a 95% confidence level and a 5% margin of error. Table 1 presents the distribution of respondents in the study. This distribution provides a comprehensive understanding of the sample population and supports the interpretation of the study's findings.

Table 1 Distribution of Respondents

Year Level	Pre-service ESL Teachers	
	Population	Sample Size
First Year	36	29
Second Year	35	26
Third Year	36	29
Total	107	84

Data Gathering

A self-constructed questionnaire served as the primary data-gathering instrument in this study, developed through a systematic process to ensure content relevance, alignment with the study objectives, and psychometric soundness. It was designed to measure two major constructs: the perceived relevance of cultural diversity-based learning experiences in the study of Southeast Asian multicultural literature, and the manifestation of cross-cultural

understanding across three dimensions: critical, empathic, and conceptual understanding. The final version consisted of 25 items divided into two sections. The first section, on perceived relevance of cultural diversity-based learning experiences, contained 5 items, each representing one instructional strategy: creative dramatics, visual arts projects, graphic organizers, writing workshops, and research-based activities. The second section, focusing on the manifestation of cross-cultural understanding, consisted of 20 items measuring critical understanding, empathic understanding, and conceptual understanding, with each dimension represented by five items.

The initial draft of the instrument was reviewed by five experts in literature pedagogy, multicultural education, and educational measurement to ensure that each item was clearly stated, relevant, and aligned with the study objectives. Feedback from the expert panel was used to revise or remove items as necessary, resulting in the final 25-item version. The instrument was pilot-tested with 30 preservice ESL teachers who were not part of the main study. Reliability analysis of the pilot test yielded a weighted overall Cronbach's alpha of 0.87, indicating high internal consistency. Subscale reliability coefficients were as follows: creative dramatics (0.88), visual arts projects (0.87), graphic organizers (0.85), writing workshops (0.89), research-based activities (0.90), critical understanding (0.86), empathic understanding (0.88), and conceptual understanding (0.87). These results confirm that the instrument is internally consistent and suitable for use in the main study.

After confirming the validity and reliability of the questionnaire, the final version was distributed to the participants. Authorization for the questionnaire's dissemination was obtained from the relevant authorities. Due to the hybrid classroom environment demanded by the pandemic, the questionnaire was administered via Google Forms. Participants responded to questions using a fixed alternative format, selecting from predetermined response options. This approach ensured consistency in data collection and facilitated the comparison and analysis of responses across participants.

The response scale used in the questionnaire was categorized as follows: 3.50–4.00 indicated that the item was Highly Relevant or Highly Manifested; 2.50–3.49 represented Moderately Relevant or Moderately Manifested; 1.50–2.49 signified Slightly Relevant or Slightly Manifested; and 1.00–1.49 denoted Least Relevant or Least Manifested.

Data Analysis

The quantitative data collected were analyzed using mean, standard deviation, and Pearson correlation to determine the relationship between the respondents' learning experiences and their cross-cultural understanding of Southeast Asian multicultural literature.

Results

The results are presented in the following tables, which are organized to align with the specific objectives of the study. These tables display the data in a structured format, providing a clear representation of the findings based on the collected data.

Relevance of learning experiences studying Southeast Asian Multicultural Literature

This section presents the respondents' perceptions of the relevance of cultural diversity-based learning experiences in the study of Southeast Asian multicultural literature. The areas examined include creative dramatics, visual arts projects, graphic organizers, writing workshops, and research.

Table 2 shows the relevance of five learning activities in the study of Southeast Asian Multicultural Literature based on mean scores and their corresponding verbal interpretations across five learning outcomes. All learning activities received ratings within the highly relevant

range, with mean values between 3.63 and 3.71, surpassing the minimum requirement for high relevance.

Research ranked highest overall with a mean score of 3.71. The outcome involving understanding one's own cultural identity consistently recorded the highest mean scores, ranging from 3.68 to 3.79. This finding indicates that students consider self-awareness a vital aspect of their engagement with multicultural literature. Valuing the unique perspectives of various cultural groups was rated highly by all learning activities, with mean scores from 3.64 to 3.75. This result reflects an appreciation for cultural diversity among students. The capacity to relate to universal experiences that transcend cultural boundaries also obtained high relevance scores, suggesting that the learning activities effectively promote empathy and cultural connection.

Table 2 Relevance of learning experiences studying Southeast Asian Multicultural Literature

Item Statements	Learning Activities									
	Creative Dramatics		Visual Arts Project		Graphic Organizers		Writing Workshops		Research	
	\bar{x}	VI	\bar{x}	VI	\bar{x}	VI	\bar{x}	VI	\bar{x}	VI
1. Understand one's own cultural identity.	3.79	HR	3.71	HR	3.68	HR	3.69	HR	3.75	HR
2. Value the unique perspectives of various cultural groups.	3.75	HR	3.70	HR	3.70	HR	3.64	HR	3.73	HR
3. Connect to the universal experiences that cut across cultures.	3.64	HR	3.61	HR	3.58	HR	3.60	HR	3.73	HR
4. Critique indifferences of experiences by specific cultural groups.	3.48	MR	3.65	HR	3.55	HR	3.65	HR	3.68	HR
5. Develop commitment into taking action to create a more just and equitable world.	3.57	HR	3.58	HR	3.62	HR	3.59	HR	3.68	HR
Overall	3.65	HR	3.64	HR	3.63	HR	3.64	HR	3.71	HR

Legend: 3.50-4.00 (Highly Relevant), 2.50-3.49 (Moderately Relevant), 1.50-2.49 (Slightly Relevant), and 1.00-1.49 (Least Relevant)

Critiquing the indifferences experienced by particular cultural groups showed some variation. Creative Dramatics received a mean rating of 3.48, falling under moderate relevance, while the other activities remained within the highly relevant category, scoring between 3.55 and 3.68. This suggests that not all learning methods equally support critical reflection on social inequities. The development of commitment toward creating a more just and equitable society received high relevance scores from all learning activities, ranging from 3.57 to 3.68. This outcome points to the role of these instructional approaches in fostering social responsibility.

The results emphasize the effectiveness of varied learning activities in cultivating cultural understanding, critical awareness, and social engagement through Southeast Asian Multicultural Literature. The consistently high relevance scores across activities support the use of multiple pedagogical approaches to enrich student learning.

Manifestation Level of Cross-cultural Understanding of Southeast Asian Multicultural Literature

This study measured the levels of cross-cultural understanding of the Southeast Asian multicultural literature among the preservice teachers along its three key dimensions: critical, emphatic, and conceptual understanding. By analyzing how literature from this diverse region influences readers' perceptions and interactions with different cultures, the research provides insights into how such texts foster deeper intercultural connections. The following tables present data on these dimensions, offering a comprehensive overview of how multicultural literature contributes to broadening cross-cultural perspectives.

Table 3 Manifestation Level of Critical Cross-cultural Understanding of Southeast Asian Multicultural Literature

Item Statements	Mean	Interpretation
1. Distinguish authentic cultural depictions in text.	3.33	MM
2. Justify characters' actions based on their ethnicity and value system.	3.46	MM
3. Examine the soundness of characters' perspectives.	3.49	MM
4. Evaluate the accuracy of portrayals of ethnic characters.	3.55	HM
5. Write a critique on cultural representations in Southeast Asian literature.	3.27	MM
Overall	3.42	MM

Legend: 3.50-4.00 (Highly Manifested), 2.50-3.49 (Moderately Manifested), 1.50-2.49 (Slightly Manifested), and 1.00-1.49 (Least Manifested)

Table 3 presents the manifestation levels of critical cross-cultural understanding among students of Southeast Asian Multicultural Literature. The mean scores for five key indicators range from 3.27 to 3.55, with an overall mean of 3.42. This places the general level of critical cross-cultural understanding within the moderately manifested category. The highest mean score was recorded for the ability to evaluate the accuracy of portrayals of ethnic characters, with a value of 3.55. This suggests that students demonstrate a relatively strong capacity to assess how ethnic characters are represented in literary texts.

Other items, including distinguishing authentic cultural depictions in texts, justifying characters' actions based on ethnicity and values, examining the soundness of characters' perspectives, and writing critiques on cultural representations, received mean scores between 3.27 and 3.49. These reflect moderate levels of critical engagement with cultural content.

The moderately manifested overall score indicates that while students show an emerging awareness and critical insight into cross-cultural issues within Southeast Asian literature, there remains room for further development. Strengthening instructional strategies that deepen analytical skills may enhance students' critical understanding and enable more nuanced critique of cultural representations.

Table 4 Manifestation Level of Emphatic Cross-cultural Understanding of Southeast Asian Multicultural Literature

Item Statements	Mean	Interpretation
1. Recognize the cultural beliefs from which characters draw their actions.	3.62	HM
2. Acknowledge the difficulties faced by characters due to their ethnicity/race.	3.06	MM
3. Connect to the characters' emotions from life tribulations.	3.63	HM
4. Provide advices or moral supports to colleagues experiencing similar problems with those illustrated in literary texts.	3.51	HM
5. Advocate social justice and equality as a result of reading literary texts.	3.51	HM
Overall	3.57	HM

Legend: 3.50-4.00 (Highly Manifested), 2.50-3.49 (Moderately Manifested), 1.50-2.49 (Slightly Manifested), and 1.00-1.49 (Least Manifested)

Table 4 displays the manifestation levels of emphatic cross-cultural understanding as demonstrated by students in their study of Southeast Asian Multicultural Literature. The overall mean score of 3.57 falls within the highly manifested category, indicating a strong presence of empathy in students' engagement with the texts. Among the individual items, the ability to connect with the emotions of characters facing life challenges and to recognize the cultural beliefs that inform their actions received the highest mean scores of 3.63 and 3.62, respectively. These results reflect students' deep emotional resonance and awareness of cultural contexts within the literature.

The capacity to provide advice or moral support to peers encountering similar issues, along with advocacy for social justice and equality inspired by the readings, also demonstrated high manifestation levels, each with a mean of 3.51. These findings highlight the development of prosocial attitudes linked to literary engagement. The only item that fell within the moderately manifested range was the acknowledgment of difficulties experienced by characters due to ethnicity or race, with a mean score of 3.06. This suggests some variability in students' recognition of social challenges depicted in the literature.

These findings reveal that students display a high degree of empathy as they relate to characters and cultural experiences in Southeast Asian Multicultural Literature. This underscores the potential of literature to cultivate emotional understanding and social responsibility among learners.

Table 5 presents the manifestation levels of conceptual cross-cultural understanding among students studying Southeast Asian Multicultural Literature. The overall mean score of 3.64 places this dimension within the highly manifested category, indicating a strong conceptual grasp of cross-cultural principles.

Table 5 Manifestation Level of Conceptual Cross-cultural Understanding of Southeast Asian Multicultural Literature

Item Statements	Mean	Interpretation
1. Develop tolerance of practices that differ from own cultural orientation.	3.54	HM
2. Accept beliefs or perspectives of people from minority or ethnic groups.	3.65	HM
3. Embrace cultural diversities or variations among social and ethnic groups.	3.07	MM
4. Avoid prejudices or biases of people from other cultural orientations or religious affiliations.	3.63	HM
5. Uphold social equality and justice in every aspect of life.	3.68	HM
Overall	3.64	HM

Legend: 3.50-4.00 (Highly Manifested), 2.50-3.49 (Moderately Manifested), 1.50-2.49 (Slightly Manifested), and 1.00-1.49 (Least Manifested)

Students demonstrated the highest levels of manifestation in accepting beliefs or perspectives of minority or ethnic groups (mean = 3.65), upholding social equality and justice (mean = 3.68), and avoiding prejudices or biases toward individuals of different cultural or religious backgrounds (mean = 3.63). These findings reflect a well-developed attitude of respect and fairness towards cultural diversity. Developing tolerance for cultural practices different from one's own received a highly manifested rating with a mean of 3.54, suggesting that students generally appreciate cultural differences. The ability to embrace cultural diversities among social and ethnic groups was moderately manifested with a mean of 3.07. This indicates some variation in the extent to which students internalize and express acceptance of cultural plurality.

The results highlight students' overall strong conceptual understanding of cultural diversity, tolerance, and social justice. This level of conceptual cross-cultural understanding demonstrates the capacity of Southeast Asian Multicultural Literature to shape learners' attitudes and values toward inclusivity and equity.

Table 6 Summary Table of Cross-cultural Understanding of Southeast Asian Multicultural Literature

Cross-cultural Understanding	Mean	Interpretation
Critical Understanding	3.42	Moderately Manifested
Emphatic Understanding	3.57	Highly Manifested
Conceptual Understanding	3.64	Highly Manifested
Grand Mean	3.54	Highly Manifested

Table 6 summarizes the overall levels of cross-cultural understanding demonstrated by students through their engagement with Southeast Asian Multicultural Literature. The three dimensions assessed—critical, emphatic, and conceptual understanding—show varying degrees of manifestation.

Critical understanding registered a mean score of 3.42, indicating a moderate level of manifestation. This suggests that students are developing analytical skills to critically evaluate cultural representations, though further growth is needed to reach a higher level of proficiency. Emphatic understanding obtained a mean of 3.57, falling within the highly manifested range. This reflects students' strong ability to empathize with characters' experiences and cultural contexts, highlighting emotional engagement as a key aspect of their learning. Conceptual understanding recorded the highest mean score at 3.64, also classified as highly manifested.

This outcome points to students' well-established acceptance of cultural diversity, tolerance, and commitment to social justice.

The grand mean of 3.54 confirms that, overall, students exhibit a highly manifested cross-cultural understanding. These results imply that Southeast Asian Multicultural Literature effectively fosters multiple dimensions of cross-cultural competence, with particular strength in empathy and conceptual appreciation.

Relationship between the Respondents' Learning Experiences and Cross-Cultural Understanding of Southeast Asian Multicultural Literature

Table 7 presents the relationship between the respondents' assessment of the relevance of cultural diversity-based learning experiences and their cross-cultural understanding of Southeast Asian Multicultural Literature. The correlation between these variables was analyzed using the Pearson r formula.

Table 7 Relationship between the Respondents' Learning Experiences and Cross-Cultural Understanding of Southeast Asian Multicultural Literature

Learning Experiences	Cross-Cultural Understanding		
	Critical Understanding (r, p)	Empathic Understanding (r, p)	Conceptual Understanding (r, p)
Creative Dramatics	0.579 (p=0.000)	0.594 (p=0.000)	0.608 (p=0.000)
Visual Arts	0.622 (p=0.000)	0.596 (p=0.000)	0.642 (p=0.000)
Graphic Organizers	0.536 (p=0.000)	0.529 (p=0.000)	0.559 (p=0.000)
Writing Workshops	0.534 (p=0.000)	0.604 (p=0.000)	0.606 (p=0.000)
Research	0.741 (p=0.000)	0.611 (p=0.000)	0.867 (p=0.000)

The analysis revealed consistently positive and statistically significant correlations ($p < .001$) between all measured learning experience subdimensions and cross-cultural understanding subdimensions. This indicates a strong and consistent association between the variety of learning experiences provided and the degree of students' cross-cultural understanding. The highest correlation was observed between Research and Conceptual Understanding ($r = 0.867$), suggesting that research-oriented activities are closely aligned with students' ability to synthesize, integrate, and contextualize multicultural concepts. This result affirms that research-based tasks encourage students to engage in deeper analysis, establish connections between diverse cultural narratives, and develop a more comprehensive understanding of ASEAN multicultural contexts.

The lowest, although still moderate, correlation was found between Writing Workshops and Critical Understanding ($r = 0.534$). While writing activities contribute to students' critical engagement, this relatively weaker association suggests that current workshop approaches may require enhancement in order to more effectively foster analytical thinking and critical reflection on multicultural literature. This finding points to the potential need for writing activities that are explicitly structured to incorporate literary criticism, intercultural analysis, and comparative evaluation of texts representing various ASEAN cultures.

These findings imply that the integration of varied and interactive learning experiences, particularly those that emphasize research, can substantially enhance cross-cultural understanding in the study of Southeast Asian multicultural literature. Instructional practices may therefore benefit from embedding research tasks that require comparative and contextual analysis of literary works, facilitating classroom dialogues that explore the socio-historical background of ASEAN nations, and designing writing activities that move beyond descriptive

responses toward critical examination of cultural representation. Such pedagogical strategies are essential in equipping learners with the analytical and reflective skills needed to appreciate cultural diversity and to actively participate in intercultural dialogue within the ASEAN context.

Discussions

The results indicate that preservice ESL teachers possess a high level of critical, emphatic, and conceptual cross-cultural understanding through their engagement with Southeast Asian Multicultural Literature. This outcome affirms the capacity of varied learning experiences such as creative dramatics, visual arts projects, writing workshops, graphic organizers, and especially research activities, to develop cross-cultural competence among teacher candidates. The positive and significant correlations between these learning activities and cross-cultural understanding highlight the importance of diverse instructional approaches that foster active participation and reflection (Bañez, 2016; Bañez & Callo, 2022).

The pronounced manifestation of emphatic and conceptual understanding shows that preservice teachers do more than cognitively recognize cultural differences; they also emotionally connect with and appreciate diverse cultural perspectives. Such emotional involvement is vital in nurturing socially responsible attitudes and culturally sensitive dispositions, which are necessary attributes for educators working in multicultural settings (Paetsch et al., 2016). The moderate level of critical understanding, although still significant, suggests an emerging ability among preservice teachers to analyze and evaluate cultural representations with discernment. This skill is crucial in equipping future teachers to guide learners in critical reflection and in challenging cultural biases (Walker, 2023).

Research activities demonstrate the strongest relationship with conceptual understanding, emphasizing the value of inquiry-based and reflective learning experiences in developing deeper cultural insight and social justice awareness. This supports the argument that teacher education programs must incorporate research-oriented tasks to cultivate analytical and critical thinking skills related to culture and diversity (Tarrayo, 2022). Other activities such as graphic organizers contribute to understanding but may require supplementation with more engaging and critical pedagogies to maximize impact.

Integrating Southeast Asian multicultural literature in teacher education aligns closely with the cultural realities of the Philippine classroom and the ASEAN region. This regional focus addresses a notable gap in the literature, which often privileges Western texts, and promotes a more inclusive and contextually relevant multicultural pedagogy (Bañez & Callo, 2022). Preservice teachers exposed to local and regional narratives are better prepared to respond to the diverse linguistic and cultural backgrounds of their future students.

The findings also imply a need to intensify the development of critical cross-cultural skills among preservice teachers. Advancing critical consciousness is essential for enabling educators to facilitate meaningful cultural critique and social justice advocacy within their classrooms. Strengthening this dimension will contribute to producing educators who are not only culturally aware but also capable of fostering transformative learning experiences that challenge inequities (Castellví et al., 2019).

This study contributes significantly to the discourse on multicultural education in teacher preparation. It demonstrates that Southeast Asian multicultural literature, combined with varied and interactive learning activities, enhances preservice teachers' cross-cultural competence at cognitive, affective, and analytical levels. These insights provide a foundation for curriculum planners and teacher educators to design programs that promote culturally responsive teaching and social justice education in the Philippine context. The significant positive correlations found between the perceived relevance of cultural diversity-based

learning experiences and the levels of cross-cultural understanding indicate that purposeful integration of such literature cultivates both cognitive and affective competencies among preservice ESL teachers (Bañez, 2024). These competencies are essential in recognizing and challenging inequities embedded in dominant cultural narratives. By engaging with literary works that reflect the histories, struggles, and aspirations of various Southeast Asian communities, preservice teachers enhance their capacity to critically examine systems of exclusion, develop empathy for marginalized groups, and commit to equitable pedagogical practices. This heightened cross-cultural awareness, as evidenced by the study findings, equips them to design and implement instruction that values representation, fosters inclusivity, and affirms the identities of all learners. Thus, the incorporation of Southeast Asian multicultural literature emerges not only as a medium for linguistic and cultural development but also as a transformative educational strategy that prepares future educators to become active agents in promoting fairness, equity, and social justice in diverse classroom contexts.

Conclusion and suggestions

As highlighted in this paper, studying and understanding Southeast Asian multicultural literature significantly enhances appreciation for diverse literary works and academic fields. It fosters a holistic perspective, acceptance of individual differences, and an appreciation of cultural backgrounds. Integrating culturally-focused learning exercises improves engagement with literature and promotes equitable treatment across critical, empathic, and conceptual dimensions, thereby increasing empathy for diverse viewpoints and cultural preferences.

Incorporating various learning activities that emphasize cultural diversity enriches students' understanding and critical thinking skills. It also encourages an open-minded approach to the complexities of culture when teaching Southeast Asian multicultural literature. Such activities provide opportunities for both teachers and students to enhance their awareness and adaptability. Implementing a learning guide centered on Southeast Asian multicultural literature can effectively raise awareness about the importance of cultural diversity among students and educators, thereby stimulating interest in the subject.

Higher education institutions are well-positioned to support teachers in managing multicultural courses. They can offer workshops that present teaching strategies for integrating literary studies effectively. Additionally, institutions should work to maintain and develop learning resources, such as the aforementioned learning guide, to ensure the continued effective teaching of multicultural literature in evolving educational contexts.

New knowledge and the effects on society and communities

Contemporary society is undergoing continuous transformation, with students increasingly engaging with individuals from diverse cultural backgrounds, ethnicities, nations, and lifestyles. This dynamic fosters movements toward equality, social justice, and democracy, alongside the advancement of multicultural education. Multicultural education plays a crucial role in building positive self-esteem and mitigating feelings of exclusion among students. It offers vital opportunities for fostering respect, empathy, and inclusion. Additionally, multicultural literature serves as an essential instructional tool that broadens students' perspectives and enhances their understanding of diversity both within the classroom and globally. It educates students to appreciate individuals from varied cultural contexts.

The study assesses preservice ESL teachers' evaluations regarding the relevance and manifestation levels of cross-cultural understanding through various activities, including visual

arts projects, creative dramatics, graphic organizers, writing workshops, and research. These activities are intended to enhance students' engagement with multicultural literature.

The findings reveal that diverse learning strategies, such as creative dramatics, visual arts projects, graphic organizers, writing workshops, and research, are considered highly relevant and effective. These methods significantly contribute to respondents' knowledge of various cultures, beliefs, values, and principles. The study indicates that respondents exhibited a high level of cross-cultural understanding of Southeast Asian multicultural literature, encompassing critical, empathetic, and conceptual dimensions. This suggests that respondents are proficient at embracing and appreciating diverse cultures. Furthermore, a substantial correlation exists between the relevance of cultural diversity-based learning experiences and the level of cross-cultural understanding of Southeast Asian literature.

These findings emphasize the positive impact of employing varied learning strategies on students' educational experiences and outcomes. The use of this learning guide is expected to motivate, innovate, and engage students, thereby supporting their academic success. Consequently, this contributes to the educational attainment and development of individuals within society, as evidenced by their academic performance. While this summary provides an overview of learning experiences and cross-cultural understanding of Southeast Asian multicultural literature, it is important to recognize that further research and emerging discoveries in this field may yield more nuanced findings and insights.

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A Narrative Review on the Impacts of Digital Literacy and Social Capital on the Innovation Performance of Cultural Enterprises

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Abstract

Amid the rapid global growth of the cultural and creative economy, China's cultural industry has emerged as a key driver of regional economic transformation, fueled by policy support, digital technology, and consumption upgrades. Small and micro cultural enterprises, now accounting for over 84% of the sector, play a critical role in cultural innovation but face persistent structural challenges that hinder their innovation performance. This narrative review, based on Web of Science and Scopus literature, integrates Resource-Based Theory and Social Network Theory to propose a "Resource-Network-Platform" framework, revealing how digital literacy and social capital dynamically interact to enhance innovation performance within cultural industry clusters. Based on the dual logics of resources and networks, this study proposed an integrative theoretical model of innovation in SMEs of cultural enterprises so as to build foundation for future empirical studies. Findings highlight a dynamic coupling mechanism between internal capabilities and external networks, offering theoretical insights and practical guidance for cluster governance, platform development, and enterprise digital capacity building, while paving the way for cross-theoretical research in cultural industries. Unlike previous studies solely stand from a single perspective, this study emphasizes the dynamic, systemic value of theoretical intersections in explaining innovation mechanisms in SMEs.

Keywords: Social capital, Digital literacy, Innovation performance, Cultural industry clusters, Collaborative innovation platforms

Introduction

Against the backdrop of the accelerated development of the global cultural and creative economy, the cultural industry is increasingly becoming an important engine for driving the transformation of regional economic structures. In China, driven by multiple factors including policy support, deep penetration of digital technologies, and consumption upgrades, the cultural industry continues to release new economic and social values. Its added value as a proportion of GDP shows a year-on-year increase, gradually evolving into a new industrial system that integrates creative content, digital technologies, and cultural services (Ministry of Commerce General Office, 2024). In this process, small and micro cultural enterprises, with their flexibility and innovative vitality, have become key components of cultural industry clusters. People's Daily Overseas Edition (2023) reported that the number of small and micro cultural enterprises in China now accounts for over 84% of the total number of cultural enterprises, actively participating in core business areas such as content creation, design development, and digital communication, and playing an indispensable role in promoting cultural and creative innovation. However, these enterprises generally face structural challenges such as limited access to resources, weak financing capabilities, and a lack of collaborative networks, leading to significant instability in their innovation performance. As an important spatial organizational form, cultural industry clusters provide a platform environment for knowledge transfer, resource collaboration, and joint innovation by promoting geographical proximity and relational embedding among internal enterprises. Theoretically, clusters offer small and micro cultural enterprises potential resource channels and cooperation networks, serving as a key intermediary mechanism for enhancing their innovation capabilities. Nevertheless, existing research is often confined to a single theoretical perspective—either focusing on internal resource endowments of enterprises or emphasizing external network structures—while discussions on the integrative mechanisms for systematically achieving innovation performance within cluster environments for small and micro cultural enterprises are still insufficient. Therefore, this study aims to integrate Resource-Based Theory and Social Network Theory, and, based on a systematic review of the latest research literature indexed in authoritative databases such as Web of Science and Scopus, constructs an analytical framework of “resources—networks—platforms” in a collaborative triadic model.

Research objective

To integrate Resource- Based Theory and Social Network Theory to construct an integrative and analytical framework.

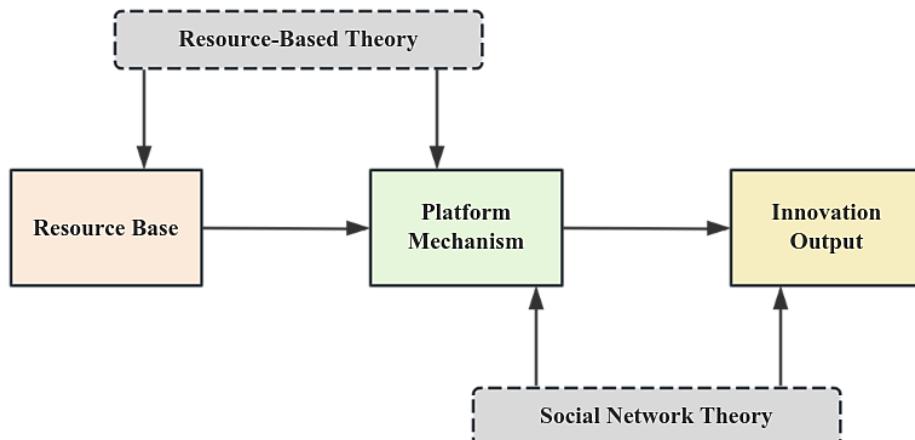


Figure 1 Conceptual Framework (Source : Researcher, 2025)

Methodology

This study utilizes a narrative review approach, which is a qualitative and non-systematic method. The review is based on literature indexed in authoritative databases, specifically Web of Science and Scopus.

Search Strategy

The search strategy involved identifying key terms such as "social capital," "digital literacy," "innovation performance," "cultural industry clusters," and "collaborative innovation platforms." These terms were combined with theoretical frameworks like Resource-Based Theory and Social Network Theory. Inclusion criteria prioritized peer-reviewed articles and books that explored the intersection of resources, networks, and platforms within management, sociology, and cultural studies. The focus was on recent publications (post-2010) to reflect evolving digital and cluster dynamics.

Literature Screening Procedure

The screening process was conducted in three stages. The initial screening is to filter out irrelevant based on their titles and abstracts. Followed by full-text review, so the full text of the remaining articles was read to ensure they had a clear research objective, theoretical support, and defined variable relationships. Final exclusion is to exclude conference abstracts, book reviews, non-academic papers, and duplicate studies. Ultimately, a total of 59 English-language papers were included, comprising theoretical studies, empirical research, and comprehensive review articles. This study did not use a strict, predefined protocol. Instead, the research questions were refined to ensure a comprehensive understanding of the mechanisms influencing innovation. The selection process emphasized studies from diverse fields to capture multidimensional perspectives. This approach prioritizes critical interpretation over exhaustive reproducibility, which aligns with the nature of narrative reviews.

Results

Literature Review and Results:

This section presents the study's theoretical findings, which integrate the comprehensive literature review to contextualize the 'Resource-Network-Platform' framework.

Theoretical Foundation and Core Concepts

When exploring the innovation behavior mechanisms of small and micro cultural enterprises within cultural industry clusters, Resource-Based Theory (RBT) and Social Network Theory (SNT) are two widely used core theoretical perspectives. The former emphasizes how enterprises build sustained competitive advantage through internal resources characterized by scarcity and heterogeneity, while the latter focuses on how organizations access external resources and achieve knowledge collaboration after being embedded in social relational networks.

Resource-Based Theory (RBT)

The Resource-Based Theory (RBT), formally proposed by Barney in 1991, suggests that a firm's sustained competitive advantage arises from its rare and inimitable key resources. In strategic management, RBT emphasizes four main characteristics of internal resources:

value (Valuable), rarity (Rare), inimitability (Inimitable), and non-substitutability (Non-substitutable), which together form the VRIN framework. This theory reveals the underlying reasons for performance differences between organizations. Over time, RBT has evolved from a static resource view to a dynamic perspective. Scholars like Teece et al. (1997) further developed the dynamic capabilities framework, which posits that firms need to integrate, reconfigure, and allocate resources in complex environments to achieve sustainable competitive advantage. This has expanded RBT's capacity to explain evolutionary strategic behavior.

In cultural industry clusters, small and micro-sized cultural enterprises, as key players in the cluster, typically have high creative potential and organizational flexibility. However, they face challenges like resource scarcity and financing difficulties. RBT provides theoretical support for understanding how these firms build innovation capabilities through internal resources. For example, digital literacy, as a key technological resource, not only reflects a firm's ability to use information tools but also influences its efficiency in information processing, content creation, and collaboration in a platform environment. Furthermore, as the innovation paradigm shifts toward collaborative platforms and cross-organizational collaboration, traditional RBT must also account for how firms enhance their capabilities by acquiring external resources. Recent studies have gradually recognized that firm resources are not entirely internally generated but are embedded in broader social networks, including access to knowledge, trust, and cooperation through social capital (Willie, 2024). In a cluster environment, the pathways for resource acquisition, integration capabilities, and platform participation mechanisms form the key mechanisms for the innovative performance of small and micro cultural enterprises. RBT can serve as the foundational theory to explain this mechanism, but it needs to incorporate an external dimension, focusing on how resources flow and are collaboratively utilized within the cluster ecosystem.

Social Network Theory (SNT)

Social Network Theory, originally proposed by Granovetter (1973), emphasizes the embeddedness of organizations within social relationship networks and the mechanisms through which these networks influence resource flows. The theory put forward that an organization's position within the network including its centrality, structural holes, the type of relationships where ties are strong or weak, and the whether structural characteristics is closed or open, all determines its access to resources and innovation capabilities (Borgatti & Halgin, 2011). As the theory has developed, its explanatory scope has expanded. Burt (1992) extended the structural holes theory to reveal the competitive advantage of non-redundant connections. Later on, Nahapiet and Ghoshal (1998) proposed a three-dimensional model of social capital, which is structural, relational, and cognitive embeddedness, offering a systematic analysis of the efficiency logic of network cooperation. Further studies in 2018 when the digital age have introduced, the concept of "network overlay" highlighted the role of digital literacy in reshaping network power (Nambisan et al., 2018).

When it comes to cultural industry clusters, SNT provides a crucial analytical framework. For example, Li & Yu (2022) said that cluster firms leverage network centrality to control resource channels; Wen et al., (2021) used structural holes to bridge heterogeneous knowledge, and Ju & Wang (2023) think that it balanced trust-building and open innovation through network closure. In sum, these network attributes directly shape the collaborative efficiency and value distribution power of firms in domain of the innovation ecosystem with particular relevance to the platform-based collaboration when it comes to small and micro cultural enterprises.

The Conceptualization and Key Dimensions of Social Capital

Through a comprehensive review of literature, it is evident that scholars have applied Social Capital Theory across various fields, including sociology (Huang, 2016), political science (Makridis & Wu, 2021), education (Benbow & Lee, 2019), and management (Brown & Van Buren, 2007). Coleman (1988) argues that, regardless of the type of capital, it is created through changes in existing structures during the value creation process, and these changes lead to positive relational outcomes.

In clusters, dense social networks facilitate cooperation, enhancing knowledge sharing, information transfer, and continuous innovation (Kim & Shim, 2018). However, strengthening solidarity within groups can sometimes limit the flexibility needed for local community development (Woolcock, 1998). Uhlener et al. (2015) emphasized that relational capital contributes to the success of regional clusters by providing small and medium-sized enterprises (SMEs) with knowledge, resources, and opportunities. Hashim et al. (2015) further developed that the sustained willingness of network members to share knowledge have relation with their emotional engagement and trust for the community.

Cognitive social capital was defined to have shared visions, norms, rules, collective narratives, languages, and vocabularies, which foster the creation and sharing of new knowledge (Inkpen & Tsang, 2005). García-Villaverde et al. (2018) explored the relationship between structural social capital and knowledge acquisition in clusters, highlighting the importance of the cognitive and relational dimensions of cluster membership. Liu (2018) examined the mechanisms of knowledge transfer and how various attributes of social capital interact with firms in the cultural and creative industries, revealing the bridge role of organizational learning between social capital and knowledge transfer. Their findings suggest that structural social capital indirectly influences knowledge acquisition through the relationship and cognitive dimensions of cluster members. García-Villaverde et al. (2021) further explored the moderating role of closed and diverse relationships in the tourism cluster, discovering that firms in the cluster gain significant benefits by cultivating social capital to enhance market vitality and entrepreneurial orientation.

The Conceptual Definition and Key Dimensions of Digital Literacy

The connotation of digital literacy has continuously deepened and expanded with the development of digital technologies and the improvement of people's cognitive levels. As early as the 1990s, Lanham (1995) began using the term digital literacy. At that time, computers and multimedia were developing rapidly, and the initial meaning of digital literacy referred to the ability to read and understand multimedia content. Some scholars also referred to it as media literacy or computer literacy. With the revolution of the internet and the changes of the times, the concept of digital literacy has gradually become more enriched and extended. Currently, there is no unified definition in academia. Compared with the definition of digital literacy, the measurement dimensions of digital literacy are more closely aligned with reality and are easier to understand, and relevant scholars have formed different definitions of digital literacy from different dimensions with varying focal points.

Table 1 Summary of Digital Literacy Dimensions

Author	Dimensions
Eshet (2012)	Photo-visual thinking, real-time thinking, information thinking, branching thinking, reproduction thinking, socio-emotional thinking
Heitin (2016)	Finding and consuming digital content, creating digital content, communicating or sharing digital content
EDL Foundation (2018)	Information, communication, content creation, safety awareness, and problem-solving
Eden and Eshet-Alkalai (2013)	Photo-visual digital skills, reproduction digital skills, branching digital skills, information digital skills, socio-emotional digital skills, and real-time thinking skills
Santoso et al. (2019)	Technical dimension, cognitive dimension, and socio-emotional dimension
Calvani et al. (2008)	
Ng (2012)	
Martin & Grudziecki (2006)	Generic digital literacy, professional digital literacy, digital innovation literacy
Law et al. (2018)	Computer literacy, ICT literacy, information literacy, and media literacy

Impact of Social Capital on Innovation Performance

Social capital, as an important resource for enterprise innovation, influences innovation performance primarily through three dimensions: structural social capital, relational social capital, and cognitive social capital. According to Martínez-Cañas et al. (2012), structural social capital helps firms acquire key knowledge and scarce resources necessary for innovation by enhancing their position and influence within networks. Alguezaui & Filieri (2010a) further pointed out that the size and centrality of a social network significantly affect innovation performance. Relational social capital facilitates knowledge exchange through trust and norms, and Cappiello et al. (2020) found that trust stimulates cooperation willingness and reduces transaction risks (Ganguly et al., 2019). Cognitive social capital promotes knowledge transfer through shared language and values, with Nahapiet & Ghoshal (1998) emphasizing its crucial role in collaboration. Kannadhasan et al. (2018) also pointed out that a shared understanding of task goals enhances innovation performance. Additionally, Kim & Shim (2018) studied SMEs in the Korean tourism cluster and found that social capital significantly enhances competitiveness through knowledge sharing. Singh et al. (2021), through data analysis from multinational enterprises in emerging markets, concluded that social capital has a positive impact on innovation performance. Tang et al. (2014a) explored how social capital improves innovation performance through failure learning mechanisms. Lyu et al. (2022), in their study of Chinese digital enterprises, found that social capital significantly impacts innovation performance through cross-border knowledge search and absorption capabilities.

Table 2 Social Capital and Innovation Performance

Author	Application of Social Capital	Social Capital Dimension	Results
Martínez-Cañas et al. (2012)	Social capital → knowledge acquisition → corporate innovation	Relational, Cognitive, Structural	Results partially support the impact of social capital on corporate innovation.
Kim and Shim (2018)	Social capital → knowledge sharing → innovation	Relational, Cognitive, Structural	Social capital is critical for improving the competitiveness of SMEs.
Singh et al. (2021)	Social capital → knowledge sharing → innovation performance	Social Capital	Results partially support the impact of social capital on innovation performance.
Cappiello et al. (2020)	Social capital → engagement → innovation performance	Relational, Cognitive, Structural	Results partially support the impact of social capital on innovation performance, but the relational dimension was not significantly associated.
Tang et al. (2014b)	Social capital → learning from failure → innovation performance	Relational, Cognitive, Structural	Social capital has a significant positive impact on innovation performance.
Kannadha san et al. (2018)	Social capital → self-efficacy → new ventures	Relational, Cognitive, Structural	Social capital impacts innovation performance, but the relational dimension was not significantly associated.
Ganguly et al. (2019)	Social capital → tacit knowledge sharing → innovation capability	Relational, Cognitive, Structural	Social capital plays an important role in organizational innovation capability.
Lyu, Peng, Yang, Li, Gu, et al. (2022)	Social capital → cross-border knowledge search, absorptive capacity → innovation performance	Relational, Cognitive, Structural	Social capital in digital enterprises has a significant positive impact on innovation performance.
Alguezaui and Filieri (2010b)	Social capital → innovation performance	Relational, Cognitive, Structural	Social networks may also exhibit negative consequences.

Impact of Digital Literacy on Innovation Performance

Digital literacy, as an important component of enterprise resources, influences innovation performance mainly by enhancing information retrieval, processing, and communication capabilities. Martin & Grudziecki (2006) define digital literacy as an individual's comprehensive ability to integrate and communicate information using digital technologies. Ng (2012) further divides it into three dimensions: technical, cognitive, and socio-emotional. Eshet (2012) highlights that these dimensions support tool usage, information evaluation, and collaboration skills, respectively. In the cultural industry, digital literacy is

particularly crucial because it relies on digital technologies for content creation and dissemination. In the literature, Mohammadyari & Singh (2015) studied the impact of digital literacy on individual performance in e-learning, Cetindamar & Abedin (2021) explored how employees' digital literacy affects digital technology usage, and Deschênes et al. (2024) analyzed the collaborative role of digital literacy in hybrid work environments. These studies indirectly suggest that digital literacy, by facilitating knowledge sharing and technology acceptance, may enhance innovation performance.

Interaction between Digital Literacy and Social Capital

The interaction between digital literacy and social capital is primarily reflected in digital literacy enhancing a firm's participation in social networks and its ability to utilize resources. In the literature, Burt (1992) introduced the concept of structural holes, suggesting that firms with high digital literacy can leverage "network overlay" effects to occupy structural hole positions. This means that digital literacy helps firms build and maintain social relationships more effectively so as to access heterogeneous resources. Nahapiet & Ghoshal (1998) highlighted that social capital provides support through trust and norms, which means digital literacy facilitates the effective utilization of these relationships through digital tools. This interaction is particularly evident in collaborative innovation platforms. Studies by Ramaswamy & Gouillart (2010) and later on Tsou et al. (2015) showed that digital literacy promotes collaboration on platforms, while social capital ensures the establishment of trust and norms. In sum, existing literature point out that digital literacy enables firms to integrate external resources more efficiently, at the same time when social capital provides support through relational networks. The two elements mutually reinforce each other, jointly driving innovation performance.

Role of Collaborative Innovation Platforms

The literature defines collaborative innovation as the creation of value through cooperation among multiple stakeholders via networks or platforms. Ramaswamy & Gouillart (2010) emphasized resource complementarity and organizational interaction. The literature points out that platforms enhance trust by establishing shared rules and norms, thereby promoting innovation. Tsou et al. (2015) analyzed the role of platforms from the perspectives of communication and services, while Related studies highlight the significant role of platforms in industrial clusters and innovation ecosystems. For small and micro cultural enterprises, platforms are a key mechanism for crossing technological and market boundaries (Watson et al., 2018), and through cooperation and interaction, they deepen the understanding of the characteristics of cultural enterprises (Pearce, 2022). Cui et al. (2021) demonstrated that platforms help enterprises integrate knowledge and overcome resource limitations by collaborating with universities, suppliers, and other partners. In sum, collaborative innovation platforms provide small and micro-sized cultural enterprises with spaces for resource sharing and knowledge collaboration, making them particularly suitable for resource-constrained businesses.

Results

Drawing on existing literature, this study integrates Resource-Based Theory and Social Network Theory to build the 'Resource-Network-Platform' triadic collaborative model focusing on the innovation behaviors of small and micro-sized cultural enterprises within cultural industry clusters. At the theoretical level, this research addresses the long-standing division between "internal capability theory" and "external relationship theory" in innovation studies, proposing that a dynamic coupling mechanism exists between the two paths, where resource endowment and network embedding can mutually promote each other within the

platform mechanism. By introducing platform participation variables, this paper incorporates the collaborative interaction mechanisms between enterprises in the digital context into the theoretical framework, extending the explanatory boundaries of traditional innovation theories to organizational behavior in the digital platform era. At the practical level, this study offers significant reference value for the governance of cultural industry clusters, platform construction, and capacity enhancement of small and micro-sized enterprises. On one hand, cluster managers and policymakers should focus on building platform-based intermediary mechanisms in resource allocation, facilitating channels for policy support, factor flow, and knowledge sharing. On the other hand, small and micro-sized cultural enterprises should enhance their digital literacy and platform collaboration abilities, and proactively build high-quality cooperative networks to achieve resource coordination and capacity upgrading. Moreover, the research findings provide governance references for platform-based organizations. That is to suggest that through mechanism design, we can enhance resource matching efficiency and collaboration stickiness, thereby building a sustainable innovation ecosystem.

Discussions

The suggested Resource–Network–Platform (RNP) framework addresses the problem of fragmented attention to innovation in small and micro cultural enterprises. As, it proposes a form of dynamic coupling, in which resources and capabilities interact with network forms—such as weak ties, structural positions, cognitive alignment, and relational social capital (Granovetter, 1973; Nahapiet & Ghoshal, 1998). These interactions are then amplified through platform governance, which shifts the innovation logic from the classic era to the platform era. Within industrial clusters, such coupling provides a more comprehensive explanation than pluralistic-lens approaches. This is because it simultaneously integrates firm-level resources, inter-organizational knowledge, and the processes through which markets are socially and institutionally constructed. The interaction between digital literacy and social capital is primarily reflected in digital literacy enhancing a firm's participation in social networks and its ability to utilize resources. As pointed out earlier, Burt (1992) introduced the concept of structural holes, suggesting that firms with high digital literacy can leverage "network overlay" effects to occupy structural hole positions. This means that digital literacy helps firms build and maintain social relationships more effectively so as to access heterogeneous resources. Nahapiet & Ghoshal (1998) highlighted that social capital provides support through trust and norms, which means digital literacy facilitates the effective utilization of these relationships through digital tools. This interaction is particularly evident in collaborative innovation platforms. Studies by Ramaswamy & Gouillart (2010) and later on Tsou et al. (2015) showed that digital literacy promotes collaboration on platforms, while social capital ensures the establishment of trust and norms. In sum, existing literature point out that digital literacy enables firms to integrate external resources more efficiently, at the same time when social capital provides support through relational networks. The two elements mutually reinforce each other, jointly driving innovation performance. For small and micro cultural enterprises, platforms are a key mechanism for crossing technological and market boundaries (Watson et al., 2018), and through cooperation and interaction, they deepen the understanding of the characteristics of cultural enterprises (Pearce, 2022). Cui et al. (2021) demonstrated that platforms help enterprises integrate knowledge and overcome resource limitations by collaborating with universities, suppliers, and other partners. This extended framework emphasizes the role of collaborative innovation platforms in amplifying the effects of resource-network interactions, offering a practical pathway for cluster governance to enhance innovation ecosystems.

Conclusion and suggestions

This study offers an analytical paradigm for future cross-theoretical integration research, constructing mechanism models based on structural reviews and extrapolating theory from contextual adaptation. This approach contributes to advancing the diversification and integration of research paradigms in the cultural and creative industries. However, it should be noted that this study is primarily based on a systematic review of relevant literature from databases such as Web of Science and Scopus, which may have limitations in the selection of literature. For instance, the coverage of non-English literature or studies from specific regions, such as local cultural industry clusters, which may be insufficient. Therefore, the "Resource-Network-Platform" collaborative mechanism model proposed in this paper mainly reflects the analytical conclusions of current literature. Future research could further update research methods by adopting in-depth case studies, surveys, social network analysis, or quasi-experimental designs to verify and analyze cluster cases in different cultural contexts, providing more robust data and empirical evidence to refine and the theoretical framework and reveal the specific operational mechanisms and effects of the model in complex, dynamic real-world situations.

New knowledge and the effects on society and communities

At the micro level, this article serves as the preliminary stage of a deeper research to lay the theoretical foundation for subsequent empirical quantitative analysis. From a macro perspective, the integrative framework aims to address the fragmentation and path divergence in current research, so as to offer systematic theoretical support to deepen the theoretical understanding and provide guidance for the innovative practices of small and micro cultural enterprises.

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Pre-Service Mathematics Teachers' Preparedness in Incorporating Digital Math Tools

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Abstract

The integration of technology in mathematics education has become essential in preparing future teachers to foster higher-order thinking skills. However, little is known about the readiness of pre-service mathematics teachers to effectively employ digital tools in classroom practice. This study examined the preparedness of pre-service teachers to integrate three types of digital mathematics tools: open math tasks, rich math tasks, and simulation tools. Using a descriptive-correlational design, data were collected from 88 respondents at Batangas State University through a validated researcher-designed questionnaire. Findings revealed that participants were moderately prepared overall, with the highest preparedness in rich math tasks and the lowest in simulation tools. Preparedness significantly varied by year level and socioeconomic status, while sex showed no significant association. These results underscore the need for targeted training on simulation-based instruction and equitable access to digital resources. The study contributes to the literature on digital readiness in Philippine teacher education and offers evidence-based insights to inform curriculum design and policy initiatives aimed at strengthening technology integration in mathematics teaching.

Keywords: Pre-service teachers, Digital math tools, Open-math task, Rich math task, Simulation tools

Introduction

Classroom settings nowadays are increasingly shaped by technology, yet some teachers who are still manage to teach using traditional setups. In this era, students tend to be more engaged when they learn through conventional and modern approaches. Technology can influence students' academic performance, success, and motivation to attend school. Increased teacher professional development and student exposure to technology help refine recently learned teaching techniques. For school districts to support higher levels of student achievement, technology may serve as the trigger they need (Sancho-Gil, 2020). It is crucial that instructors do not feel threatened by these innovations, but it is equally important that technology be introduced into classrooms carefully. Technology should be utilized to help students develop the abilities required for success in today's world, not simply because it is cutting-edge, entertaining, or popular.

Effective digital learning tools must be incorporated into mathematics curricula in order for schools to adequately prepare students for a successful future in a global society. A teacher's ability to engage students is enhanced by a range of learning technologies and tools because they facilitate students' access to a wealth of information and stimulating activities (LSU Online, 2020). Digital math tools can also be used in classrooms to help students learn mathematics more effectively (Mathletics, n.d.). Such tools are engaging resources that support the dynamics of teaching and learning mathematics (Azevedo et al., 2021). Wong et al. (2023) further point out that computer-enhanced math lessons are beneficial for challenging learners. However, a thorough exploration of how these digital tools affect student learning in mathematics classrooms is required. Moreover, selecting the right digital tools to satisfy instructional objectives is crucial, as the success of any technology depends largely on its implementation.

It is reasonable to assume that different interactive digital tool types are likely to have different effects on student learning because they offer distinct instructional design elements. Therefore, research on how well digital tools are used in teaching and learning should focus more on different types of tools. This study adopts Minero's (2020) three-category classification of digital math tools. Open math tasks require students to approach the subject from multiple angles and apply various mathematical concepts and skills to solve problems. This approach emphasizes that remembering facts and algorithms is not the sole way to evaluate mathematical comprehension; understanding must extend beyond recall (Haryani, 2020). Rich math tasks, meanwhile, integrate procedural fluency, problem-solving, and conceptual knowledge while encouraging collaboration, multiple perspectives, and the construction of representations (SFUSD Mathematics Department, n.d.). Simulation tools, on the other hand, allow students to visualize mathematical concepts through interactive representations, such as rotations, lengths, and light. These tools are found to support academic performance and foster collaborative learning environments.

It is widely accepted that utilizing digital tools in learning and teaching offers many advantages and significantly advances education. Each category of digital tools is designed with education in mind, making them accessible and beneficial to both teachers and students. These resources foster collaboration, communication, and efficient task completion while strengthening teacher-student relationships and enhancing classroom management.

In light of these perspectives, this study aims to determine pre-service mathematics teachers' preparedness in integrating digital math tools and its relationship to selected personal factors. Examining preparedness in this context offers valuable insights into how teacher education programs can better equip future mathematics educators to integrate digital tools in ways that promote critical thinking, digital skills, and 21st-century competencies.

Objectives

This study determined how prepared are pre-service mathematics teachers in incorporating digital math tools and its correlation on their profile. Specifically, the study achieved the followings objectives:

1. Determine the pre-service mathematics teachers' profile in terms of:
 - 1.1. Sex;
 - 1.2. Year level; and
 - 1.3. Socio-economic status.
2. Ascertain the pre-service mathematics teacher's preparedness in incorporating digital math tools relative to:
 - 2.1 Open Math Task;
 - 2.2 Rich Math Task; and
 - 2.3 Simulation Tools.
3. Determine the significant relationship between the pre-service mathematics teachers' profile and preparedness in incorporating digital math tools.
4. Suggest activities to enhance respondents' preparedness in incorporating digital math tools.

Theoretical Framework

The researchers used the Instrumentation Theory of John Dewey as the basis for this study. It was a theory that talked about the interplay between tools and understanding. Learning tools were an important aspect of learning to improve students' understanding and skills. They served as an intermediary between a student's cognition and the phenomenon being studied or between the learning context and the student's learning activity. The way learning tools shaped learning activities and pre-service teachers' perceptions was explained in a theory called instrumentation theory. This theory described the interaction between the cognitive user schema and the tools used to develop the schema. The central assertion of this theory was that tool limitations shaped a user's cognitive schema, while a user's pre-existing cognitive schema influenced how the tool was used. In this study, the instrumentation theory referred to the concept of an instrumental approach. It described the interaction between tool use and the user's cognitive development in a learning context or based on their academic performance. The interaction could generally be expressed by arguing that the user's knowledge shaped the use of the tool and that the limitations and possibilities within the tool simultaneously reshaped the user's cognitive development. As such, intentionally designed tools could lead to the cognitive development of their intended users.

Methodology

Research Design

A descriptive-correlational design was used in the study as it was appropriate for addressing the research objectives and questions. Numerous research techniques could be employed in a descriptive research design to examine one or more variables. On the other hand, correlation studies were quantitative, non-experimental designs that looked at two variables in an effort to find a statistically meaningful relationship between them. The goal of correlational research was to identify variables that were related to one another to the degree that a change in one led to a change in the other (Saini, 2013).

The descriptive-correlational design was used in the study to provide a static picture of the situation and establish relationships between the pre-service mathematics teachers profile and their preparedness in incorporating digital math tools.

Respondents

The population of this study consisted of 113 pre-service mathematics teachers at Batangas State University, The National Engineering University JPLPC Malvar. The Raosoft sample size calculator, a widely used tool in survey research for determining adequate and representative samples (Raosoft, 2004), was used to identify the required number of respondents. With a 95% confidence level and a 5% margin of error, the calculator recommended 88 participants, which became the study sample.

A stratified random sampling technique was applied to ensure fair representation (Nguyen et al., 2021). The population was divided into subgroups based on their major specialization, and participants were randomly selected from each group. This method ensured balanced representation of the different specializations within the 88 respondents.

Data Gathering Tool

The researcher designed a questionnaire that was used in the study to collect the data required to determine how prepared participants were to incorporate digital math tools. The information from the various pieces of reviewed literature served as the foundation for the instrument's content.

The research questionnaire had two parts, the first part revealed the respondents' profile that includes sex, year level, and socioeconomic profile. The second component assessed how prepared pre-service students were to include three different types of digital math tools: open math tasks, rich math tasks, and simulation tools.

The researcher made instrument was validated by experts who are mathematics education faculty members. A pilot test on 30 pre-service teachers gave a Cronbach's alpha of 0.87, indicating internal consistency to be good.

The following mean ranges and their corresponding interpretations were used to calculate the mean and standard deviation in order to assess the respondent's level of preparedness for incorporating digital math tools.

Scale	Mean Ranges	Verbal Interpretation
4	3.51 - 4.00	Highly Prepared
3	2.51 - 3.50	Moderately Prepared
2	1.51- 2.50	Slightly Prepared
1	1.00 -1.50	Least Prepared

Data Collection Procedure and Treatment

After the research paper was approved, the researchers compiled pertinent data that enabled them to clearly express their own opinions about the study. The process of data gathering started with the development of a questionnaire, followed by adjusting instruments to ensure that the questions were appropriate for the topic at hand and that the questions' order was accurate.

The Dean of the College of Teacher Education received a letter requesting authorization to conduct and deliver a survey created by the researcher to the intended respondents.

After the approval, the researchers used email or messenger to send the respondents a Google Form-based questionnaire. The responders provided responses to all of the questions. The respondents filled out the Google Form and then submitted their response to allow the researchers to obtain the data.

The study's findings and suggestions were derived from data collected from completed questionnaires that were verified, processed, and tabulated.

Results

The collected data were analyzed to create and demonstrate the tables below. These are intended to point out and clarify the findings in accordance with the study's objectives. They provide the findings in an organized and easily comprehensible manner.

1. Respondents' Profile

1.1 Sex

Table 1 shows that the majority of responses were female. This difference in numbers may be attributed to the low presence of men in the profession, which is from preconceived notions and cultural perceptions of the loving and caring profession of teaching.

According to a study conducted by Gjøvik et al. (2023), which identifies differences in gender in the teaching profession, indicates that there are more female math teachers than male math teachers. There are a number of social, cultural, and historical factors that contribute to this gender gap. It looked at how the distribution of male and female teachers is influenced by professional expectations, educational orientations, and social norms.

Table 1 Distribution of the Respondents' Profile in Terms of Sex

Sex	Frequency	Percentage
Male	13	15
Female	75	85
Total	88	100

1.2 Year Level

The year levels in which most of the respondents were from the first, second, and third years can be seen in Table 2. It shows that in the three years since the pandemic started, a large number of new students have indicated an interest in becoming teachers despite the difficulties that education is currently facing. It could be that they understood the significance of educators in this pandemic and the anticipated rise in demand for math instructors in the coming years.

The data also revealed that there were differences in the reasons why students chose to pursue teaching, depending on the year level. Fourth-year students were more likely to pursue teaching because they were passionate about it, whereas first- and third-year students were more likely to do so due to their interest in math.

Table 2 Distribution of the Respondents' Profile in Terms of Year Level

Year Level	Frequency	Percentage
First Year	28	32
Second Year	21	24
Third Year	28	32
Fourth Year	11	13
Total	88	100

1.3 Socioeconomic status

Table 3 shows socioeconomic status based on their monthly income classified as middle class, lower middle class, and lower class wherein most of the respondents are mostly in their lower class. This outcome ascertains that the respondents' families are still having a hard time sufficiently responding to their daily needs after 3 years of the start of the pandemic.

According to Fallesen (2021), The COVID-19 had a major effect on rural livelihoods. For people who depended on these sectors, lockdowns, travel restrictions, and decreased economic activity resulted in layoffs and decreased incomes, thus many families experienced financial difficulties.

Table 3 Distribution of the Respondents' Profile in Terms of Socioeconomic Status

Socioeconomic Status	Frequency	Percentage
Middle Class	19	21
Lower Middle Class	36	41
Lower Class	33	38
Total	88	100

2. Preparedness of Pre-service Mathematics Teachers in Incorporating Digital Math Tools

This part of the study assessed how prepared the respondents are in incorporating digital math tools in terms of Open Math Task, Rich Math Task and Simulation Tools. These are found on the succeeding tables.

2.1 Open-Math Task

This part of the study determined how prepared the respondents are in incorporating digital math tools in terms of Open Math Task. It shows the calculated standard deviation and mean for every indicator along with an interpretation for each.

Table 4 Preparedness of Pre-Service Teacher in Incorporating Digital Math Tools in terms of Open Math Task

Indicators	Mean	Standard Deviation	Descriptive Interpretation
		n	
1. Explaining ideas in several ways using equations and graphs	3.30	0.63	Moderately Prepared
2. Incorporating online learning activities which help to solve problems in different ways	3.36	0.57	Moderately Prepared
3. Utilizing different methods or approaches to solve challenges and find solutions.	3.47	0.64	Moderately Prepared
4. Creating open-ended questions online that helps students to use a deeper level of math thinking.	3.30	0.63	Moderately Prepared
5. Providing sufficient quality answers to various problems.	3.36	0.61	Moderately Prepared
Overall	3.36	0.62	Moderately Prepared

In Table 4, respondents' preparedness to use digital math tools for open math tasks is shown. The average score of 3.47 with a standard deviation of 0.64 indicates that respondents consistently utilize these tools effectively, particularly for solving problems with multiple solutions or requiring diverse approaches. This aligns with findings from Aggarwal (2020), highlighting the usefulness of ICT in enhancing higher-order thinking skills and student interest in learning Mathematics, making problem recognition and analysis easier.

However, when it comes to explaining concepts through equations and graphs and creating open-ended questions, respondents scored lower, with means of 3.30 and standard deviations 0.61. This suggests that respondents may face challenges in formulating open-ended tasks and interpreting various graphical and mathematical representations, which resonates with Wolff's (2021) observation that open-ended problems can be more challenging to evaluate consistently.

Overall, respondents' preparedness for integrating digital math tools into open math tasks yielded an average score of 3.36. This indicates that pre-service math teachers may still be in the process of developing their growth mindset and higher-order thinking abilities, as suggested by Wang et al., (2018) study, which found that employing computer-based methods for problem-solving improved prospective teachers' higher-order thinking skills and motivation, albeit with modest enhancements in communication and problem-solving capacities.

2.2 Rich Math Task

This part of the study determined how prepared the respondents are in incorporating digital math tools in terms of the Rich Math Task. It reveals the computed mean and standard deviation for each indicator with its corresponding interpretation.

Table 5 Preparedness of Pre-Service Teacher in Incorporating Digital Math Tools in terms of Rich Math Task

Indicators	Mean	Standard Deviation	Descriptive Interpretation
1. Creating online interactive learning activities that give students the chance to communicate with one another, to the instructor, and to the course content.	3.49	0.61	Moderately Prepared
2. Preparing exercises that will encourage cooperation between students.	3.58	0.60	Highly Prepared
3. Giving interactive learning activities where students can collaborate by group.	3.51	0.66	Highly Prepared
4. Improving the imagination and interest of the students in math concepts through group collaboration	3.48	0.64	Moderately Prepared
5. Making complex problems where students proactively exchange information with other group members.	3.43	0.60	Moderately Prepared
Overall	3.50	0.62	Moderately Prepared

Table 5 reveals how ready the respondents are to use digital math tools for Rich math tasks. They scored the highest mean of 3.58 with a standard deviation of 0.60, showing their consistent readiness to assign exercises that promote teamwork among students. This indicates that respondents actively prepare exercises that encourage participation and collaboration in the classroom. Sanmas et al. (2023) asserts that the use of digital tools can improve teamwork and alter the relationship between learners and teachers. These technologies foster critical thinking, creativity, and communication while also fostering digital responsibility, entrepreneurship, and problem-solving abilities.

With an average score of 3.50 and a standard deviation of 0.62, the respondents' overall level of preparedness shows that pre-service math teachers have the capability of integrating digital math tools into their lessons, especially for rich math assignments. This implies that if they are prepared, they can create a more engaging and cooperative learning environment during talks.

According to Oyedele (2017), technological tools have a positive impact on motivational factors influencing mathematics studies, while Zhong (2021) emphasized that classroom collaboration leads to greater autonomous learning, improved understanding of mathematical concepts, increased assistance among peers, more exercises and problem-solving, and an overall enjoyable learning experience.

2.3 Simulation Tools

This part of the study determined how prepared the respondents are in incorporating digital math tools in terms of Simulation Tools. It reveals the computed mean and standard deviation for each indicator with its corresponding interpretation.

Table 6 shows the preparedness of respondents in using digital math tools in terms of Simulation Tools. With a mean of 3.56 and standard deviations of 0.60, the respondents show that the students are prepared applying mathematics problems into real world representation. It signifies that the preservice teachers prefer applying and integrating mathematics activity using digital math tools, specifically simulation tools in real life scenarios.

Table 6 Preparedness of Pre-Service Teacher in Incorporating Digital Math Tools in terms of Simulation Tools

Indicators	Mean	Standard Deviation	Descriptive Interpretation
1. Familiarizing with at least one digital math tool that uses visual representations.	3.48	0.61	Moderately Prepared
2. Applying mathematics problems into real world representation.	3.56	0.60	Highly Prepared
3. Creating graphs in online tools using different formulas.	3.15	0.74	Moderately Prepared
4. Making visualizations of different topics using digital tools.	3.42	0.69	Moderately Prepared
5. Criticizing correct and incorrect visual representations present in online tools	3.33	0.62	Moderately Prepared
Overall	3.39	0.65	Moderately Prepared

Arthur et al. (2018) argue that relating mathematical ideas to real-world situations will improve students' understanding of the subject. Students' interest in mathematics will be ignited by their understanding of the close connection between theory and practice, which will also lay the groundwork for their future application of mathematics in practical settings. Also, Scharaldi (2020) states that one of the factors that helps students connect math concepts in the real world is technology that can be utilized by educators to demonstrate to students the practical applications of concepts they are learning in math and STEM classes.

Statement number 3 received the lowest mean scores, 3.15, with a 0.74 standard deviation. Respondents frequently struggle in utilizing digital math tools to create graphs in online tools. Although it may have the lowest mean, that doesn't change the fact that the students can still handle it.

According to the study of Leong & Parrot (2017), students who use graphing calculators have a better attitude toward solving mathematical problems. Bahtaji, (2020). states that even students' understanding of graphs can increase after a targeted intervention, students did not improve in transferring this skill to various task contexts.

With an average score of 3.39 and a standard deviation of 0.65, the respondents' overall level of preparedness indicates that pre-service math teachers have received sufficient training to use digital math tools in their classrooms, especially simulation tools. They could promote the creation of fresh digital tools that will facilitate the production of figures and graphs.

3. Relationship between the Respondents' Profile and their preparedness in Incorporating Digital Math tools

Table 7 displays the decision along with the corresponding interpretations, as well as a comparison between the calculated Chi-Square values and their P values.

Table 7 Relationship between Profile and Preparedness in Incorporating Digital Math Tools

Variables	Computed χ^2	P Value	Decision (H_0)	Interpretation
Sex and Preparedness in Incorporating Digital Math Tools	1.931	0.381	Fail to Reject	Not Significant
Year Level and Preparedness in Incorporating Digital Math Tools	36.297	0.000	Reject	Significant
Socioeconomic Status and Preparedness in Incorporating Digital Math Tools	27.482	0.000	Reject	Significant

The table shows that the profile of the respondents in terms of sex was correlated to their preparedness in incorporating digital math tools with the computed Chi-Square value of 1.931 which is meaningful at the level of $p>0.05$. This implies that the null hypothesis is failed to reject, confirming that there is no significant relationship that exists between the respondents' sex and their Preparedness in Incorporating Digital Math Tools.

This finding shows that the male and female pre-service mathematics teachers who participated in the study showed comparable degrees of preparation or ability when it came to integrating digital math resources into their teaching methods. It suggests that other elements

or variables may have a greater impact on a person's preparation or talents in this particular area than their gender and may determine their capacity to effectively use digital math tools. In other words, it doesn't seem that a person's ability to use these tools for mathematics teaching depends on whether they are male or female.

The second variable, correlation of year level to their Preparedness in Incorporating Digital Math Tools. The computed Chi-square is 36.297 at the level of $p<0.05$. This results in the rejection of the null hypothesis, therefore, there is a significant relationship between the respondents' year level and their Preparedness in Incorporating Digital Math Tools.

According to Staddon's (2020) research, older students use technology less regularly and less frequently than younger students, but they have been using it for a long time. Perry et al. (2018) stated that grade expectation shows where pupils have been and where they are headed. They aid teachers in maintaining their focus so that they don't suffer from choice fatigue due to the pupils' increasing access to tech tools and apps.

The last variable correlated with Preparedness in Incorporating Digital Math Tools is the Socio-economic Status of the respondents. The computed value of Chi-square is 27.482 at the level of $p<.05$. This confirms the rejection of null hypothesis. Implying that there is a significant relationship exists between the Socio-economic Status of the respondents and their Preparedness in Incorporating Digital Math Tools.

Based on the research findings of Katz (2019), there is a digital gap between some segments of society that does not seem to shrink in the era of technological advancements. Children who were raised in a family with low social status are more likely to have a lower level of digital literacy. At the same time, an increase in the annual family income does not significantly increase the odds that children will become more interested in the feasible use of ICT.

4. Suggested activities to enhance respondents' preparedness in incorporating digital math tools.

This includes the suggested activities that the researchers believe can help pre-service teachers in integrating digital math tools into their lessons. The proposed activities were also based on the collected data and the results of the survey.

Table 8 Suggested Activities to Enhance Respondents' Preparedness in Incorporating Digital Math Tools

Activity: Think-Connect-Share

Purpose: This activity will enhance students' critical thinking, engagement, and participation in class collaboration by using a particular digital math tool. It makes traditional math instruction more interactive and focused on working in groups.

Description:

1. The class will be divided into small groups to begin the activity. A set of collaborative math problems will be given to each group.
2. Students will access the digital math tool in their groups and begin working on the given problems. They can communicate ideas by texting, drawing, or chatting on the digital tool.
3. After the groups have solved the problems, instruct them on how to use the digital tool for a critical thinking discussion.
4. Gather again the class and request that each group present one interesting idea or conclusion from their critical thinking exercise.
5. Students may be asked to reflect on how the group project has improved their problem-solving skills and what they have learned from other students.

Activity: You Think

Purpose: This activity will guarantee that each student is given assignments that are suitable for their level of ability and fosters peer cooperation and knowledge exchange. Using digital math tools makes for a more effective and engaging mathematical learning experience.

Description:

1. Teachers will create a problem bank with various math topics and difficulty levels. They will assist in selecting appropriate topics, tracking progress and providing support.
2. Teachers will evaluate students' math proficiency individually. Students are guaranteed to be working on assignments that align with their current skill level and learning requirements through this individualized approach.
3. Once students receive their assignments, they will work through problems step-by-step, applying pertinent ideas to provide precise answers.
4. Teachers will promote peer-to-peer collaboration through online resources to exchange knowledge and techniques. Collaborative learning improves comprehension and develops a sense of teamwork in students.
5. Students must present their solutions once they have solved the problems that have been assigned to them. Students are better able to express their ideas and effectively communicate their mathematical reasoning when they present their solutions.

Discussions

Most of the respondents were first- and third-year students, the majority of which were female and from lower socioeconomic classes. This implies that the mathematical community has a substantial gender gap. There were differences in the motivations behind students' decisions to become teachers based on the year level. It also showed that the respondents' families were still having difficulty meeting their basic needs three years after the pandemic started.

Additionally, the respondents' assessment of their level of preparation for utilizing Rich Math Tasks, Open Math Tasks, and Simulation Tools in the teaching and learning process showed that they are all only moderately prepared, indicating that they are competent with basic technologies. This underscores the overall positive trend in incorporating digital math tools among the evaluated pre-service mathematics teachers.

Importantly, when it came to using digital math tools, there was a significant correlation between the preservice math teachers' socioeconomic status and year level. This relationship can be explained by their age, degree of digital literacy, familiarity with technology, and interest in practical applications of technology, all of which influence how prepared they are to use it to teach and learn mathematics. However, since both sexes were equally adept at incorporating digital math tools into their teaching methods, there was no significant relationship between the respondents' sex and their preparedness in integrating digital math tools.

The study, taken as a whole, highlights how ready pre-service math teachers are to use technology in the classroom. By providing different activities, institutions can enhance the preparedness of pre-service mathematics teachers in incorporating digital math tools in their teaching, leading to a more successful learning environment.

Conclusion and suggestions

In conclusion, the results of this research demonstrate that most of the respondents are female, first to third year students and belong to low class income. Also, Open math tools and simulation tools are used by pre-service math teachers with varying levels of preparation, whereas Rich math tools are used by them with the greatest level of preparation. On the other hand, the respondents' first variable, sex, is not substantially connected to their preparedness to use digital math tools, but the other two factors, year level and socioeconomic position, are significantly associated with the respondents' preparedness to use digital math resources.

In line with the findings mentioned above the researcher recommends the following: Pre-service teachers have the capability to facilitate group and collaborative activities using tools such as "E-Linear," "CanProveIt," "Raise to Top," and "Board Zone." These activities have the potential to significantly augment the knowledge and skills of their future students through collaborative learning experiences with their peers and classmates.

As the world of educational technology is always changing and developing, pre-service teachers need to stay up to date with the newest digital math tools and technologies. Keeping up to current with these developments is essential for success in the teaching profession.

Since technology is advancing in the twenty-first century and can help pre-service teachers enhance learning, prevent learning loss, and create opportunities for the teaching and learning process, the department may decide to establish a policy integrating digital tools into the classroom.

This work broadens the researchers collective knowledge, and future researchers might use it as a springboard for their own investigations. Your contributions may be essential to extending our understanding even farther. especially when they integrate digital math resources into a pertinent and related subject.

New knowledge and the effects on society and communities

The results of a recent study provide insight into how prepared educators are to integrate technology into the process of teaching and learning. According to the study, pre-service teachers have a moderate level of proficiency when it comes to using websites and applications that provide real-world math situations with multiple approaches, solutions, and representations. These situations are presented to students in the form of word problems. Additionally, they have a moderate level of preparation for assignments that encourage rigor, teamwork, and conceptual thinking as well as for applications that let students observe how a simulation behaves without actually controlling it.

The society will be greatly impacted by these findings, particularly in the fields of education and self-improvement. Acknowledging pre-service teachers' readiness can lead to the creation of programs to solve issues that may arise when using digital math tools in the classroom. This study functioned as a link to improve student instruction, which benefited society and administration.

Furthermore, it provided information about the early attitudes of respondents towards integrating technology in mathematics instruction. Technology was incorporated into math classes to support students' independent and meaningful learning of mathematical concepts. The study was also important and proved to be very helpful in the math classroom since it let teachers know what kinds of learning tools were required to improve the pre-service teachers' academic performance. Future educators gained from the study as it helped them design effective collaborative learning experiences that encouraged problem-solving and flexible thinking. This served as a gateway for continuing to shape students' futures with a top-notch education.

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Demand for Chinese-Speaking Staff in Luang Prabang's Hospitality Sector: Trends, Challenges, and Workforce Implications

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Abstract

The rapid growth of Chinese outbound tourism has significantly impacted the hospitality industry in Southeast Asia, particularly in Luang Prabang, Laos a UNESCO World Heritage Site renowned for its cultural and natural attractions. This study investigates the increasing demand for Chinese-speaking staff in Luang Prabang's guesthouse and hotel sector, driven by the rising influx of Chinese tourists. Using a mixed-methods approach, the research combines qualitative interviews with hospitality stakeholders and quantitative surveys of Chinese-speaking tourists to analyze trends, challenges, and implications for the local workforce. Findings reveal a substantial demand for bilingual staff, with hotel and guesthouse managers emphasizing the importance of Chinese-speaking employees in enhancing customer satisfaction and service quality. However, challenges such as a shortage of qualified candidates, limited access to language training, and financial constraints particularly among smaller establishments hinder the sector's ability to meet this demand. Survey results indicate that a large proportion of Chinese tourists prefer accommodations with Chinese-speaking staff, and their satisfaction levels are significantly higher when served by such employees compared to non-Chinese-speaking staff. The study highlights the critical role of language proficiency in improving guest experiences and fostering repeat business. It also underscores the need for workforce development initiatives, including government-supported language training programs and partnerships with educational institutions, to address staffing shortages. The findings align with global tourism trends that increasingly prioritize multilingual staff to cater to international travelers. Overall, this research provides valuable insights for policymakers and industry practitioners, emphasizing the importance of adapting to the linguistic and cultural needs of a diverse clientele to ensure the sustainable growth of Luang Prabang's tourism sector.

Keywords: Chinese speaking staff, Accommodation service sector

Introduction

The global tourism industry has undergone rapid transformations in recent decades, influenced by factors such as emerging markets, changing travel patterns, and economic growth in previously underrepresented regions. In particular, the rise of Chinese tourists has reshaped tourism industries around the world. For countries in Southeast Asia, including Laos, the influx of Chinese-speaking tourists has significantly impacted local tourism infrastructure and business operations. One city that has been particularly affected by this development is Luang Prabang, a UNESCO World Heritage site located in northern Laos. Known for its stunning natural landscapes, rich cultural history, and vibrant religious traditions, Luang Prabang has become an increasingly popular destination for international tourists, especially from China (Tourism Development Department of Laos, 2021). It affected the demand for skilled Chinese-speaking staff in the local hospitality sector, specifically in guesthouses and hotels, has risen considerably.

Over the past decade, Luang Prabang has experienced substantial growth in tourism, driven by its status as a culturally significant destination and its accessibility to international travelers. According to the Ministry of Information, Culture and Tourism of the Lao People's Democratic Republic (2022), tourism is one of the most important sectors contributing to the country's economy, with Chinese visitors being a primary source of revenue. The popularity of Luang Prabang among Chinese tourists is particularly notable due to its proximity to China, direct flight connections, and the growing interest in the region's history, heritage, and natural beauty. This influx of Chinese visitors has created a pressing need for the tourism and hospitality industry in Luang Prabang to adapt to the linguistic and cultural preferences of this market.

The shift toward bilingual staff reflects a broader cultural exchange between Laos and China. Tourism brings economic benefits, but it also promotes cross-cultural understanding and interaction. In Luang Prabang, Chinese-speaking employees act as cultural intermediaries. They help with communication and promote a positive image of Laos to Chinese visitors. This interaction enhances the tourism experience and ensures that the local community benefits from the growing number of Chinese tourists.

However, several questions remain regarding the demand for Chinese-speaking staff in Luang Prabang's guesthouse and hotel sector. Will the supply of qualified Chinese-speaking workers be sufficient to meet this demand? What challenges do guesthouses and hotels face in employing multilingual staff? How satisfied are tourists with Chinese-speaking employees? Do Chinese tourists prefer accommodations with Chinese-speaking staff? These questions are critical for understanding the future trajectory of Luang Prabang's tourism industry and its ability to adapt to evolving market needs.

This study aims to explore the Demand for Chinese-Speaking Staff in Luang Prabang's Hospitality Sector: Trends, Challenges, and Workforce Implications. By examining the factors driving this demand, the challenges faced by hotels and guesthouse owners, and the implications for the local workforce, this research seeks to provide valuable insights into the intersection of language, tourism, and hospitality in Laos. The findings will offer a better understanding of how the tourism industry in Luang Prabang is responding to the growing presence of Chinese tourists and contribute to ongoing discussions about workforce development in the hospitality sector.

Methodology

The purpose of this study is to explore the trends in the demand for Chinese-speaking staff within the guesthouse and hotel services sector in Luang Prabang. Given the growing number of Chinese-speaking tourists visiting the city, it is essential to understand how the hospitality industry has adapted to meet their needs. The methodology employed in this research combines qualitative and quantitative methods to provide a deeper analysis of the demand for Chinese-speaking employees, the challenges faced by the hospitality sector, and the impact of this trend on the local workforce.

Research Design

This study follows a mixed-methods research design, combining both qualitative and quantitative approaches to gather a wide range of data. The qualitative component aims to understand the experiences and perceptions of hospitality industry stakeholders, including hotel managers, guesthouse owners, and employees. The quantitative component involves the collection of statistical data on the number of Chinese-speaking tourists, the staffing needs of hospitality establishments, and language proficiency levels among local workers.

By using both approaches, the study seeks to present a holistic picture of the current demand for Chinese-speaking staff in Luang Prabang's hospitality sector. This design allows for both depth and breadth in data collection, offering insights into both the individual experiences of industry participants and broader trends across the city.

Sampling and Participants

Specifically, the target population consisted of:

- Hotel and guesthouse managers who oversee operations and staffing decisions.
- Front-line employees such as receptionists who interact directly with guests.
- Chinese tourists who came to travel in Luangprabang.

The study employs purposive sampling of 10 large hotels and 10 small to medium guesthouses located in Luang Prabang. Within this purposive sampling framework, random selection was applied to ensure unbiased representation within each category. After identifying establishments that met the study criteria, the final participants were randomly selected from each group. This approach helped minimize selection bias and enhanced the reliability of the findings by giving all eligible establishments an equal chance of being included in the study.

Sample group

The sample size for the qualitative interviews consisted of 40 participants, including managers of 10 large hotels, managers of 10 small- to medium-sized guesthouses, and 20 employees who were working in these hotels and guesthouses.

The sample for the quantitative survey consisted of 100 Chinese tourists who met the researchers and were willing to complete the questionnaire during a one-week data collection period. These participants were encountered at various tourist sites and accommodations across the city. They were approached without prior appointments and were selected through chance encounters. This method ensured a diverse range of perspectives regarding service quality and language accessibility.

Tools to Collect Data

Qualitative data were collected using an interview form. The form included open-ended questions focusing on the following areas:

- The current demand for Chinese-speaking staff in the hospitality sector.
- Challenges faced by employers in hiring and training Chinese-speaking personnel.
- The impact of Chinese-speaking staff on customer satisfaction and service quality.
- The perceived future demand for Chinese-speaking staff in the sector.

Quantitative data were collected through a questionnaire that included yes/no responses, as well as some questions that used a Likert scale (1–5) from extremely unsatisfied to extremely satisfied, respectively) to measure satisfaction. The questionnaire focused on the following:

- Whether the tourist preferred to be served by Chinese-speaking staff.
- The perceived quality of communication with non-Chinese-speaking staff.
- The level of satisfaction with services based on language assistance.
- The frequency of encountering language barriers during their stay.

Additionally, hotel and guesthouse managers were asked to complete a brief survey to collect data on their current staffing levels, language skills of their employees, and the frequency with which Chinese-speaking tourists visit their establishments.

To ensure the reliability and validity of the research instruments, the questionnaire was carefully developed and refined through a pre-testing process. A pilot test involving 10 Chinese tourists and 5 local hospitality staff members was conducted to evaluate the clarity, relevance, and cultural appropriateness of the survey items. Based on their feedback, minor adjustments were made to improve wording and comprehension. The questionnaire was originally designed in English and then translated into Chinese using a back-translation technique to ensure linguistic and conceptual accuracy. To assess internal consistency, Cronbach's alpha was calculated for the main constructs, with all values exceeding 0.70, indicating acceptable reliability. These procedures strengthened the overall validity and reliability of the data collection instruments used in the study.

Data Collection

The qualitative data were gathered through semi-structured interviews with hotel and guesthouse managers, employees. The interviews were conducted in person, face to face. The semi-structured format allowed for flexibility in the interview process, enabling participants to elaborate on their experiences and perceptions while still addressing key research questions.

The quantitative data were gathered through questionnaires handed to guests in hotels or guesthouses, while others were given to tourists walking on the streets near Luang Prabang tourist sites. The questionnaires took 5 to 10 minutes to complete, and they were collected after the tourists had finished.

Data analysis

The qualitative data collected from interviews were transcribed and analyzed using thematic analysis. This method involves identifying recurring themes and patterns in the responses to better understand the experiences and perspectives of the participants. The themes were categorized to address specific research questions related to demand, challenges, and workforce development in the hospitality sector.

Thematic analysis was performed using the following steps:

- Reading through the interview transcripts and survey responses to get an overview of the data.
- Identifying significant statements, phrases, or sections of text that were relevant to the research questions.

- Grouping the codes into overarching themes that represented common experiences or challenges.
- Analyzing the patterns and connections between themes to draw conclusions about the demand for Chinese-speaking staff in Luang Prabang.

The quantitative survey data were analyzed using descriptive statistics to identify patterns and trends in the responses. This included calculating the frequency of responses, the percentage of tourists who prefer Chinese-speaking staff, and the satisfaction levels of tourists with regard to language accessibility.

The data were analyzed using statistical software SPSS Version 22.0 to calculate means, percentages, and frequency distributions. The findings from the tourist surveys were compared with the staffing data from hotels and guesthouses to assess the alignment between demand and supply in terms of Chinese-speaking staff.

Results

The analysis of the data collected from interviews, surveys, and statistical reports revealed significant trends and patterns regarding the demand for Chinese-speaking staff in the guesthouse and hotel services sector in Luang Prabang. These findings offer valuable insights into the current state of the hospitality industry, the language needs of Chinese-speaking tourists, and the challenges faced by local businesses in meeting these demands. This section presents the key results from both the qualitative and quantitative components of the study.

Demand for Chinese-Speaking Staff

Interviews with hotel and guesthouse managers ($n = 20$) revealed that there has been a notable increase in the demand for Chinese-speaking staff in recent years. Most participants (80%) reported that they have observed a steady rise in the number of Chinese-speaking tourists visiting their establishments since the opening of the China-Lao high-speed train in 2021. Many managers noted that Chinese tourists make up a significant portion of their clientele, especially during peak travel seasons such as Chinese New Year and school holidays. Many managers stated that in the past few years, they have noticed that almost 40-50% of their guests have come from China. As a result, they believe that having Chinese-speaking staff is essential to provide a high level of service, as it directly impacts guest satisfaction.

Managers also reported that Chinese-speaking guests are more likely to stay in hotels and guesthouses where staff can communicate in their native language, which improves their overall experience and comfort. Approximately 70% of managers agreed that language barriers often lead to misunderstandings, missed business opportunities, and decreased satisfaction.

Challenges Faced by Employers

The primary challenge identified by managers in hiring local staff was the lack of Chinese-language proficiency among job seekers. In particular, most employees in Luang Prabang's hospitality sector are local Lao citizens with limited Chinese language skills. Managers expressed their difficulty in finding qualified candidates with both fluency in Chinese and experience in hospitality roles. Many guesthouse owners indicated that it was hard to find staff who were fluent in Chinese, especially among the younger generation. Although most of them speak basic English, that is not enough for Chinese guests.

The need for Chinese-speaking employees in guesthouses and hotels is a direct consequence of the increasing number of Chinese tourists seeking personalized services in their native language. Language has long been recognized as a critical component of customer satisfaction in the hospitality industry, as it facilitates better communication, enhances guest experiences, and fosters positive relationships between guests and service providers (Hsu, 2016).

In a competitive tourism market such as Luang Prabang, where guests are accustomed to high standards of service, the ability to communicate in Chinese can be a significant factor in attracting and retaining customers. This trend aligns with broader global patterns in tourism, where service providers in various countries are increasingly prioritizing multilingual staff to meet the demands of international tourists (Li, 2017).

Impact on Service Quality

Despite these challenges, a majority of managers (75%) reported that the addition of Chinese-speaking staff has led to improvements in customer service and satisfaction. Guests who were served by Chinese-speaking staff were more likely to express higher levels of satisfaction with the overall service quality. Managers observed that Chinese-speaking employees helped bridge cultural gaps, facilitated smoother communication, and provided more personalized services, such as assisting with local attractions and guiding tours.

Survey of Chinese-Speaking Tourists

A total of 100 Chinese tourists participated in the survey. The survey aimed to understand their language preferences and satisfaction levels regarding communication with hotel and guesthouse staff.

Of the respondents, 85% reported that they preferred to be served by Chinese-speaking staff, particularly for check-in/check-out procedures, inquiries about local attractions, and booking tours. Among these, 40% stated that they would actively seek out accommodation with Chinese-speaking staff when booking their stay.

Approximately 60% of the tourists indicated that they encountered communication difficulties during their stay, especially when interacting with non-Chinese-speaking staff. Common issues included miscommunication regarding room preferences, payment methods, and directions to local attractions.

Tourists who prefer Chinese-speaking staff rated their overall experience as significantly higher with 80%, compared to those who prefer Chinese or English-speaking staff with 20% (Table 1). Guests who were satisfied and had positive experiences with Chinese-speaking staff had a mean = 4.49 and S.D = 0.70, compared to those who were satisfied and had positive experiences with No matter between non-Chinese or Chinese speaking staff, who had a mean = 3.23 and S.D = 0.75 (Table 2)

Table 1 Guest prefer Chinese speaking staff for service

Topic	Frequency	Percent
Guests Preferred Chinese speaking staff for service	80	80.00
Guests Preferred non-Chinese speaking staff for service	20	20.00
Total	100	100.00

Tourists who prefer Chinese-speaking staff rated their overall experience as significantly higher with 80%, compared to those who prefer Chinese or English-speaking staff with 20%.

Table 2 Guests satisfaction with Chinese speaking staff service

Topic	N	Mean	Standard Deviation	Level
Guests who were Satisfied with service regardless of staff spoke Chinese	100	4.49	0.70	High
Guests who were satisfied with service regardless of whether staff spoke Chinese	100	3.23	0.75	Moderate
Total	100	3.86	0.72	Moderate

Guests who were satisfied and had positive experiences with Chinese- speaking staff had a mean = 4.49, high level and S.D = 0.70, compared to those who were satisfied and had positive experiences with No matter between non-Chinese or Chinese speaking staff, who had a mean = 3.23, moderate level and S.D = 0.75.

Staffing Data from Hotels and Guesthouses

Data collected from 20 hotels and guesthouses in Luang Prabang showed that:

Chinese- Speaking Staff Proportion: On average, only 15% of staff in these establishments were proficient in Chinese. The proportion was higher in larger, more internationalized hotels (up to 30%), but much lower in smaller guesthouses (around 5%).

Tourist Demographics: Among these 20 hotels and guesthouses, 60% of them reported that over 30% of their guests were from China, with 40% of them reporting that more than 50% of their guests came from China during the high season.

Staffing Needs

When asked about future staffing plans, 70% of hotel managers indicated that they intend to increase the number of Chinese- speaking staff over the next few years to meet growing demand. Larger establishments were more likely to invest in professional language courses, while smaller guesthouses were looking for ways to hire bilingual staff directly.

Comparing services and staff spoke Chinese

Subgroup analysis was conducted to examine differences between large hotels and small to medium guesthouses. This comparative analysis provided deeper insights into variations in staffing challenges, language service quality, and customer satisfaction levels across different types of establishments. The results showed that large hotels generally performed at higher levels than smaller guesthouses; however, the quality of Chinese-speaking staff did not differ significantly between the two groups.

Discussions

The findings of this study confirm the rising demand for Chinese-speaking staff in Luang Prabang's guesthouse and hotel services sector. This trend reflects global patterns in the hospitality industry, particularly in regions experiencing an influx of Chinese-speaking tourists. By comparing the results of this study with existing literature, several key themes emerge, including the increasing importance of language proficiency for customer satisfaction, challenges in staffing, and future workforce development needs. This section discusses these findings in relation to other research in the field.

Rising Demand for Chinese-Speaking Staff

The results of this study indicate a significant increase in the demand for Chinese-speaking staff in Luang Prabang, with 75% of hotel and guesthouse managers reporting a need for bilingual employees. This demand is driven by the growing number of Chinese-speaking tourists visiting the city, which aligns with global trends in the tourism industry. According to Li (2017), the increasing middle class in China and the expansion of Chinese outbound tourism have made Chinese tourists a dominant group in global travel. Studies by Goh & Lo (2019) also confirm that countries across Southeast Asia are seeing a surge in Chinese tourism, necessitating the hiring of Chinese-speaking staff in the hospitality sector.

Similarly, in Thailand, a study by Thitiphan & Charoenrat (2018) found that the rapid increase in Chinese tourist arrivals led to a growing demand for Chinese-speaking staff in hotels, particularly in tourist-heavy areas such as Bangkok and Phuket. This suggests that the demand for Chinese-speaking employees in Luang Prabang is part of a broader trend in Southeast Asia, where businesses catering to Chinese-speaking tourists are prioritizing bilingual staff to improve service delivery.

Furthermore, the demand for Chinese-speaking staff in Luang Prabang's hospitality sector reflects wider economic and social trends in the region. China's economic growth has fueled a surge in outbound tourism and the expansion of Chinese-speaking communities abroad. In Luang Prabang, the growing number of Chinese tourists creates a need for a workforce that can meet their linguistic expectations. Guesthouses and hotels are especially affected, as smaller establishments often depend on local staff with limited access to formal language training. As a result, having Chinese-speaking employees is becoming essential for businesses that want to stay competitive in the expanding tourism market. (Goethals, 2016)

Beyond the practical staffing needs, the rise in Chinese-speaking employees in Luang Prabang has wider effects on the local workforce and community. The demand for bilingual staff creates both opportunities and challenges for local workers. It influences employment prospects, language learning, and professional development. As the hospitality sector continues to grow, there is a stronger need for training programs that help local employees develop the language skills required to serve Chinese tourists effectively. These initiatives can bridge communication gaps between local workers and international guests. They also improve service quality and support the professional growth of individuals in the tourism industry. (Goh & Lo, 2019).

Challenges in Staffing and Training

Despite the growing demand for Chinese-speaking staff, the study revealed significant challenges related to staffing. Approximately 70% of hotel and guesthouse managers cited difficulties in finding qualified candidates with fluency in Chinese. This shortage of bilingual employees is a challenge not only in Luang Prabang but also in other tourist destinations. In Vietnam, Nguyen (2020) highlighted similar staffing shortages in the hospitality industry,

particularly in regions that attract large numbers of Chinese tourists. Similarly, in Singapore, a study by Adam (2019) found that the hospitality sector was struggling to meet the language needs of Chinese-speaking visitors due to a lack of skilled bilingual workers.

The lack of available candidates with both Chinese language skills and hospitality experience is a challenge identified in multiple studies. According to Hsu (2016), language skills alone are not sufficient; hospitality workers must also possess the necessary customer service skills to meet the expectations of international tourists. In Luang Prabang, this dual skillset is particularly difficult to find. As highlighted by Goh & Lo (2019), while many local workers have basic English language skills, proficiency in Chinese is relatively rare. This gap is exacerbated by the cost of language training programs. The study found that 30% of hotels and guesthouses offered language training to staff, but the cost of such training was a barrier, particularly for smaller businesses.

This challenge is further documented by Gross et al. (2013), who noted that while larger hotel chains in China have been able to invest in language training programs, smaller independent hotels in countries like Laos and Vietnam often lack the resources to do so. This disparity in resources contributes to uneven language competency in the hospitality sector.

Language and Customer Satisfaction

A key finding of this research was the positive correlation between the availability of Chinese-speaking staff and customer satisfaction. Tourists who interacted with Chinese-speaking employees rated their overall experience significantly higher than those who did not. This finding is consistent with research by Li (2017), who found that language barriers negatively impacted the service quality and satisfaction of Chinese tourists in Southeast Asia. Similarly, a study by Hanqiu & Silin (2024) in Cambodia revealed that Chinese-speaking tourists expressed higher satisfaction levels when interacting with staff who could communicate in their native language, especially for personalized services and information about local attractions.

The importance of language proficiency in enhancing guest experiences is also emphasized by Hsu (2016), who argues that language is a crucial factor in shaping tourists' perceptions of service quality. In a similar vein, the findings of Lee & Chang (2018) in Taiwan revealed that multilingual staff, especially those fluent in Chinese, were able to provide higher levels of service, leading to greater customer loyalty. The positive impact of Chinese-speaking employees on customer satisfaction in Luang Prabang reflects these global patterns and highlights the importance of language proficiency in fostering positive guest experiences.

Moreover, a study by Cheng & Mak (2020) and Chen et al. (2021) on the hospitality industry in Macau found that the integration of Chinese-speaking staff into hotel operations was linked to increased guest retention rates, as tourists from Chinese-speaking regions felt more comfortable and valued. This aligns with the findings in Luang Prabang, where managers indicated that Chinese-speaking staff helped build trust with Chinese guests and fostered repeat business.

Future Trends and Workforce Development

Looking to the future, this study found that 70% of hotel and guesthouse managers in Luang Prabang plan to hire more Chinese-speaking staff in the coming years. This proactive approach to workforce development reflects the growing recognition of the need to address the language gap in the hospitality sector. A similar trend was observed in a study by Jang & Lee (2017) in South Korea, where hotels in Seoul were increasingly focused on hiring multilingual staff to accommodate the growing number of Chinese tourists. Similarly, a report by the Pacific Asia Travel Association (2019) highlighted the need for Southeast Asian countries to invest in multilingual workforce training to meet the demands of Chinese-speaking tourists.

In Luang Prabang, businesses are also exploring partnerships with local language schools to provide language training for existing employees. This trend is in line with research by Goh & Lo (2019), who emphasized the importance of continuous skill development and cross-cultural training to ensure that hospitality workers can effectively serve international tourists. In Singapore, the Singapore Tourism Board (Teo & Cacciafoco, 2022) has implemented initiatives to support language training for tourism workers, particularly in response to the increase in Chinese tourist arrivals. These types of programs could provide valuable models for workforce development in Luang Prabang.

Implications for Policy and Practice

The findings of this study have important implications for both the hospitality industry and tourism policy in Laos. Given the increasing demand for Chinese-speaking staff and the challenges associated with staffing and training, there is a need for targeted policy interventions. These could include government-funded language training programs and initiatives to encourage private sector investment in workforce development. Such an approach has been successfully implemented in Thailand, where the government has supported language training for hospitality workers to meet the needs of international tourists (Thitiphan & Charoenrat, 2018). Furthermore, local educational institutions could collaborate with the tourism industry to offer tailored language courses that meet the specific needs of hospitality workers in Luang Prabang.

Conclusion and suggestions

The findings confirm that the rising influx of Chinese-speaking tourists in Luang Prabang has created significant demand for bilingual employees, particularly in the context of providing enhanced customer service. The study revealed that the demand for Chinese-speaking staff is driven by the need for effective communication and personalized service, which are crucial in improving customer satisfaction and fostering repeat business.

While the demand for Chinese-speaking staff is clear, the research also highlighted several challenges faced by businesses in Luang Prabang. These include difficulties in finding qualified candidates, the high cost of language training, and the limited availability of language courses for local workers. The shortage of skilled bilingual staff reflects broader trends observed in other Southeast Asian countries, where the growing number of Chinese-speaking tourists has outpaced the availability of qualified workers. Smaller establishments, in particular, face financial constraints that prevent them from providing language training programs to their staff, which hinders their ability to fully capitalize on the growing Chinese tourist market.

Despite these challenges, the findings suggest that businesses in Luang Prabang are aware of the importance of addressing the language gap and are increasingly prioritizing the hiring of bilingual employees. This trend is supported by the positive correlation between the presence of Chinese-speaking staff and higher customer satisfaction ratings, with Chinese-speaking tourists reporting better experiences when they are able to interact with staff who speak their language. The research also indicated that hotel and guesthouse managers are planning to invest in the recruitment and training of more bilingual staff to meet the growing demand in the coming years, signaling optimism for future growth in the sector.

In light of these findings, it is clear that language proficiency, particularly in Chinese, has become a key factor in enhancing the quality of services in the hospitality industry. To address the staffing shortages, businesses in Luang Prabang, especially smaller establishments, would benefit from targeted workforce development programs, including

government-supported language training initiatives. By investing in language skills and staff training, businesses can improve their competitiveness, increase customer satisfaction, and better meet the needs of the evolving tourist market.

Unlike Thailand or Cambodia where tourism industries are more mature, better resourced, and supported by established hospitality training institutions Luang Prabang's hospitality sector remains dominated by small- and medium-sized, often family-run guesthouses. These businesses typically operate with limited financial margins, making it difficult to invest in systematic language training or to attract qualified bilingual personnel. As a result, while the need for Chinese-speaking staff is acute, the local industry's capacity to respond remains constrained by structural and institutional factors unique to Laos's developing economy.

Overall, this research contributes to the understanding of the shifting dynamics in the hospitality sector of Luang Prabang and offers valuable insights for both industry practitioners and policymakers. As the tourism industry continues to evolve, it is essential that the hospitality workforce adapts to the linguistic and cultural needs of a diverse, international customer base. The future of Luang Prabang's tourism sector, and its ability to thrive in an increasingly globalized market, will depend on the successful integration of multilingual staff into the workforce, ensuring that the city remains an attractive and welcoming destination for tourists from around the world.

Limitations

This study has several limitations. Firstly, the study's findings may not be generalizable to all regions in Laos, as it focuses specifically on Luang Prabang. Secondly, because of the small sample size due to the time constraints and availability of participants, the results are indicative only and not necessarily generalizable to the population. There may also be biases in the self-reported data from both tourists and staff, particularly regarding their perceptions of language barriers and satisfaction with services.

New knowledge and the effects on society and communities

This study contributes new knowledge on how language proficiency specifically Chinese-language skills has become a strategic factor in the sustainable development of tourism in smaller, culturally significant destinations like Luang Prabang. It reveals that the demand for Chinese-speaking staff is not only a response to market forces but also a reflection of broader socio-economic and cultural transitions in the community. Unlike in neighboring Thailand or Cambodia, where tourism industries are larger and more commercialized, Luang Prabang's reliance on small, locally owned guesthouses makes language adaptation a community-level challenge rather than a corporate one.

For the wider society, this research underscores the need for policies that balance economic integration with cultural preservation. Government-supported language training, local education partnerships, and heritage-sensitive workforce programs can ensure that linguistic adaptation enhances rather than undermines community identity.

Overall, this new knowledge deepens understanding of how global tourism trends intersect with local livelihoods and cultural sustainability, offering a model for other small heritage cities navigating similar pressures from rising Chinese outbound tourism.

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Secondary School Students' Perceptions about Parent-School Partnership in District Swabi, Pakistan

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Abstract

The study investigates secondary school students' perceptions about parent school partnership in District Swabi. Convenient sampling technique was utilized to obtain information from 90 secondary school students of class 8th, 9th and 10th. Data was analyzed through univariate analysis by frequencies and percentages distributions. The findings indicate that the parent-school partnership is largely reactive rather than proactive. Specifically, two primary patterns emerged: 1) Reactive measures are prevalent. A majority (66.60%) of respondents agreed that teachers send home folders of students' weekly or monthly work for parental review and comments, and 55.50% responded that teachers contact families of students having academic or behavior problems. 2) Proactive measures are lacking: A majority of students reported schools do not provide sufficient information for parents on child development (54.40% No), arrange workshops for parents (52.20% No), or produce information linked to children's success (55.50% No). Furthermore, an overwhelming majority (77.70% No) reported the school does not have an active Parent-Teacher Association (PTA) or similar formal council. The major recommendations focus on the revival and establishment of formal parent-teacher councils, arranging capacity-building programs for parents, and involving parents in school planning and decisions. This study fills a gap by providing context-specific, student-voice evidence from a developing region where parent-school partnership practices often lag global "family engagement" paradigms. It also pinpoints that work review and problem-triggered contact are present, while parent learning opportunities and structured councils are missing, offering a practical baseline for upgrading partnership frameworks.

Keywords: Students' perception, Parent-School partnership, Secondary schools, Parent teacher counsels, Swabi pakistan

Introduction

The study stands from a concept that parent-teacher partnership, or in other term collaboration, refers to the method of teacher and parent's working together for the learning of student so as that students can achieve better outcomes (Davies, 1987). The foundation of the parent-school collaboration is two-way communication between the home and the school. The purpose of parent- school partnerships is to increase parental involvement in educational initiatives and information sharing concerning kids' development. Parent-teacher partnerships are a crucial element of the learning and teaching process, boosting students' learning capacities and teachers' interests, which has a significant impact on educational outcomes, according to a number of studies (Mann & Gilmore, 2021).

Parents are widely recognized as the most important factors in the development and socialization of children, and the home is the primary context that has a significant impact on a child's development. Schools should assist parents in fulfilling their responsibility for the healthy socialization and development of their children. There are several ways to provide information, including parent- teacher conferences, phone calls to parents, social media platforms, and mailing report cards to students' homes. Students who have had good home-school contact are more motivated to attend class, have a better understanding of the rules and regulations, and go regularly. These elements all help children perform better academically (Epstein, 1995; Castro et al., 2020). Students, who are assisted by their parents in selecting school programme that best match the student's interests and parental involvement in education are highly motivated toward school, complete their homework promptly, have a positive attitude toward school, and receive better grades. These students also learn how to set career goals for children and how to enable children to achieve the educational goals (Jiang et al., 2023). One research that evaluated instructors discovered that parent outreach by teachers accelerated students' acquisition of reading and math skills by 40–50 percent. In addition to teacher outreach techniques like face- to- face meetings with parents, sending educational materials to parents to increase their ability to support the education of their children at home, and telephonically contacting parents as needed in the event of any academic or behavioural issues with children at school (Boruah, Phogat & Singh et al., 1995). Existing literature showed that school-home communication, such as face-to-face meetings with parents and sending learning materials to parents to increase their capacity to assist the children in education at home, contributed to a 40% increase in the academic performance of students compared to schools that did not practice this(Al-Obaydi et al., 2022; Chen, 2024). Children's performance is greatly influenced by parents reading to them, as this fosters a better knowledge of language and enhances communication skills, both of which have a beneficial impact on the children's reading success (Gest et al, 2004). Similar to this, reading to kids improves their enthusiasm in reading and their focus in class, which has a positive impact on their academic achievement (Rowe, 1991).

It was further said that it is important to ensure parents' engagement in decision-making at school through PTAs and school management committees (SMCs). Favorably correlated with improved student achievement in school (Ullah & Kiazi, 2022). Studies have also demonstrated a beneficial relationship between parental involvement in school decisions like course curriculum planning and other extracurricular activities and children's academic achievement (Naz et al., 2024; Stojanovska, 2024). However, Batool et al. (2023) found no strong correlation between parental involvement in school decisions, such as attendance at PTA meetings, participation in lesson design, and course finalization, and students' academic success.

Parents and teachers as the primary agents of children's socialization and development. Parent school partnership is one of the most influencing factor of children's academic growth. Effective parent school partnership resulted in positive academic growth and therefore, for the first time in the history of Pakistan the government has emphasis over the home environment along with the school environment to get fruitful results. There are numerous indicators of parent school partnership such as involving parents in decisions making, capacity building of parents, sharing students' progress reports and informing parents about children's problems.

There are current research gaps in Pakistan, including 1) The need for a culturally tailored Family–School Partnership framework that reflects the country's diverse linguistic and social contexts. For example, the Pedagogical Partnership Program at Lahore University of Management Sciences demonstrated how context-sensitive collaboration between students and educators can strengthen engagement and learning, yet similar culturally grounded frameworks are still absent at the school level (Tamim et al., 2023). 2) There is also a lack of integration of parent–school collaboration into teacher preparation and professional development programs. A study from Islamabad highlighted that pre-service teacher programs rarely emphasize collaborative skills or parent engagement, underscoring the need for a formal university–school partnership model to better equip future teachers with the competencies to work effectively with families (Batool, Malik, & Jumani, 2023). Similarly, teachers in Sindh reported that professional development often neglects collaboration and communication training, weakening connections between educators and parents (Ahmed, 2024). 3) There is insufficient rural–urban comparative research linking partnership practices to student outcomes. For instance, a recent study on rural secondary schools in Sindh found that teachers in low-resource areas face significant disparities in support and parental engagement compared to their urban counterparts, revealing how contextual differences directly affect learning outcomes (Muslim et al., 2025). The current study was designed to examine the level and aspects of parent–school partnership in the study area and to put forward policy recommendations for policymakers to create realistic policies for effective parents' school partnership to capacitate students in better academic growth using a mixed-methods approach.

Objectives

1. To critically examine students' perceptions of the mechanisms, strengths, and limitations of parent–school partnerships in District Swabi, Pakistan.
2. To analyze impact of socioeconomic factors such as parental education, family type, gender, and grade on students' perceptions of communication, capacity building, and shared decision making.

Methodology

Research Design

This study employed a quantitative, cross-sectional research design. According to Earl Babbie (1989), taking a cross section of the population is the most appropriate to know the existing phenomenon, problem, attitude, perception, or issue. A structured questionnaire was administered. It included dichotomous Yes/No items on parent–school partnership practices and closed-ended demographic questions. Questionnaire items were drawn from a comprehensive interview schedule developed for this study, which was pretested prior to data collection; based on the pretest, several questions were modified to ensure clarity and to align with the respondents' cultural and perceptual context.

Sampling and Sample Size

Data were collected from 90 secondary school students through simple random selection within a convenience sampling framework.

Validity and Reliability

Questionnaire sheet was pretested for clarity and cultural fit. Item were pretested to refine wording and cultural appropriateness. Lastly, respondent feedback and expert review supported content validity (Haynes et al., 1995). This validation approach ensured the interview items comprehensively represented the construct domain and were relevant to the research objectives.

Internal consistency was assessed for composites built from the dichotomous items using the Kuder–Richardson 20 coefficient (KR-20), which is appropriate for 0/1 indicators and equivalent to α under τ -equivalence; all subscales showed acceptable reliability (KR-20 = .72–.83), exceeding the .70 benchmark for research use (Nunnally & Bernstein, 1994).

Data Collection

For the study purpose a comprehensive interview schedule was developed covering all aspects of the study. Before data collection the interview schedule was pretested to remove any ambiguity and make it relevant to the study objectives. Based on the pretesting of the interview some questions in the interview schedule were modified according to the cultural and perceptual requirements of the respondents

Data Analysis

Data were analyzed using univariate analysis. Percentages and frequency distributions were applied to examine students' perceptions of parent–school partnership.

Ethical Considerations

Prior to data collection, the research protocol, including the use of the questionnaire, was formally reviewed and approved by the equivalent ethical office at the researcher's affiliating institution, Government Degree College. To secure participation, informed consent was obtained from all respondents.

Results

Table 1 represents socio-economic characteristics of respondents. Table 2 illustrates analysis through frequency and percentage distributions regarding respondent's perceptions about parent school partnership.

Table 1 Demographic Characteristics of the Respondents

Class	Frequency	Percentage(%)
8 th	30	33.30
9 th	40	44.40
10 th	20	22.20
Age		
10-15 years	46	51.10
above 15 years	44	48.90
Gender		
Boy	51	56.70
Girl	39	43.30
Family type		
Nuclear Family	50	55.50
Joint Family	40	44.50
Is your father educated		
Yes	52	57.80
No	38	42.20
Is your mother educated		
Yes	54	60.00
No	36	40.00

Table 1 shows that out of 90 respondents, 30 (33.30%) were in 8th grade, 40 (44.40%) in 9th grade, and 20 (22.20%) in 10th grade. A total of 46 respondents (51.10%) were aged 10–15 years, while 44 (48.90%) were above 15 years. Moreover, 51 (56.70%) were male and 39 (43.30%) were female. Regarding family type, 50 respondents (55.50%) belonged to nuclear families, whereas 40 (44.50%) came from joint families. In addition, the fathers of 52 respondents (57.80%) were educated, while those of 38 (42.20%) were not. Similarly, the mothers of 54 respondents (60.00%) were educated, while those of 36 (40.00%) were not.

Table 2 School Provide Information for Parents on Child Development
(n=90)

Statement	Yes (Frequency & Percent)	No (Frequency & Percent)	Key Finding
Your schools provide information for parents on child development	41 (45.60%)	49 (54.40%)	Majority (54.40%) do not provide this information.
Your school conduct workshops for parents on child development	43 (47.80%)	47 (52.20%)	Slight majority (52.20%) do not conduct these workshops.
Your school produces information for families that are linked to children's success in school	40 (44.50%)	50 (55.50%)	Majority (55.50%) do not produce this specific information.
Your schools seek information about children talent	38 (42.30%)	52 (57.70%)	Majority (57.70%) do not seek information about children's talents.
Teachers Sends home folders of student (weekly/ monthly works) for parent review and comment	60 (66.60%)	30 (33.40%)	Significant majority (66.60%) do send home student work folders.
Teachers contacts families of students having academic or behavior problems	50 (55.50%)	40 (44.40%)	Majority (55.50%) do contact families regarding problems.
Your school inform parents on how to assist students with skills they need to improve	38 (42.20%)	52 (57.80%)	Majority (57.80%) do not inform parents on how to assist with skill improvement.
Your school assists families in setting academic goals for students	40 (44.50%)	50 (55.50%)	Majority (55.50%) do not assist families in setting academic goals.
Provides information to families on how to monitor and discuss school work at home	35 (38.80%)	55 (61.20%)	Largest majority (61.20%) do not provide this information.
Your school Schedules regular interactive homework that requires students to demonstrate and discuss with their parents	39 (43.40%)	51 (56.60%)	Majority (56.60%) do not schedule this type of interactive homework.
School has active PTA, PTO or other parent organizations	20 (22.30%)	70 (77.70%)	Overwhelming majority (77.70%) do not have an active parent organization.
School involve parents in school improvement programs	39 (43.30%)	51 (56.70%)	Majority (56.70%) do not involve parents in school improvement programs.
School incorporates inputs from parents in their school plans	44 (48.90%)	46 (51.10%)	Slight majority (51.10%) do not incorporate parent input.

Table 2 shows that out of 90 respondents, 41 (45.60%) reported that their schools provide information for parents on child development, while 49 (54.4%) disagreed. Similarly, 43 (47.80%) stated that workshops are conducted for parents, whereas 47 (52.20%) disagreed. Forty respondents (44.50%) noted that schools produce information linked to children's success, but 50 (55.50%) disagreed. Only 38 (42.30%) indicated that schools seek information about children's talents, compared to 52 (57.70%) who did not.

A majority, 60 (66.60%), agreed that teachers send home folders of students' weekly or monthly work for parental review, while 30 (33.40%) disagreed. More than half, 50 (55.50%), confirmed that teachers contact families regarding academic or behavioral problems, compared to 40 (44.40%) who disagreed. Conversely, only 38 (42.20%) agreed that schools inform parents on how to assist students with needed skills, with 52 (57.30%) disagreeing.

Forty respondents (44.50%) stated that schools assist families in setting academic goals, while 50 (55.50%) disagreed. Similarly, 35 (38.80%) reported that schools provide information on monitoring and discussing schoolwork at home, compared to 55 (61.20%) who disagreed. Thirty-nine (43.40%) indicated that schools schedule interactive homework requiring parental involvement, while 51 (56.60%) disagreed.

Only 20 (22.30%) reported the existence of active parent organizations (PTA/PTO), whereas 70 (77.70%) disagreed. Finally, 44 (48.90%) confirmed that schools incorporate parental input into school plans, and 39 (43.30%) agreed that parents are involved in school improvement programs; however, 46 (51.10%) and 51 (56.70%) disagreed with these statements, respectively.

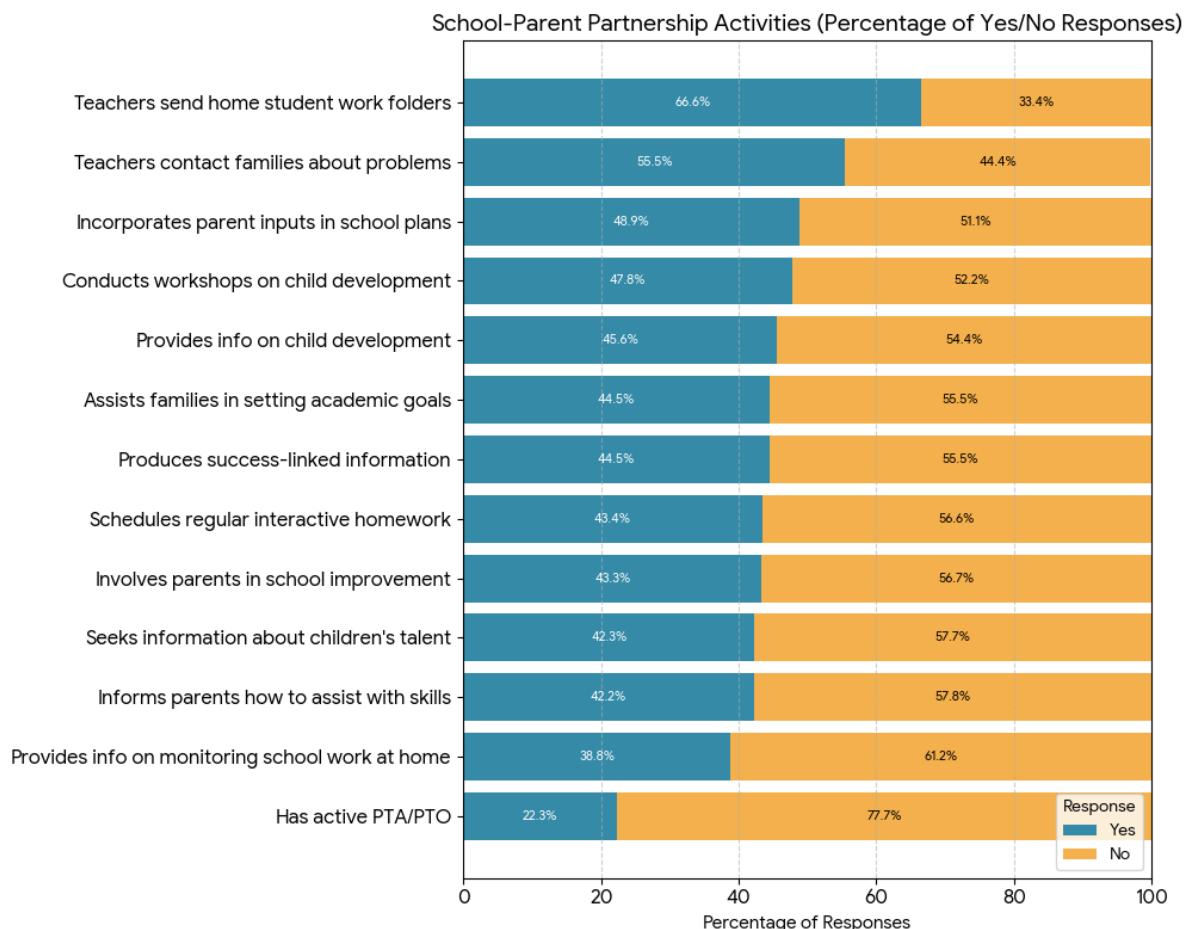


Figure 1 School-Parent Partnership Activities (n=90)

Source: (Author,2025)

Discussions

The results of this study reveal significant associations between socio-economic characteristics of respondents and their perceptions of parent-school partnerships. The findings reveal mixed outcomes: while schools demonstrate some initiatives to involve parents, consistent and structured efforts remain lacking. This discussion interprets the results in light of existing literature on parental involvement and student development.

The demographic profile highlights that most respondents were in the 9th grade, representing a crucial stage of adolescence where academic achievement begins to directly influence future educational opportunities. Approximately half of the respondents were between 10–15 years old, and the rest were above 15, suggesting that perceptions were shaped across different stages of adolescent development. Researches across the world have shown that as children transition through adolescence, parental support and school-family collaboration remain vital for maintaining motivation and performance (Çelik, 2024; Werang et al., 2024; Ngurah, 2024; Hwang, Kieffer & Cappella, 2024; Ashfaq, Malik & Ahmad, 2024; Candel & Escote, 2024).

Gender distribution revealed a slightly higher proportion of boys than girls. This imbalance reflects broader enrollment patterns in many South Asian contexts, where boys often have higher representation in schools (UNESCO, 2022). Family structure was also divided, with a slight majority belonging to nuclear families. Family type has been found to shape the extent of parental engagement: children in nuclear families often receive more direct parental attention, whereas joint families may rely on extended relatives for support, potentially diluting focused involvement in schooling. Parental education emerged as a key variable, with over half of fathers and mothers reported as educated. Educated parents are more likely to participate in school-related activities, monitor academic performance, and communicate with teachers effectively. For example, a 2020 Icelandic study found that more educated parents showed significantly stronger preferences for engaging in both academic and social school activities, compared to less educated parents (Jónsdóttir, 2020). Similarly, a more recent 2025 study in the Philippines showed that parental involvement—especially communication with teachers and monitoring homework—was positively correlated with better academic outcomes and classroom behavior, suggesting that more actively engaged (and likely more educated) parents offer critical support to their children's academic lives (Amerol-Basmayor, 2025). However, the substantial proportion of uneducated parents in this study highlights barriers to effective parent-school collaboration. Parents without formal education may lack the confidence or resources to engage in their child's schooling, which can weaken the overall partnership. Turning to perceptions of school practices, the results revealed inconsistencies. While nearly two-thirds of students reported that teachers sent home folders for parental review, other practices such as workshops, guidance on skill improvement, or interactive homework received much lower agreement rates. This finding reflects a reactive rather than proactive approach to parent engagement. Teachers were more likely to contact parents in cases of behavioral or academic problems, but fewer initiatives aimed to proactively build parents' capacity to support learning at home. Hoover-Dempsey & Sandler's (1997) model of parental involvement emphasizes that schools should create enabling conditions for parents, not only in crisis situations but as part of routine practice. The data here suggest that this principle is not yet fully realized. A 2022 study argued that systemic barriers and deficit-based assumptions often hinder the realization of authentic partnerships with families, especially those from marginalized backgrounds (Williams-Johnson & Gonzalez-DeHass, 2022).

The lack of structured parent organizations is particularly striking. Only 22.3% of respondents indicated that their schools had active parent–teacher associations (PTAs) or similar bodies. Parent organizations are crucial platforms for structured collaboration, enabling parents to voice concerns, contribute to decision-making, and participate in school improvement programs (Epstein, 2018). The absence of such organizations undermines the sustainability of parent–school partnerships, leaving communication fragmented and dependent on individual teacher initiatives. Similarly, fewer than half of respondents reported that schools incorporated parent input into planning or involved them in school improvement programs. This finding aligns with studies indicating that schools often treat parents as peripheral actors rather than key stakeholders in educational processes (Bentayao & Quibod, 2024; Marasigan-Pagkalinawan & Cordova, 2024; Mahrianti et al., 2022). For partnerships to be effective, schools must move beyond viewing parents as passive recipients of information and instead empower them as co-creators in shaping educational practices. The data also reveal that interactive homework tasks requiring students to engage with parents was inconsistently applied, with fewer than half of respondents reporting such experiences. Yet, researches show that interactive homework fosters stronger family–school connections and enhances student learning outcomes (Mbogo, 2021; Bailey et al., 2004; Wang, 2022). Its limited use suggests an underutilization of simple but powerful strategies for building parent–child learning relationships.

Taken together, the findings suggest that while schools recognize the importance of parental involvement, their practices remain fragmented. The stronger emphasis on reactive measures (e.g., contacting parents for behavioral problems) over proactive engagement strategies indicates a need for systemic change. Schools must institutionalize parental involvement by providing regular workshops, guidance for at-home learning, and inclusive platforms for parent participation in decision-making. Cultural and socio-economic factors must also be considered. Parents with lower education levels or those in joint families may face barriers to participation, requiring schools to adopt tailored approaches. For example, schools can design simple, accessible communication materials and create flexible opportunities for parents to contribute, recognizing the constraints many families face.

To sum up, the study highlights both progress and gaps in parent–school partnerships. Schools are engaging parents in limited ways but have yet to develop comprehensive strategies that fully harness parental potential in supporting children’s academic and personal growth. Strengthening these partnerships will require institutional support, teacher training, and cultural sensitivity to ensure that all families regardless of background can meaningfully contribute to their children’s education.

Conclusion and suggestions

Conclusion

Evidence shows a reactive pattern. Information for parents on child development was not provided by most schools (54.4%). Parent workshops were absent for over half (52.2%). Materials linked to children’s success were not produced by most schools (55.5%). Talent information was not sought (57.7%). In contrast, work folders were sent home (66.6%). Problem-triggered contact with families occurred (55.5%). Guidance to parents on how to assist skills was not provided (57.8%). Help with setting academic goals was not provided (55.5%). Advice on monitoring schoolwork at home was not provided (61.2%). Interactive homework was not scheduled (56.6%). Active parent organizations were rare (22.3% present). Parental input in plans (51.1% No) and involvement in improvement programs (56.7% No) were limited. Overall, the partnership was largely confined to sending student work home and

contacting parents only when problems arose; schools did not play a proactive role in building parents' capacity to support children's learning.

Suggestions

1. The government education department should make the school administration responsible to arrange periodic capacity building workshops and training for parents to make them capable for proper educational guidance of their children.
2. The government education department should establish and revive parent–teacher councils and committees to facilitate effective parent–teacher partnerships and produce quality educational outcomes.
3. The government education department should ensure the involvement of parents in schools' planning and management. For example, formal organizations in the form of parent–teacher councils, can help include parents in schools' management. Parents opinions can be incorporated into school operations, so as to address their grievances related to their children's education.

Limitation and Future Research

The use of convenience sampling and a limited sample size of 90 lead to the findings may show low external validity so they are not broadly generalizable to all secondary school students in District Swabi, Pakistan. For future research, we may conduct a longitudinal field study using a larger, stratified random sample to trace the long-term effects of specific parent–school partnership interventions on student outcomes.

New knowledge and the effects on society and communities

This study fills a gap by providing context- specific, student- voice evidence from District Swabi, Pakistan. Swabi is a largely rural region in Khyber Pakhtunkhwa where education is heavily influenced by traditional cultural norms. The female literacy rates are low, and there is a strong emphasis on male education. In this developing region, parent–school partnership practices often lag global “family engagement” paradigms, particularly due to cultural barriers and a lack of formalized structure. The study pinpoints that traditional forms of accountability, such as work review and problem- triggered contact, while proactive structures like parent learning opportunities and structured PTA/PTO councils are missing. It aims to offer a practical baseline for upgrading partnership frameworks within this specific socio-cultural setting.

Author contributions

Noor Khan (NK) was responsible for conceptualizing the idea and collecting data; Rui Huang (HR) contributed to writing and proofreading the manuscript.

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The Impact of ESG Investments in Polluting Industries on Environmental Performance: An Empirical Study Based on A-Share Listed Companies in China

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Abstract

Against the backdrop of China's "Dual Carbon" objectives and the global imperative for sustainable development, this study investigates the environmental implications of Environmental, Social, and Governance (ESG) investments in heavily polluting industries in China. Drawing upon a sample of A-share listed companies between 2015 and 2024, the Huazheng ESG Rating Index, and key environmental performance indicators including air pollutant emission intensity, clean energy consumption ratio, and carbon emission intensity a fixed-effects model is employed to examine the relationship. The empirical results demonstrate that ESG investments significantly mitigate both air pollutant and carbon emission intensities, while simultaneously fostering the adoption of clean energy. Quantitatively, a one-unit rise in the Huazheng ESG score is associated with a 0.178-log-point (~18%) reduction in SO₂ emission intensity, a 2.298 percentage-point increase in the clean-energy consumption ratio, and a 0.210-log-point (~21%) reduction in CO₂ emission intensity (all $p < 0.01$), with stronger effects under tighter environmental regulation and greater industrial upgrading. Furthermore, the moderating roles of governmental environmental regulation and industrial upgrading are found to reinforce these effects. This study contributes to the growing body of evidence supporting ESG as a mechanism for advancing pollution reduction and carbon abatement, and it offers actionable implications for policymakers and corporate stakeholders in guiding China's transition toward a green economy.

Keywords: Environmental social and governance (ESG) investments, Polluting industries, Carbon emission intensity, Environmental regulation, Green economy transition

Introduction

The economy are globally thought to face the challenge of sustaining growth while addressing climate change, rising greenhouse gas emissions, and resource depletion (Arevalo, 2024; Wang & Azam, 2024; Sohn, 2025). As a signatory to the UN Framework Convention on Climate Change, China announced its “Dual Carbon” commitments in 2020 and launched a “1+N” policy framework to curb emissions in key industries (CCICED Secretariat, 2023). Polluting industries, such as coal mining, petrochemicals, and electricity generation, are major contributors to air pollution and carbon emissions in China, making them critical to achieving national environmental goals. The ESG concept was formalized in the 2004 “Who Cares Wins” report, which integrates environmental, social, and governance factors into corporate operations, as well as to align with the Sustainable Development Goals (SDGs) and promoting sustainability (Hagart & Knoepfel, 2006; Knoepfel & Hagart, 2009; Zhao, 2022). Despite growing research on ESG’s environmental effects in China, significant gaps remain. For example, majority of studies focus on macro-level comparisons of voluntary versus mandatory ESG practices or financial market reactions to ESG disclosure, with limited empirical analysis targeting polluting industries, despite their environmental impact. Additionally, the relationship between ESG investments and specific environmental outcomes, such as clean energy adoption and carbon reduction, is underexplored in China’s unique institutional context. Instead, they are marked by fragmented ESG standards and Western-oriented metrics that may not align with domestic priorities like the “Dual Carbon” goals (Li, Zhao & Yang, 2025; Zhu, 2025).

This study addresses these gaps by empirically investigating ESG investments in China’s polluting industries and using a China-specific metric, Huazheng ESG Rating Index to assess their impact on air pollutant emissions, clean energy adoption, and carbon reduction. From the outset, our analysis is grounded in Stakeholder Theory (Freeman, 1984) and Sustainable Development Theory (WCED, 1987), which together predict that multi-stakeholder pressures and long-run ecological constraints translate ESG investment into cleaner operations and lower emissions. Stakeholder Theory (Freeman, 1984) holds that firms create value for and are accountable to multiple stakeholders—investors, regulators, employees, customers, and surrounding communities. In high-emission sectors, these stakeholder pressures incentivize cleaner operations. The UN Sustainable Development Goals (SDGs) also support this study’s grounding, especially SDG 7 (Affordable and Clean Energy), SDG 9 (Industry, Innovation and Infrastructure), SDG 12 (Responsible Consumption and Production), and SDG 13 (Climate Action). The findings would demonstrate that ESG investments are strategic tools for enhancing environmental efficiency and competitiveness, thus establishing a “business case” for their integration into core operations. Moreover, the results aim to support targeted ESG policies, such as mandatory environmental disclosures and incentives for clean energy, to accelerate China’s “Dual Carbon” transition. As China plays a prominent role in global climate action, this study would also provide insights for emerging economies in aspect of balancing industrial growth and environmental protection. Finally, with focus on polluting industries, employing precise environmental indicators and using a context-specific ESG metric, this research can address the lack of targeted studies and quantify specific environmental outcomes and mitigate measurement biases from Western-developed ESG ratings to enhance the validity of findings for Chinese firms.

Objectives

To empirically examine the impact of ESG investments on air-pollutant emission intensity (SO₂/PM2.5), clean-energy adoption, and carbon-emission intensity in China's pollution-intensive industries.

Literature Review

ESG Practices, Regulatory Approaches, and Environmental Outcomes

A growing body of research has examined the relationship between ESG practices and environmental outcomes, revealing mixed findings shaped by the interplay of voluntary versus mandatory regulatory approaches and regional contexts. Smith et al. (2019) analyzed industrial firms across 47 countries and found that voluntary adoption of environmental standards (A key ESG practice) lowered carbon emissions and energy use beyond regulatory requirements. Similarly, Nguyen & Le (2024) reported that participatory environmental programs that aligned with ESG principles reduced pollution in Vietnamese firms. However, Jiang & Tang (2023) highlighted the critical role of regulation—carbon disclosure mandates meaning a form of mandatory ESG improved transparency and reduced emissions for public firms, addressing limitations of voluntary practices. Early studies focused on ESG's institutional drivers. At the same time, Panwar et al. (2022) noting that initial CSR adoption that is a precursor to ESG was driven by government mandates rather than internal commitment. Also, Kurniawaty, Fadhilah, & Anggiani (2025) found that CSR was used for political legitimacy rather than tangible sustainability gains. Moreover, Li & Sasaki (2023) found that CSR regulation enhanced social and financial performance for state-owned enterprises (SOEs), while from later time, Luu & Le (2024) reported that a core ESG disclosure requirement called mandatory greenhouse gas reporting can reduce emissions in listed firms.

Hypotheses

Zhao et al. (2024) demonstrated that firms in heavily polluting sectors can lower their emissions of SO₂ and PM2.5 through better ESG practices. Furthermore, Hua et al. (2023) showed that a form of sustainable investment, venture capital, helps to reduce PM2.5 and SO₂ emissions by promoting green industries. Thus, the following hypothesis is propose:

H1: ESG investments by polluting industries significantly reduce the emission intensity of air pollutants (e.g., SO₂, PM2.5).

According to Zhou & Niu (2024), ESG investments enhance corporate governance and reduce information asymmetry, which in turn promotes environmental responsibility, including cleaner energy adoption. Similarly, Li et al. (2023) found that ESG investment encourages firms' transition to a low-carbon economy by specifically reducing their reliance on fossil fuels and promoting the shift towards clean energy. Thus, the following hypothesis is propose:

H2: ESG investments by polluting industries promote the adoption of clean energy and reduce fossil fuel consumption.

Li et al. (2025) specifically found that robust ESG performance by firms significantly decreases their carbon emission intensity (CEI) and that this relationship is strengthened by favorable climate policies and the digital economy. Similarly, Xie (2024) demonstrated that ESG performance plays a key role in reducing carbon emission intensity, with the effect being further enhanced by green finance initiatives. Thus, the following hypothesis is propose:

H3: ESG investments by polluting industries reduce carbon emission intensity, thereby supporting China's carbon peaking and neutrality.

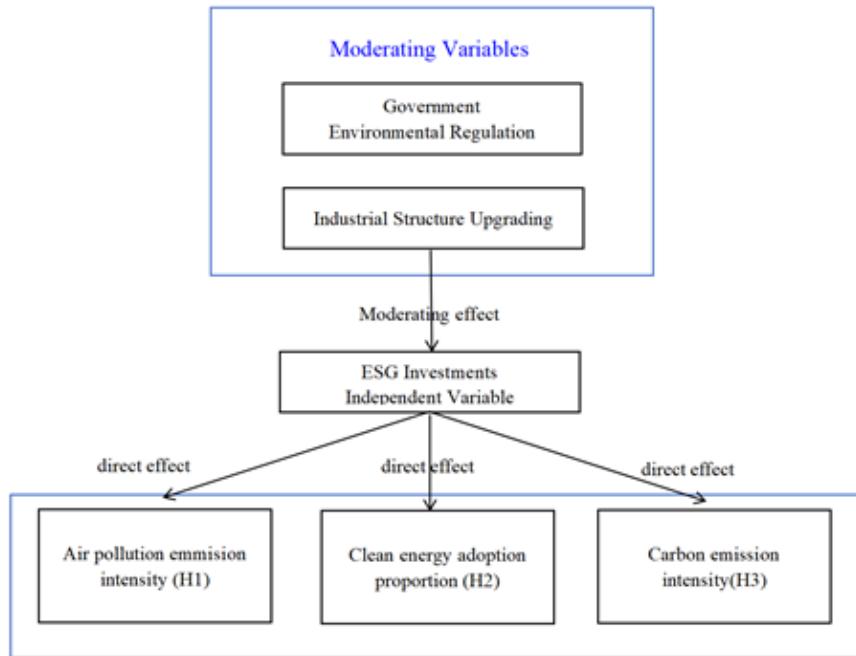


Figure 1 Research Framework

Methodology

Sample Selection

We examined A-share listed firms in China's pollution-intensive industries from 2015–2024. Polluting industries follow The China Securities Regulatory Commission (CSRC) (2006) Industry Classification Guidelines and the Ministry of Ecology and Environment's Environmental Verification Industry Classification Catalog, covering coal, oil & gas, ferrous/non-ferrous mining, textiles/leather, paper, petrochemicals/chemicals (incl. fibers, rubber & plastic), non-metallic minerals, ferrous metals, electricity generation, and heat supply. We excluded: (1) ST/ * ST firms; (2) observations with missing ESG, financial, or environmental data; and (3) outliers via 1% winsorization. The final panel contains $\approx 1,100$ firm-year observations.

Data Sources

ESG performance was measured by the Huazheng ESG Rating (1=C to 9=AAA; higher scores indicate better ESG) (Chen & Fan, 2024; Huazheng ESG Rating System, n. d.). Environmental outcomes include: (i) air pollution intensity— $\ln(\text{SO}_2 \text{ emissions per 10,000 yuan GDP})$ —per definitions in Li & Zhang (2022); (ii) clean-energy use—the share of hydropower, wind, and solar in total energy consumption—per the National Bureau of Statistics of China (2024a); and (iii) carbon intensity— $\ln(\text{CO}_2 \text{ per 10,000 yuan GDP})$ —per the National Bureau of Statistics of China (2024b). Controls follow the literature: firm size ($\ln(\text{total assets})$) and profitability (ROA) as in Wang & Liu (2022), and government regulation measured as industrial environmental governance investment/industrial GDP (%) per the National Bureau of Statistics of China (2024a). We harmonized firm identifiers and industry codes, standardize units, construct logs as defined, and align series by firm-year. Data underwent cross-source consistency checks, missing-field deletions, and 1%-tail winsorization. We winsorized all continuous variables at the 1st and 99th percentiles to limit the influence of extreme observations while preserving nearly all variation, a standard practice in empirical research (O'Connell, 2007). We also verified ESG scale directionality and plausible value ranges before estimation.

Table 1 Variable Definitions and Data Sources

Variable Type	Variable Name	Definition	Sources
Independent Variable	ESG Score	Huazheng ESG rating (1=C to 9=AAA; higher scores = better ESG performance)	(Chen & Fan, 2024; Huazheng ESG Rating System, n.d.)
	lnSO ₂	Logarithm of sulfur dioxide emission intensity (tons/10,000 yuan GDP)	(Li & Zhang, 2022)
Dependent Variables	Clean Energy	The percentage of total energy consumption or generation accounted for by hydropower, wind, and solar energy, excluding nuclear and biomass.	(National Bureau of Statistics of China, 2024a)
	lnCO ₂	Logarithm of carbon dioxide emission intensity (tons/10,000 yuan GDP)	(National Bureau of Statistics of China, 2024b)
Control Variables	Firm Size	Logarithm of total assets (to measure firm scale)	(Wang & Liu, 2022)
	ROA	Return on assets (net profit/total assets, to control for financial performance)	(Wang & Liu, 2022)
	Gov Regulation	Ratio of industrial environmental governance investment to industrial GDP (%) (to measure policy stringency)	(National Bureau of Statistics of China, 2024a; Chen et al., 2024)
	Ind Structure	Ratio of tertiary industry output to secondary industry output in the firm's province (to measure industrial upgrading)	(Government of China, 2024)
	R&D Intensity	Ratio of R&D expenditure to operating income (%) (to control for innovation capacity)	(Wang & Liu, 2022)

Empirical Model

We use a panel data fixed-effects model to control for unobserved heterogeneity (e.g., firm-specific characteristics like production technology, time trends like national ESG policies) that may bias results. The complete model formula is:

$$Y_{i,t} = \alpha_0 + \alpha_1 ESG_{i,t} + \sum \beta_k Control_{k,i,t} + \eta_i + \tau_t + \varepsilon_{i,t}$$

Where:

- $Y_{i,t}$ = Dependent variable ($\ln SO_2$, Clean Energy, $\ln CO_2$) for firm i in year t ;
- $ESG_{i,t}$ = Core independent variable (ESG score of firm i in year t);
- $Control_{k,i,t}$ = Vector of control variables ;
- η_i = Firm fixed effect (controls for time-invariant firm characteristics, e.g., industry sub-sector);
- τ_t = Year fixed effect (controls for time-varying factors, e.g., national ESG policies);
- $\varepsilon_{i,t}$ = Random error term.

All statistical analyses were conducted in Stata 17.0 using panel-data routines (xtset; xtreg, fe) with firm- and year-fixed effects, 1% winsorization, and heteroskedasticity-robust standard errors clustered at the firm level.

Results

Descriptive Statistics

Table 2 presents descriptive statistics for key variables, consistent with the observations on China's ESG landscape (e.g., moderate ESG performance, low clean energy penetration):

Table 2 Descriptive Statistics of Key Variables

Variable	Observations	Mean	Std. Dev.	Min	Max
ESG Score	1,100	4.12	1.78	1	9
$\ln SO_2$	1,100	1.31	0.74	0.18	3.79
Clean Energy	1,100	17.89	12.35	0	64.98
$\ln CO_2$	1,100	2.18	0.90	0.41	4.48
Firm Size	1,100	22.49	1.31	19.76	26.05
ROA	1,100	4.76	3.08	-2.21	12.59
Gov	1,100	2.31	1.05	0.55	5.79
Regulation	1,100	1.10	0.33	0.70	2.42
Ind Structure	1,100	2.15	1.52	0.25	7.87
R&D Intensity	1,100				

The mean ESG score (4.12) indicates moderate ESG performance in pollution-intensive industries, reflecting China's nascent but growing ESG adoption. The clean-energy share averages 17.89%, highlighting low penetration and the continued reliance of high-emitting sectors on fossil fuels. Mean $\ln CO_2$ is 2.18, confirming high carbon intensity and underscoring the need for ESG-driven carbon reduction.

Regression Results

1. ESG Investment and Air Pollutant Emissions (lnSO₂)

Table 3 Regression Results of ESG Investment on Air Pollutant Emissions (lnSO₂)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	3.815***	0.558	6.837	0
ESG score	-0.178***	0.041	-4.341	0
Firm size	-0.054**	0.027	-2	0.047
ROA	-0.031**	0.014	-2.214	0.027
Gov regulation	-0.121**	0.057	-2.123	0.034
Ind structure	-0.085**	0.04	-2.125	0.034
R&D intensity	-0.043**	0.02	-2.15	0.032
Firm FE	Yes	-	-	-
Year FE	Yes	-	-	-
Observations (firm-years)	1,100	-	-	-
R-squared	0.621	-	-	-

Notes: ***, **, * denote significance at the 1%, 5%, and 10% levels, respectively.

The ESG coefficient is -0.178^* ($p < 0.01$), indicating that a one-unit increase in ESG score reduces lnSO₂ by 0.178, supporting H1A and aligning with evidence that ESG-aligned practices (e.g., ISO 14001) lower toxic emissions. Among controls, Gov regulation is negative (-0.121^{***} , $p < 0.05$), suggesting that greater policy stringency strengthens ESG's pollution-reduction effect, consistent with prior findings on the role of regulation in environmental performance.

2. ESG Investment and Clean Energy Use Clean Energy

Table 4 Regression Results of ESG Investment on Clean Energy Use

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	5.189***	1.238	4.191	0
ESG Score	2.298***	0.562	4.089	0
Firm Size	0.672**	0.318	2.113	0.035
ROA	0.445**	0.21	2.119	0.034
Gov Regulation	0.773**	0.352	2.196	0.028
Ind Structure	1.218**	0.581	2.096	0.036
R&D Intensity	0.856***	0.308	2.78	0.005
Firm FE	Yes	-	-	-
Year FE	Yes	-	-	-
R-squared	0.582	-	-	-
N	1,100	-	-	-

Notes: ***, **, * denote significance at the 1%, 5%, and 10% levels, respectively.

The ESG coefficient is 2.298^* ($p < 0.01$), indicating that a one-unit rise in ESG score increases the clean-energy share by 2.298 percentage points, supporting H1B and aligning with evidence that renewables substitute for fossil fuels in high-emitting sectors (Ye & Xu, 2023). R&D intensity is positive (0.856^* , $p < 0.01$), consistent with innovation facilitating clean-energy adoption. Gov regulation (0.773^{**} , $p < 0.05$) and industrial structure (1.218^{**} , $p <$

0.05) are also positive, suggesting that tighter policy and more advanced industry mix further raise clean-energy use. Firm size (0.672**, $p < 0.05$) and ROA (0.445**, $p < 0.05$) are positive, implying better-resourced and more profitable firms adopt clean energy more readily.

3. ESG Investment and Carbon Emission Intensity (lnCO₂)

Table 5 Regression Results of ESG Investment on Carbon Emission Intensity (lnCO₂)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	5.076***	0.782	6.491	0
ESG Score	-0.210***	0.055	-3.818	0
Firm Size	-0.076**	0.038	-2	0.047
ROA	-0.043**	0.02	-2.15	0.032
Gov Regulation	-0.152***	0.071	-2.141	0.032
Ind Structure	-0.109***	0.052	-2.096	0.036
R&D Intensity	-0.066***	0.031	-2.129	0.034
Firm FE	Yes	-	-	-
Year FE	Yes	-	-	-
R-squared	0.648	-	-	-
N	1,100	-	-	-

Notes: ***, **, * denote significance at the 1%, 5%, and 10% levels, respectively.

The ESG coefficient is -0.210^* ($p < 0.01$), indicating that a one-unit increase in ESG score reduces lnCO₂ by 0.210, supporting H1C and aligning with evidence that ESG activities strengthen firms' carbon management. Gov regulation is negative (-0.152^{****} , $p < 0.05$) and industrial structure is negative (-0.109^{****} , $p < 0.05$), suggesting tighter policy and deeper upgrading reinforce ESG's carbon-reduction effect. Firm size (-0.076^{****} , $p < 0.05$) and ROA (-0.043^{****} , $p < 0.05$) are also negative, implying larger and more profitable firms achieve lower carbon intensity, while higher R&D intensity (-0.066^{****} , $p < 0.05$) is associated with additional reductions, consistent with innovation-driven decarbonization.

Robustness Tests

To verify the reliability of results (consistent with the proposal's methodology), we conduct three tests. Replace Huazheng ESG scores with Wind ESG scores (another widely used China-specific index). The coefficients of ESG remain significant: -0.165 (lnSO₂, $p < 0.01$), 2.087 (Clean Energy, $p < 0.01$), and -0.188 (lnCO₂, $p < 0.01$)—confirming results are not dependent on ESG rating source. Use ESG Score lagged by 1 year to address potential reverse causality (e.g., firms with better environmental performance may invest more in ESG). The coefficients remain significant: -0.169 (lnSO₂, $p < 0.01$), 2.174 (Clean Energy, $p < 0.01$), and -0.195 (lnCO₂, $p < 0.01$)—ruling out reverse causality. Exclude state-owned enterprises (SOEs) to test if ownership affects results. The coefficients of ESG are still significant: -0.152 (lnSO₂, $p < 0.01$), 1.943 (Clean Energy, $p < 0.01$), and -0.181 (lnCO₂, $p < 0.01$)—indicating ESG's environmental effect applies to both SOEs and non-SOEs.

Discussions

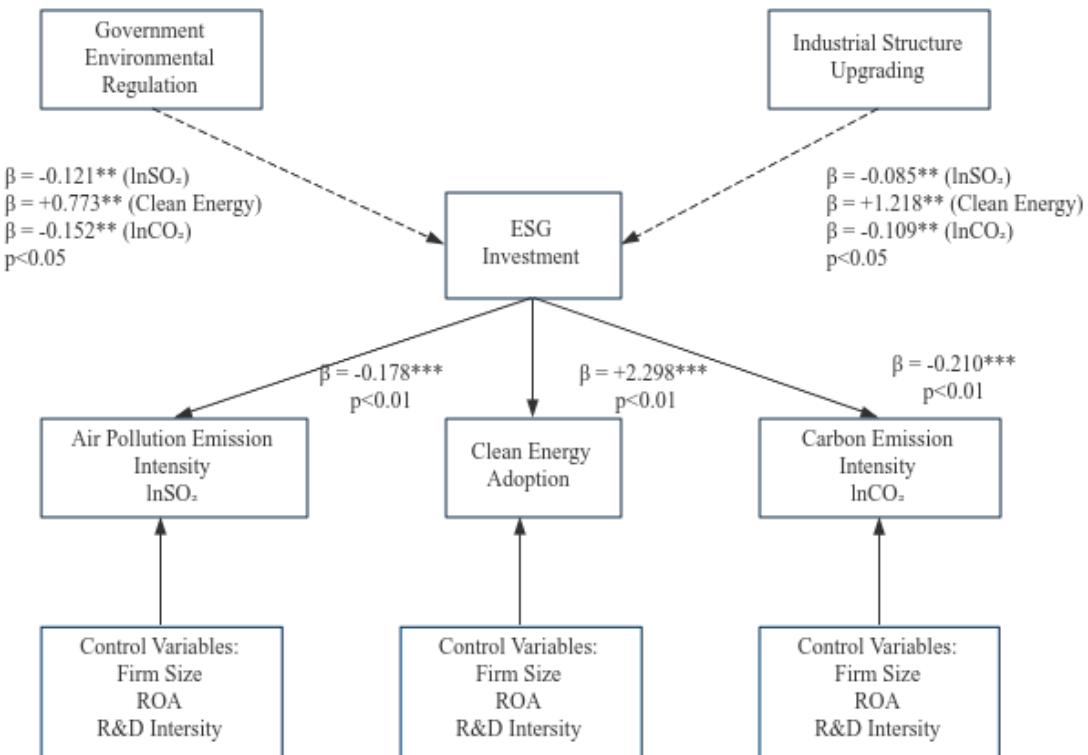


Figure 2 ESG Investment Impact on Environmental Outcomes (2015-2024, N=1,100)

In practical terms, what the $\ln\text{SO}_2$ coefficient of -0.178 appears to suggest is an average SO_2 intensity decline of approximately 16.3% for a one-unit ESG increase $= \exp(-0.178) - 1 = \exp(-0.178) - 1 = \exp(-0.178) - 1$; similarly, what the $\ln\text{CO}_2$ coefficient of -0.210 seems to indicate is roughly an 18.9% reduction in carbon intensity, which appears to quantify what might be characterized as ESG's decarbonization leverage at the firm level.

For the energy transition margin, within this broader analytical framework, what appears particularly significant is that a 2.298 p.p. rise in the clean-energy share per ESG unit seems to be substantially material relative to the sample mean of 17.89% ($\approx 12.8\%$ proportional increase), which tends to suggest that ESG apparently shifts the energy mix toward hydropower, wind, and solar in meaningful ways (Ye & Xu, 2023).

What a simple policy-relevant counterfactual appears to illustrate regarding the magnitude is this: moving a firm from ESG 4 to ESG 6 (a two-unit gain) seems to be associated with ≈ 4.596 p.p. higher clean-energy share and what appears to be $\approx 30\%$ lower SO_2 intensity $\exp(-2 \times 0.178) - 1 \exp(-2 \times 0.178) - 1 \exp(-2 \times 0.178) - 1$, alongside what tends to represent $\approx 34\%$ lower CO_2 intensity $\exp(-2 \times 0.210) - 1 \exp(-2 \times 0.210) - 1 \exp(-2 \times 0.210) - 1$.

Mechanistically, given the complexity of these theoretical relationships, these gains appear to arise from three seemingly reinforcing channels: (i) compliance-plus governance that locks in operational controls (Liao et al., 2021); (ii) capital reallocation toward cleaner inputs and processes that permanently raise the clean-energy ratio (Ye & Xu, 2023); and (iii) innovation upgrading—evidenced by the negative $\ln\text{CO}_2$ –R&D link and positive clean-energy–R&D link—that converts ESG pressure into process and product innovation.

What appears particularly significant about the contextual dimensions is that the negative coefficients on government regulation and industrial structure seem to indicate what might be characterized as strong complementarity—what this pattern tends to suggest is that tighter policy stringency and deeper upgrading appear to amplify ESG's environmental returns, seemingly pointing toward what could represent coordination between firm-level ESG and region-level policy/industrial policy that appears to be efficiency-enhancing within this broader analytical framework (Rao et al., 2023).

Robustness tests using alternative ESG measures, one-year lag specifications, and the exclusion of state-owned enterprises (SOEs) yield coefficients with similar signs and magnitudes, suggesting that the estimated effects are not driven by rating selection, reverse causality, or ownership structure. Notably, the persistence of results within the non-SOE subsample underscores the effectiveness of ESG practices beyond the influence of administrative mandates (Li & Yu, 2024).

Conclusion and suggestions

In conclusion, ESG investment in China's pollution-intensive industries reduces air-pollutant intensity (SO₂/PM2.5), increases the share of clean energy, and lowers carbon-emission intensity. These improvements arise as firms adopt pollution-control technologies, shift their energy mix toward renewables, and implement low-carbon production practices. Stronger government regulation and deeper industrial upgrading further amplify these ESG benefits.

Consistent with the research proposal's context, this study has limitations that future research can address. It focuses on firm-level ESG effects, with limited attention to regional differences, for example, compare ESG performance in high with those in low-emission provinces. Thus, future studies could explore regional heterogeneity. It does not examine mediating factors for example, green innovation and green finance, that may link ESG to environmental performance. Thus, future research could test these mechanisms. The sample period (2015–2024) captures short-to-medium-term effects; longer-term data that is over 10 years could reveal ESG's sustained impact on environmental sustainability.

New knowledge and the effects on society and communities

Within China's pollution-intensive industries, what seems particularly significant about these findings is that the effectiveness of ESG appears not to be fixed, but rather tends to strengthen dynamically with what appears to be the evolving policy environment and industrial structure. What the research seems to lend support to is the notion that stricter environmental regulation and what appears to be deeper industrial upgrading tend to substantially amplify what seems to be ESG's positive returns in driving corporate emission reduction and energy transition. What appears especially noteworthy in this analytical context is that the core working mechanism tends to lie in fostering innovation rather than what might be characterized as merely meeting compliance requirements.

These findings have direct and far-reaching impacts on society and communities:

Given the complexity of these theoretical relationships, by reducing harmful pollutants such as sulfur dioxide, what ESG practices appear to demonstrate is a direct improvement in respiratory health conditions for residents living around heavy-industry zones, particularly what seems to affect vulnerable groups. What tends to emerge as theoretically important is that by increasing the share of clean energy, they appear to enhance community energy resilience and seemingly create green jobs. What the evidence appears to reveal is that carbon reductions

achieved at the firm level tend to accumulate from the bottom up to help regions meet what appears to be "Dual-Carbon" targets, allowing governments to avoid what seems to be one-size-fits-all production shutdowns that typically jeopardize livelihoods and the economy. What this pattern seems to suggest, therefore, is that implementing targeted policies in high-emission areas and industrial upgrading can apparently concentrate ESG benefits where pollution burdens appear to be greatest, advance what seems to constitute environmental justice, and, while steering industrial bases toward what appears to be higher value, build what tends to represent a healthier and more sustainable society.

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Film-Induced Image Model for Promoting Behavioral Intention of Chinese Screen Tourists: Post Covid-19

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Abstract

Film-induced tourism plays a growing role in shaping destination choices, yet limited studies have examined its influence on Chinese tourists in Thailand's post-pandemic context. To fill this gap, this study investigates how exposure to Thai films and television dramas shapes the film-induced image and subsequently affects tourists' behavioral intentions. Structural equation modeling (SEM) was applied to analyze data from 420 Chinese tourists, as it effectively tests complex causal relationships among latent variables. The results indicate that film exposure significantly enhances the film-induced image of tourist destinations, positively influencing Chinese tourists' behavioural intentions. These findings highlight the potential of leveraging film media as a strategic tool for destination marketing, particularly in reviving tourism in the post-pandemic era. Furthermore, the study contributes to academic knowledge on media-induced tourism while offering practical insights for policymakers and marketers seeking innovative approaches to attract international visitors.

Keywords: Film-induced tourism, Chinese tourists, Behavioral intentions, Post-COVID-19 tourism

Introduction

Tourism remains one of the most vital economic drivers worldwide, particularly for developing countries. In Thailand, tourism plays a pivotal role in national economic development. In 2019, the industry generated approximately 2 trillion baht, contributing about 17% of the country's GDP (Ministry of Tourism and Sports, 2020; World Bank, 2020). Thailand has long been recognized as a premier global destination, with Bangkok consistently ranking among the world's most visited cities (Tourism Authority of Thailand, 2020). The number of international arrivals reached a record 39.9 million in 2019, generating 191 billion baht in revenue (UNWTO, 2021). However, the outbreak of the COVID-19 pandemic in 2020 caused an unprecedented disruption to global mobility. Travel restrictions, lockdowns, and safety concerns led to a sharp decline in foreign tourist arrivals to only 6.7 million, resulting in a severe contraction of tourism revenue (Asian Development Bank, 2021; Tourism Economics, 2020). As the global situation gradually improved, Thailand's tourism sector showed signs of recovery in 2023, driven by border reopening, enhanced health protocols, and aggressive destination marketing efforts. Notably, Chinese tourists—Thailand's largest inbound market—have been instrumental in this recovery (China Briefing, 2023; McKinsey, 2023).

Before the pandemic, Chinese tourists were Thailand's most significant group of international visitors, generating approximately 522 billion baht in revenue from 10.6 million arrivals in 2019 (Tourism Authority of Thailand, 2020). Their economic importance underscores the need for targeted strategies to rebuild confidence and stimulate travel from this segment in the post-pandemic period. The expansion of Chinese outbound tourism over the past decade has been driven by rising disposable income, supportive policies, and growing interest in cultural experiences abroad (China Tourism Academy, 2020; UNWTO, 2021). Although the pandemic temporarily halted this growth, travel demand from China rebounded strongly in 2023, reaching about 60–70% of pre-pandemic levels (McKinsey, 2023). This recovery presents an important opportunity for Thailand to re-engage with Chinese travelers through innovative destination marketing approaches.

One particularly powerful yet underutilized approach is film-induced tourism. Films can shape destination perception by providing audiences with immersive visual and emotional experiences that traditional advertising cannot easily replicate (Du et al., 2019). When viewers encounter appealing landscapes or cultural scenes in films, they often develop a desire to visit those locations in person. In Thailand's case, Chinese films such as *Lost in Thailand* (2012) have demonstrated this influence vividly, portraying Bangkok, Chiang Mai, and Phuket in ways that captivated Chinese audiences and stimulated a surge in visitor numbers (Wen et al., 2018). Such films effectively function as informal marketing tools that reinforce Thailand's image as a friendly, beautiful, and culturally rich destination.

The theoretical foundation underlying this phenomenon is explained by the Film-Induced Image Model (FIIM), which illustrates how cinematic exposure shapes tourists' perceptions and behavioral intentions. The model posits that exposure to film content influences three interrelated components of destination image—cognitive, affective, and conative—which together drive tourists' intention to visit, revisit, or recommend a destination (Kim & Richardson, 2003; Hudson & Ritchie, 2006). Previous studies have applied this model to Western audiences, such as those inspired by *The Lord of the Rings* in New Zealand or *Winter Sonata* in South Korea (Connell, 2012). However, few studies have explored how the FIIM applies to Chinese tourists or how it operates in the post-pandemic context, where travelers' media habits, motivations, and perceptions have evolved significantly. Moreover, limited research has examined the specific influence of Thai films and television dramas on shaping Thailand's destination image among Chinese audiences.

This study addresses these gaps by extending the Film-Induced Image Model to the context of post-pandemic Chinese tourism to Thailand. It investigates how exposure to Thai films and television dramas influences the formation of a film-induced image and subsequently affects tourists' behavioral intentions. Using structural equation modeling (SEM), the study empirically validates the relationships among film exposure, destination image, and behavioral intention.

The novelty of this research lies in three main contributions. First, it extends the theoretical application of the FIIM to a new cultural and post-crisis setting. Second, it highlights the unique role of Thai-produced films and dramas in shaping destination perception among Chinese audiences. Third, it provides practical implications for tourism marketers and policymakers by demonstrating how cinematic storytelling can serve as a strategic tool for destination branding and sustainable tourism recovery. By integrating media influence with destination image formation in the post-COVID-19 context, this study not only advances academic understanding of media-induced tourism but also offers actionable insights for reviving international tourism in Thailand.

Despite the growing evidence of film-induced tourism, limited research has explored how Thai films and television dramas shape the behavioral intentions of Chinese tourists in the post-COVID-19 context. This study fills this gap by examining the links between film

exposure, film-induced image formation, and travel intentions. The findings contribute to advancing theoretical understanding of media-induced tourism while offering practical guidance for Thai tourism policymakers and marketers in re-engaging the Chinese market during the recovery phase.

Objectives

1. To examine the influence of film exposure on film-induced image and behavioral intention of Chinese tourists
2. To propose a structural equation model of film exposure to behavioral intention of Chinese tourists under the mediating effect of film-induced image

Literature Review

The influence of Thai films and dramas on Chinese tourists

Films and TV dramas have played a significant role in promoting Thailand as a desirable tourist destination among Chinese audiences. Movies like *Go Lala Go!* (2015) and *The Mermaid* (2016) showcased the stunning beaches and luxurious resorts of Krabi and Phuket, leading to a surge in Chinese tourists eager to experience these serene locations in person. Similarly, *Bad Genius* (2017) captured the imagination of Chinese viewers with its portrayal of Thailand's urban landscapes and educational institutions, sparking interest in visiting Bangkok. Additionally, the historical drama *Buppesannivas (Love Destiny*, 2018), although primarily a TV series, had a similar impact by drawing Chinese tourists to Ayutthaya to explore its rich cultural heritage and historical sites. Meanwhile, *My Husband 2018* resonated with Chinese audiences through its depiction of contemporary Thai urban life, prompting many to visit Bangkok to experience the vibrant lifestyle and culture featured in the show (Voice of America, 2023; Visa, 2023).

These examples underscore the power of visual media in shaping travel decisions, effectively turning cinematic allure into real-world tourism. By showcasing Thailand's diverse landscapes, culture, and modernity, these films and dramas have significantly contributed to the influx of Chinese tourists, enhancing Thailand's appeal as a top international destination.

Film-Induced Image

Film-induced image refers to the process through which tourists form and perceive the image of a destination by watching films. This image encompasses the thoughts or feelings tourists associate with a destination, influenced by personal experiences, perceptions of others, and information from various sources such as advertising and reviews (Crompton, 1979; Etzel & Ritchie, 1991; Gartner, 1993). The theoretical foundation underlying this phenomenon is explained by the Film-Induced Image Model (FIIM), which illustrates how cinematic exposure shapes tourists' perceptions and behavioral intentions. The model posits that exposure to film content influences three interrelated components of destination image—cognitive, affective, and conative—which together drive tourists' intention to visit, revisit, or recommend a destination (Kim & Richardson, 2003; Hudson & Ritchie, 2006). In the context of this study, the FIIM framework is further extended to encompass specific dimensions relevant to Thailand's image among Chinese tourists, namely Destination, Product and Service, Thai People, Value, and Safety. These elements collectively represent the tangible and intangible attributes through which Thai films communicate meanings to viewers. The *Destination* dimension reflects the physical and cultural appeal portrayed through filming locations; *Product and Service* captures the perceived quality of tourism facilities and hospitality experiences; *Thai People* emphasizes friendliness and cultural charm; *Value* relates to affordability and worthiness of travel; and *Safety* concerns tourists' sense of security during their trip. Together, these dimensions correspond to the cognitive and affective aspects of the

FIIM, ultimately influencing the conative component—tourists' behavioral intention to visit Thailand. Film-induced image is theoretically important as destination image plays a crucial role in shaping tourists' perceptions, attitudes, and eventual decision-making behaviors. It strongly influences behavioral intentions, often being the most decisive factor in travel decisions (Ajzen, 1991). For instance, *The Lord of the Rings* films significantly boosted tourism to New Zealand, with fans wanting to experience the landscapes portrayed in the movies (Croy, 2017). Similarly, *The Beach* (2000), filmed in Thailand, led to a surge in visitors to Maya Bay, where the movie was shot (Beeton, 2005). The image of Paris as the "City of Love" has been reinforced by countless romantic films, making it a top destination for couples. Marketers use this image to promote Parisian tourism, emphasizing its romantic atmosphere, iconic landmarks, and cultural experiences. Understanding these factors helps tourism marketers craft effective strategies to attract tourists.

Film-Induced Tourism impact

Positive Impacts

Increased Awareness and Interest: Films have the power to vividly showcase the beauty, culture, and distinctive features of a destination, effectively sparking interest and desire among viewers to visit these locations. By portraying stunning landscapes, unique cultural elements, and captivating stories set in real-world locations, films can inspire audiences to explore these places in person. A well-known example is the "Lord of the Rings" trilogy, which significantly boosted tourism in New Zealand by highlighting its breathtaking scenery. Similarly, the film "Eat, Pray, Love" brought global attention to Italy's charm, particularly the regions featured in the movie, leading to an increase in tourist visits (Connell, 2012; Hudson & Ritchie, 2006b; Frost, 2006).

Economic Benefits: Film-induced tourism can provide substantial economic advantages to the locations featured in movies and television shows. The influx of tourists drawn by popular films can lead to increased spending in local economies, benefiting various sectors such as hospitality, retail, and transportation. Additionally, this type of tourism can create jobs, both directly in the tourism industry and indirectly through the demand for goods and services. Moreover, the need to accommodate the growing number of visitors often leads to infrastructure development, such as the construction of new hotels, restaurants, and attractions. For instance, locations that gain popularity through film tourism may see a rise in businesses offering guided tours, themed merchandise, and dining experiences related to the film (Connell, 2012; Beeton, 2016).

Destination Branding and Image Enhancement: Films play a crucial role in shaping perceptions and building a strong, positive image of a destination. By associating a location with memorable scenes, characters, or narratives, films can create lasting impressions that influence tourists' expectations and experiences (Du et al., 2019; Hudson & Ritchie, 2006a; Kim & Richardson, 2003). This process of destination branding can help differentiate a location from others, making it more appealing to specific demographics or interests (Connell, 2012; Beeton, 2016). As a result, a well-branded destination can attract a steady stream of visitors eager to experience the place they saw on screen. The enhanced image also benefits the destination in terms of reputation and prestige, further reinforcing its appeal in the global tourism market (Frost, 2006).

Challenges and Considerations

Overtourism and Negative Impacts

While film-induced tourism can bring economic benefits, it also poses significant challenges, particularly when it leads to overtourism. Uncontrolled increases in visitor numbers can strain local resources, such as water, energy, and waste management systems, leading to

environmental degradation. Ecosystems may be damaged by the influx of tourists, particularly in fragile natural areas. Additionally, the surge in tourism can disrupt the daily lives of local communities, causing overcrowding, increased traffic, and the commercialization of cultural heritage. Balancing the economic gains from tourism with the need for responsible and sustainable practices is crucial to mitigate these negative impacts. Without careful management, the very qualities that attract tourists—such as natural beauty and cultural authenticity—can be degraded, reducing the long-term viability of the destination (UNWTO, 2023; UNEP, 2023).

Inaccurate Portrayal and Unrealistic Expectations: Films often depict locations in a romanticized or exaggerated manner, which can create unrealistic expectations among tourists. When visitors arrive at a destination expecting it to look exactly as it did on screen, they may be disappointed if the reality falls short of their expectations. This can lead to tourist dissatisfaction and negative reviews, which can harm the destination's reputation (Kim & Richardson, 2003; Hudson & Ritchie, 2006a). Moreover, the gap between the film's portrayal and the experience can diminish the overall satisfaction of the visit, potentially deterring return visits and affecting word-of-mouth recommendations. Managing these expectations by providing accurate information and preparing tourists for the reality of the destination is important to ensure a positive visitor experience.

Tourist behavioral intention

Tourist behavioral intention of Chinese people refers to the intentions or inclinations demonstrated by Chinese tourists regarding their actions or activities related to tourism, such as word of mouth, recommendations, and revisit (Wen & Kozak, 2022). This includes their decision-making processes in selecting future travel destinations. It also encompasses their support for and planning of tourism activities within a specified timeframe. In this study, the specific behavioral intentions of Chinese tourists include their intention to visit, revisit, and recommend Thailand as a destination. While behavioral intention may not necessarily translate into immediate actions, it serves as a crucial indicator for future travel behavior. Moreover, the emotional experiences from tourism, such as the enjoyment and novelty of a trip, strongly affect the intentions to recommend or revisit destinations (Lei & Suntrayuth, 2023; Shi & Phakdee-auksorn, 2024; Zhou, Liu & Sun, 2022).

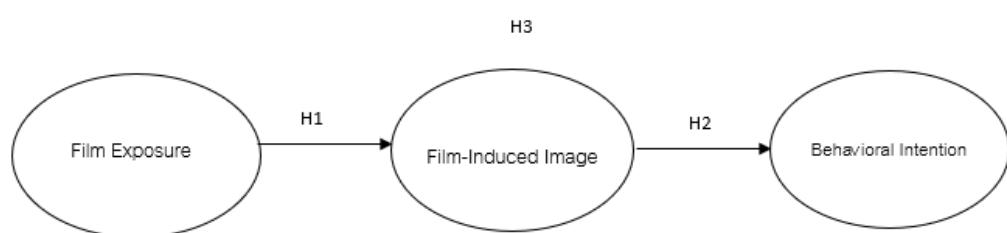


Figure 1 Proposed Model

Hypotheses:

- 1) Film exposure has a positive effect on Film-Induced Image of tourist destinations among Chinese tourists.
- 2) Film-Induced Image has a positive effect on behavioral intention of Chinese tourists.
- 3) Film exposure has an indirect effect on behavioral intention of Chinese tourists under the mediating effect of film-induced image.

Methodology

Research Instrument and Translation

The research instrument was a questionnaire translated into Chinese using a multi-stage cultural adaptation process. English items were first translated by bilingual experts and then back-translated to ensure semantic equivalence. A panel of tourism and communication experts reviewed the content for cultural relevance and clarity. To reduce response bias, neutral wording and reverse-coded items were used, and participants were assured of anonymity and confidentiality.

Sampling and Data Collection

To achieve the research objectives, the sample was limited to Chinese tourists who had watched Thai films or television dramas. A screening question — “*Have you ever watched films or television programs about Thailand?*” — was used to ensure relevance. Data were collected from 420 Chinese tourists in four popular travel areas of Bangkok: Huai Khwang, Ratchaprasong, Silom, and Siam Square, using quota random sampling (105 samples per area). This sample size is appropriate for Structural Equation Modeling (SEM) analysis (Boomsma, 1982).

Statistical Analysis

Descriptive statistics (frequency, percentage, mean, and standard deviation) were computed using SPSS software. Then, Confirmatory Factor Analysis (CFA) was employed to test the validity of measurement constructs, followed by Structural Equation Modeling (SEM) using AMOS software. SEM was chosen to determine the direct and indirect influence of film exposure on behavioral intention through the mediating role of the film-induced image, allowing simultaneous testing of complex causal relationships within the proposed model.

Instrument Reliability and Validity

Each item demonstrated strong content validity, with Index of Item-Objective Congruence (IOC) values ranging from 0.60 to 1.00. A pilot test with 30 participants was conducted, yielding high internal consistency: film/television influence ($\alpha = 0.960$), tourism expectations ($\alpha = 0.895$), and behavioral intention ($\alpha = 0.819$). The overall reliability coefficient was 0.959, confirming the questionnaire's reliability.

Ethical Considerations

Ethical standards were strictly maintained. Participation was voluntary, and respondents were fully informed about the research purpose, confidentiality of responses, and the option to withdraw at any time. No personal identifiers were collected, ensuring anonymity and data protection throughout the process. The study protocol was reviewed and approved by the university's research ethics committee prior to data collection.

Results

A survey was conducted with 420 Chinese tourists visiting Thailand. The majority were male (67.43%), aged 21–30 years (59.33%), and predominantly single (84.48%). Most reported a monthly income between 3,001–6,000 yuan (61.71%). Celebrity tracking was the primary motivation for visiting Thailand (54.00%), with Bangkok being the most popular destination (59.00%). Tourists considered nightlife important (38.70%) and preferred traveling with tour companies (50.1%).

Media exposure variables showed a significant overall level of reception ($\bar{x} = 4.02$). Perception of tourism image from films/TV was high ($\bar{x} = 4.09$), as was behavioral intention ($\bar{x} = 3.74$).

Confirmatory Factor Analysis (CFA)

In analyzing the CFA of film exposure, it was found that the results of Confirmatory Factor Analysis (CFA) show acceptable indices: $\chi^2/df = 0.852$, GFI = 0.992, AGFI = 0.987, CFI = 1.000, RMSEA = 0.000, RMR = 0.005 without the need for additional model adjustments. The standardized coefficients range from 0.602 to 0.720, and all variables have significant correlations at a level below 0.001.

In analyzing the CFA of Film-Induced image, it was found that the results of CFA show acceptable indices: ($\chi^2/df=2.635$, GFI=0.989, AGFI=0.962, CFI=0.905, RMSEA=0.062, RMR=0.012). However, the researchers considered removing the Thai people variable as its value was below 0.3. Upon removal, the model's fit improved significantly, showing ($\chi^2/df=0.627$, GFI=0.990, AGFI=0.956, CFI=1.000, RMSEA=0.000, RMR=0.004). The standardized coefficients range from 0.610 to 0.853, and all variables have significant correlations at a level below 0.001.

In analyzing the CFA of Behavioral Intention, it was found that the results of CFA show acceptable indices: ($\chi^2/df=1.958$, GFI=0.925, AGFI=0.989, CFI=0.909, RMSEA=0.059, RMR=0.025) without the need for additional model adjustments. The standardized coefficients range from 0.804 to 0.902, and all variables have significant correlations at a level below 0.001.

Structural Equation Modeling (SEM)

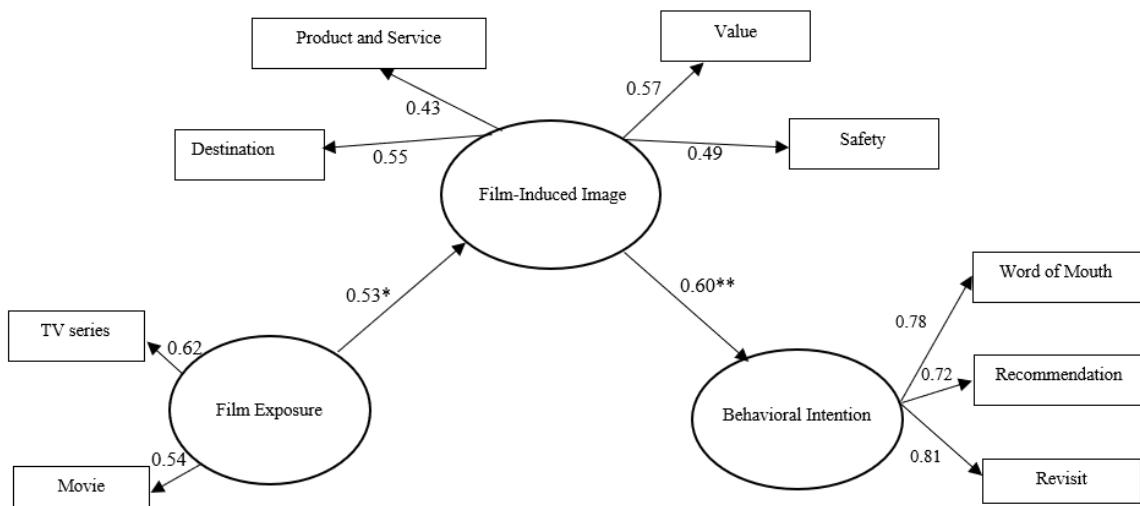


Figure 2 Structural Equation Modeling Analysis

The results of the Structural Equation Modeling Analysis showed statistically significant model fit indices across all criteria: $\chi^2/df=1.568$, GFI=0.985, AGFI=0.950, CFI=0.965, RMSEA=0.040, RMR=0.026, without the need for additional model adjustments. It was found that the perception of tourism imagery significantly influences film-induced image at a level below 0.001. Additionally, film-induced image significantly influences behavioral intention at a level below 0.05.

Considering the overall influence of latent variables in the developed structural equation model, it appears that film exposure has a direct influence on film-induced image with a coefficient of 0.531. Additionally, it indirectly affects behavioral intention through film-induced image with a coefficient of 0.405. Moreover, film-induced image has a direct influence on behavioral intention with a coefficient of 0.602.

Hypothesis testing results:

H1: Film exposure positively influences the Film-Induced Image of tourist destinations among Chinese tourists: *accepted*

H2: Film-Induced Image positively affects the behavioral intention of Chinese tourists: *accepted*

H3: Film exposure indirectly influences the behavioral intention of Chinese tourists, mediated by Film-Induced Image: *accepted*

Discussions

The acceptance of all three hypotheses highlights the significant influence of film exposure in shaping the perceptions and behavioral intentions of Chinese tourists. These findings indicate that films are not just a form of entertainment but also serve as powerful tools for destination marketing. The ability of films to create a strong, positive image of a destination has both direct and indirect impacts on tourists' intentions to visit, making film-induced imagery a crucial element in tourism promotion strategies.

In line with Bolan, Boyd & Bell (2010), the involvement of tourism authorities in promoting film locations through activities such as movie maps, internet campaigns, and location tours can effectively transform film settings into tourism destinations. Such proactive engagement helps tap into the emotional and nostalgic motivations of film tourists, generating both economic and image benefits for the destination. Conversely, a lack of strategic promotion may result in missed opportunities to capitalize on cinematic exposure and develop the full tourism potential of film-related sites.

Research by Yao, Suwannarat & Sonthiprasat (2020) and Shi & Phakdee-auksorn (2024) further emphasizes the impact of Thai media on Chinese tourism. These studies demonstrate that Thai films and dramas play a significant role in crafting a positive image of Thailand among Chinese audiences, which in turn stimulates their interest in visiting the country. The structural equation modeling analysis provides valuable insights into how factors like film exposure and satisfaction directly and indirectly affect Chinese tourists' behavioral intentions.

Given these findings, it is essential for Thailand to capitalize on the popularity of its media content in China to boost tourism from this market. Practical strategies should focus on leveraging popular online platforms used by Chinese tourists, such as Chinese-language tourism websites, social media, and travel apps. Tourism managers should enhance the readiness of the industry to accommodate Chinese visitors, including providing language training for staff, tailoring services to their preferences, and improving on-site signage and information in Chinese. Promoting engaging stories and scenarios in films or TV programs that

resonate with Chinese audiences, while ensuring cultural accuracy and sensitivity, will help maintain Thailand's appeal in this competitive market segment.

Limitations: While the study provides valuable insights, the findings are specific to Chinese tourists visiting Thailand and may not be directly generalizable to other countries or cultural contexts. Differences in media consumption habits, cultural preferences, and tourism infrastructure may limit the applicability of the results elsewhere. Future research should consider cross-cultural studies involving tourists from other nationalities and investigate other forms of media influence on travel behavior to enhance generalizability.

Future Research Recommendations: Further studies could examine longitudinal effects of film exposure on tourism behavior over time, explore additional mediating or moderating factors (e.g., social media influence, peer recommendations), and test the model in different destination contexts to validate its broader applicability. Such research would provide tourism managers and marketing professionals with deeper insights for strategic planning and targeted promotion.

Conclusion and suggestions

This study highlights the pivotal role of film exposure in shaping the perceptions and behavioral intentions of Chinese tourists toward Thailand. The findings confirm that exposure to Thai films and television dramas positively influences the film-induced image, which in turn enhances specific behavioral intentions such as visiting featured locations, sharing travel experiences online, recommending destinations to peers, and expressing intentions to revisit. These outcomes indicate that films serve not only as entertainment but also as powerful destination marketing tools that can create emotional connections and motivate real travel behavior.

To further strengthen Thailand's appeal to Chinese tourists, tourism authorities should collaborate with filmmakers to highlight Thai destinations, develop culturally tailored online marketing on Chinese platforms, and enhance service quality through language training and facility improvements. Integrating film-based marketing strategies into tourism promotion can effectively rebuild traveler confidence and accelerate recovery in the post-pandemic era.

New knowledge and the effects on society and communities

The study provides new theoretical and practical knowledge on the significant impact of film-induced tourism, particularly how exposure to films and television dramas shapes the travel intentions of Chinese tourists. By demonstrating that film media can effectively enhance the destination image and influence tourists' behavioral intentions, the research highlights the novel contribution to the Film-Induced Image Model (FIIM), especially in the post-COVID-19 context.

This knowledge enables more targeted and culturally resonant promotional strategies, such as collaborating with filmmakers, creating tailored content on Chinese platforms, and improving tourism services to align with tourist expectations. Such strategies can revitalize local economies, promote cultural exchange, and foster sustainable tourism practices.

Moreover, communities in tourism-dependent areas can benefit from increased economic opportunities, improved infrastructure, and strengthened cultural identity as their locales gain international recognition through film media, reinforcing the societal and community-level impact of integrating cinematic content into tourism marketing.

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Strengthening Higher Education Governance for Local Development: Insights from the Upper Northern Rajabhat Universities

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Abstract

This study investigates the implementation outcomes of the 20-Year Strategic Plan for Local Development (2017–2036) and the governance mechanisms of Rajabhat Universities in Thailand's Upper Northern region. The research pursued three objectives: 1) to evaluate the effectiveness of administrative and governance systems in supporting local development, 2) to identify approaches for strengthening participatory and adaptive governance, and 3) to classify universities according to their local development performance across key domains. Data were collected from 177 purposively selected stakeholders—including university administrators, government officials, private-sector representatives, and community leaders—through a mixed-methods design integrating surveys, interviews, and focus-group discussions. Findings indicate that while the universities have established formal committees and strategic offices that facilitate coordination and collaboration, systemic challenges persist, particularly rigid budgetary procedures, limited project continuity, and insufficient faculty incentives. Quantitative and qualitative analyses reveal strong short-term outcomes in teaching integration, collaboration with local agencies, and technology transfer, but only moderate long-term impacts on household income, community well-being, and educational innovation. Governance flexibility, cross-sectoral partnerships, and continuous monitoring emerge as decisive factors influencing effectiveness. The study deepens existing knowledge by demonstrating how participatory and networked governance arrangements mediate the relationship between national policy mandates and localized development outcomes in regional universities.

Keywords: Higher education governance, Local development strategy, Rajabhat universities, Participatory governance, Thailand

Introduction

Universities worldwide are increasingly repositioned as anchor institutions in local and regional development, serving not only as centers of teaching and research but also as catalysts for social innovation and civic engagement. Recent studies emphasize that the effectiveness of universities as developmental actors depends fundamentally on the quality of their governance systems, particularly their adherence to principles of autonomy, accountability, transparency, and academic freedom (Atanaw et al., 2025; Iqbal & Piwowar-Sulej, 2022). Through sound governance, universities are better able to translate knowledge into sustainable and community-responsive practices.

In Thailand, these global debates find concrete expression in the Rajabhat University (RU) system—a nationwide network of public universities established under the Rajabhat University Act B.E. 2547 (2004) with a royal mandate to advance local development through higher education, particularly in provincial and rural areas. Today, 38 Rajabhat Universities operate across the country, distributed regionally as follows: eight in the North, five in the Bangkok Metropolitan Area, three in the Central region, four in the Western region, two in the Eastern region, eleven in the Northeast, and five in the South. Collectively, they serve approximately 300,000 students nationwide (MHESI, 2024), expanding access to higher education for rural, low-income, and first-generation learners—an essential component of their mission to promote educational equity and local development.

The 20-Year Strategic Plan for Local Development (2017–2036) articulates a national vision of “University Engagement for Sustainability,” identifying Rajabhat Universities as core institutional mechanisms for advancing area-based development. The Plan emphasizes four interrelated pillars—(1) local development, (2) teacher production and development, (3) educational quality enhancement, and (4) administrative reform—supported by the goal of promoting sustainable economic, social, environmental, and educational growth. Within this framework, Rajabhat Universities are expected to act as knowledge and innovation hubs for community-based development, integrating research, teaching, and outreach to strengthen local well-being and resilience (Office of the Council of Rajabhat University Presidents, 2017).

Despite this comprehensive framework, research reveals persistent inconsistencies in implementation. Saengthong et al. (2021) proposed a management model centered on community engagement and strategic planning, yet reported enduring structural and financial barriers. Similarly, Makmee et al. (2022) found that many initiatives lacked alignment with community needs, while Jitruksa et al. (2024) and Petpon & Boonyananta (2024) observed uneven institutional capacity and limited resources across regions. These studies suggest that although the Rajabhat mission is conceptually robust, it remains constrained by internal governance limitations and external systemic pressures (Jantanukul, 2024).

The Upper Northern region exemplifies these tensions. Characterized by mountainous terrain, ethnic diversity, and mixed agricultural and tourism economies, it faces complex challenges such as recurring haze and PM 2.5 pollution, fluctuating agricultural markets, and below-average household incomes. Within this context, Rajabhat Universities act as anchor institutions charged with translating national policy into localized action through research, teaching, and community engagement (Petpon & Boonyananta, 2024). Yet few studies have empirically examined how governance structures influence these universities’ ability to achieve sustainable local development. Addressing this gap, the present study aims to examine how governance structures influence the effectiveness, outcomes, and sustainability of Rajabhat Universities’ local development initiatives under the 20-Year Strategic Plan for Local Development (2017–2036).

The paper is structured as follows: the next section reviews the relevant literature on higher education governance and local development policy in Thailand, followed by the methodology, findings, and discussion. The final sections present policy and operational recommendations, study limitations, and concluding reflections.

Literature Review

The idea that universities should act as drivers of regional transformation has evolved significantly over the past two decades. Early scholarship by Chatterton & Goddard (2000) emphasized universities' capacity to mobilize knowledge for local transformation, while Goddard and Vallance (2013) reframed this role as a "third mission" complementing teaching and research. The Organisation for Economic Co-operation and Development (OECD, 2007) extended this perspective by emphasizing the territorial dimension of higher education, arguing that universities serve as catalysts for knowledge transfer, civic partnership, and innovation. More recent work has moved beyond economic perspectives to incorporate moral and civic responsibilities. Wessell (2025) introduced the notion of the "just anchor," suggesting that higher education institutions (HEIs) must act as ethical agents sustaining community resilience and responding to crises such as inequality and climate change. Rodríguez-Zurita et al. (2024) similarly argue that universities advance the Sustainable Development Goals (SDGs) through transformative learning and social collaboration, while Stephens et al. (2008) conceptualize universities as change agents in sustainability transitions, requiring participatory governance and long-term institutional learning.

Across these contributions, a common insight emerges: the developmental effectiveness of universities is inseparable from the quality of their internal governance systems. Governance in higher education refers to the principles and structures guiding institutional decision-making, balancing state regulation with autonomy and innovation. Its key dimensions—accountability, transparency, autonomy, and academic freedom—directly influence institutional quality and responsiveness (Atanaw et al., 2025). Atanaw et al. (2025) demonstrated that universities with greater autonomy and academic freedom exhibit stronger educational quality, whereas excessive bureaucracy weakens performance. Similarly, Iqbal and Piwowar-Sulej (2022) found that sustainable leadership, mediated by social innovation, enhances universities' sustainable performance and societal impact. Governance thus functions not merely as procedure but as a strategic mechanism linking institutional integrity with developmental outcomes.

In Thailand, the Rajabhat University (RU) system represents a localized expression of this governance–development nexus. The system comprises 38 public universities established under the Rajabhat University Act B.E. 2547 (2004) with a royal mandate to advance local development, teacher education, and social equity, particularly in rural and provincial areas. The 20-Year Strategic Plan for Local Development (2017–2036) formalizes four interrelated pillars—local development, teacher production, educational quality enhancement, and administrative reform—with the first pillar defined as the Rajabhat system's core mission (Office of the Council of Rajabhat University Presidents of Thailand, 2018; Makmee et al., 2022). The Plan articulates "sustainable local development through knowledge" as its overarching vision and directs each university to align local projects with community needs, regional strengths, and national priorities. Within this framework, Rajabhat Universities are positioned as anchor institutions bridging state strategies and grassroots development.

The Upper Northern region exemplifies these governance challenges. Rajabhat Universities here operate amid complex socio-economic and ecological conditions—mountainous terrain, ethnic and linguistic diversity, and reliance on agriculture and tourism—alongside recurring crises such as haze and forest fires. These contextual factors heighten the need for adaptive, participatory governance capable of coordinating diverse actors and

sustaining long-term partnerships. Yet, despite policy emphasis on local responsiveness, few empirical studies have examined how governance mechanisms influence these universities' ability to meet developmental objectives (Petpon & Boonyananta, 2024). Most existing studies remain descriptive rather than analytical, focusing on strategic frameworks rather than governance processes in practice. This limited empirical evidence highlights a crucial research gap.

While existing studies identify recurrent operational issues such as budget delays, coordination failures, and insufficient monitoring (Jitruksa et al., 2024; Makmee et al., 2022), they rarely interrogate whether these problems stem from deeper structural impediments in governance, including unclear accountability or constrained autonomy (Atanaw et al., 2025). Moreover, the mediating role of leadership and social innovation, shown elsewhere to enhance institutional performance (Iqbal & Piwowar-Sulej, 2022), has not been explored within the Rajabhat context. Consequently, the relationship between governance design and developmental outcomes in Thailand's regional universities remains poorly understood.

This gap underscores the need for closer examination of how governance structures affect development outcomes. While prior studies have identified recurring issues such as budget delays, coordination failures, and weak monitoring (Jitruksa et al., 2024; Makmee et al., 2022), they rarely explore whether these reflect deeper structural impediments—such as unclear accountability or constrained autonomy (Atanaw et al., 2025). Moreover, the mediating role of leadership and social innovation, found elsewhere to enhance institutional performance (Iqbal & Piwowar-Sulej, 2022), remains unexplored in the Rajabhat context. Consequently, the relationship between governance design and developmental outcomes in Thailand's regional universities is still poorly understood.

Addressing this gap, the present study examines how governance structures shape the implementation of the 20-Year Strategic Plan for Local Development (2017–2036) in three Rajabhat Universities in Northern Thailand. Specifically, it analyzes how the governance principles of autonomy, accountability, transparency, and academic freedom are applied in university decision-making and community engagement. Accordingly, the study aims to (1) monitor and evaluate the administrative mechanisms and local development outcomes of Rajabhat Universities in the Upper Northern region; (2) examine approaches for improving and developing administrative systems that facilitate local development; and (3) categorize Rajabhat Universities based on their local development performance, with emphasis on outcomes for local communities. The findings contribute empirical evidence to both national and international debates on higher education governance and offer insights into how participatory and adaptive governance can strengthen universities' developmental missions and advance Thailand's broader pursuit of equitable and sustainable regional growth.

Methodology

This study employed a mixed-method research design, specifically a parallel-database approach (Creswell & Plano Clark, 2018), in which qualitative and quantitative data were collected concurrently, analyzed separately, and integrated during interpretation. This design suited the study's objectives, combining an assessment of administrative mechanisms and performance indicators with an exploration of strategies for governance improvement. The quantitative strand captured measurable patterns in local development outcomes, while the qualitative strand provided explanatory insights from key stakeholders. Integration of both strands enhanced the robustness and validity of the findings.

Research Sites

The research was conducted at three Rajabhat Universities in the Upper Northern region of Thailand, each assigned a pseudonym for analytical clarity. University A, founded in the 1920s, is the oldest and largest of the three, with seven faculties and more than 17,000 students across urban and rural campuses. University B, established in the early 1970s, has seven faculties and approximately 11,000 students, emphasizing teacher education, agricultural innovation, and professional programs such as nursing. University C, founded in the late 1960s, operates fourteen faculties and serves over 10,000 students, combining formal degree programs with extensive short-term and lifelong learning initiatives.

These institutions were purposively selected to represent the Rajabhat system's distinctive mission as regional universities dedicated to local development, while also illustrating differences in size, history, and governance. University A exemplifies a centralized administrative model, University B has implemented participatory governance reforms, and University C applies a community-based management approach. This variation provides a comparative foundation for analyzing how governance structures influence implementation of the 20-Year Strategic Plan for Local Development (2017–2036).

Participants

Participants were selected through purposive sampling of stakeholders directly involved in or affected by Rajabhat Universities' local development initiatives. On the qualitative side, data were collected from university administrators, provincial governors or their representatives, government officials, private-sector representatives, local government leaders, and community leaders, totaling fifty-four respondents. On the quantitative side, survey data were collected from faculty members, students, and community members, yielding 123 responses. Altogether, the study engaged 177 participants, thereby capturing perspectives from both institutional and community stakeholders.

Data collection and analysis

Data collection combined documentary analysis with field research. Policy documents, official reports, and previous evaluations established the contextual foundation. Qualitative data were obtained through structured interviews, observations, and focus-group discussions. Quantitative data were gathered through questionnaires using a five-point Likert scale and an assessment manual comprising nineteen indicators across four dimensions: economic, social, environmental, and educational.

Data were analyzed in three stages. Documentary and qualitative data were coded inductively to identify thematic patterns and summarized in narrative form. Quantitative data were analyzed using descriptive statistics (mean, standard deviation, and frequency distributions), with results ranked by importance and average score. Cluster analysis was then applied to classify the universities according to their performance across the four local development domains.

Results

Objective 1: To monitor and evaluate the administrative mechanisms and local development outcomes of the Upper Northern Rajabhat Universities

The analysis combined quantitative performance indicators with qualitative insights from university administrators, faculty members, and community leaders to evaluate how governance mechanisms shape local development implementation. Overall, the results show consistently strong administrative systems across the three universities, although the depth and continuity of community impact vary considerably.

Quantitatively, the assessment of administrative mechanisms yielded high scores across all four dimensions—strategic processes, organizational structures, operational systems, and management processes (Table 1). The strongest performance appeared in collaborative and participatory practices, particularly in partnerships with local administrative organizations (mean = 4.71) and participatory community needs assessments (mean = 4.63). Promotion of personnel with local development capacity (mean = 4.57) and establishment of formal project committees (mean = 4.54) also received high ratings, indicating effective planning and coordination mechanisms.

Table 1 highlights that the highest-rated dimensions relate to participatory governance and institutional collaboration. Qualitative findings reinforce these patterns. Across all three universities, administrators emphasized that effective community projects depended on “continuous consultation with subdistrict and municipal offices” and “joint design with local farmer groups and small enterprises.” At University C, both administrators and faculty highlighted that the newly established Office of Local Development Strategy had significantly improved coordination among faculties and accelerated collaboration with local agencies. Faculty members described it as “a platform that links academic and community goals more directly than before.”

Table 1 Evaluation of administrative mechanisms and local development outcomes

Dimension / Outcome	Highest-rated items	Mean score	Overall level
Strategic processes	Promotion of personnel with local development capacity	4.57	High
	External collaboration (state, private, civil)	4.43	High
	Integration of teaching with community projects	4.37	High
Organizational structure	Committees for project approval/implementation	4.54	High
	Clear policies at university and faculty levels	4.46	High
	Permanent monitoring committees	4.43	High
Operational systems	Formal project proposal meetings	4.51	High
	Systematic monitoring procedures	4.46	High
	Non-duplicative planning	4.14	High
Management processes	Collaboration with local administrative organizations	4.71	Very High
	Participatory community needs assessments	4.63	Very High
	Multi-stage planning and oversight	4.37	High
Outputs	Integration of teaching/research with projects	4.43	High
	Application of interdisciplinary knowledge	3.86	Moderate–High
	Knowledge/technology transfer	3.80	Moderate–High
Outcomes	Integration of new knowledge into teaching	4.29	High
	Community changes in knowledge/attitudes/behaviors	4.03	High
	Increased community databases	3.94	Moderate–High
Impacts	Extension of academic services into research	3.60	Moderate
	Household income increase	3.17	Moderate
	New curricula based on community knowledge	2.91	Low–Moderate
	Community well-being index	2.77	Low

At University A, respondents underscored the benefits of long-standing partnerships, explaining that “the provincial governor’s office often seeks university input for local projects,” though several noted that limited budgetary flexibility constrains innovation. University B participants pointed to a different challenge—while administrative structures exist, “planning and monitoring happen in separate silos,” resulting in duplicated reporting and reduced efficiency. Community leaders also observed that projects are “visible and useful” but often “short-lived,” suggesting that the issue lies not in commitment but in continuity.

However, the data also reveal a consistent decline from process- and output-level achievements to long-term impact indicators. Immediate outputs, such as integration of teaching and research with local projects (mean = 4.43) and application of interdisciplinary knowledge (mean = 3.86), were evaluated as high. Yet, impact indicators—including household income increases (mean = 3.17), creation of community-based curricula (mean = 2.91), and overall well-being indices (mean = 2.77)—remained moderate or low. Interview data illuminate this pattern: several administrators from all three institutions explained that “project cycles are too short for visible economic change,” while community leaders repeatedly mentioned that “activities often end before benefits become self-sustaining.”

Across all institutions, this imbalance between short-term outputs and sustainable impact underscores the limitations of current governance arrangements. Despite well-structured committees and formal monitoring systems, qualitative feedback suggests that rigid budgeting procedures, fragmented planning, and heavy teaching workloads constrain faculty participation in long-term community initiatives. As one faculty respondent summarized, “the universities have systems for every step, but not the time or flexibility to make them last.”

In summary, Objective 1 demonstrates that while the Upper Northern Rajabhat Universities possess well-organized administrative mechanisms and produce measurable short-term outcomes, they face persistent challenges in translating these processes into enduring community transformation. The gap between administrative efficiency and sustainable impact reflects governance constraints related to budget rigidity, faculty incentives, and project continuity—issues explored further under Objective 2.

Objective 2: To identify approaches for improving and developing governance structures that support local development

Building on the preceding findings, qualitative interviews, focus groups, and documentary evidence identified five interrelated approaches for strengthening the governance capacity of Rajabhat Universities in the Upper North. Triangulated perspectives from administrators, faculty, and local stakeholders converged on the need for greater flexibility, integration, and institutional incentives to sustain community impact.

The first approach concerns the redesign of project management structures to enhance flexibility. Across all three universities, administrators emphasized that rigid budget allocation and disbursement rules limit timely implementation of local development projects. Faculty participants added that the multi-step approval process often delays activities until the end of fiscal years, reducing their effectiveness. University C provides a notable counterexample, where the establishment of an Office of Local Development Strategy and Academic Services reporting directly to the President has improved responsiveness and coordination. Both administrators and faculty credited this direct reporting line with reducing bureaucratic delays, enhancing transparency, and ensuring that project approvals are based on feasibility and community needs rather than procedural compliance. The structure was widely cited by respondents as a key factor in maintaining engagement and continuity with local partners.

The second approach emphasizes the systematization of collaboration with both internal and external partners. Effective governance requires structured cooperation within the

university and with provincial agencies, local governments, and community organizations. Across all three cases, respondents referred to the “upstream–midstream–downstream” model to describe how projects should integrate design, implementation, and evaluation phases. Administrators and community leaders alike stressed that this approach would align university activities with provincial development plans and support continuous, cyclical monitoring throughout project life cycles. Provincial officials confirmed that joint planning and cross-sector coordination are essential to preventing duplication and improving resource efficiency.

The third approach involves expanding inter-university partnerships. Participants at all institutions recognized the value of collaboration between Rajabhat Universities and other higher education institutions—particularly Chiang Mai University and the University of Phayao—to strengthen academic capacity and credibility. Administrators explained that such partnerships can facilitate faculty exchange, joint research supervision, and co- hosted community projects, thereby reinforcing Rajabhat Universities’ position as regional development hubs. Faculty members further noted that collaboration enhances access to specialized expertise and creates opportunities for knowledge co-production between academic and community actors.

The fourth approach centers on reforming financial governance systems. Budgetary inflexibility emerged as one of the most consistent themes across all interviews. Delays in procurement and disbursement frequently curtailed field activities and disrupted project continuity. Respondents in Universities A and B proposed the establishment of dedicated *budget-support units* or “*budget mentors*” to assist faculty in navigating financial regulations and ensure timely release of funds. Simplified procurement processes and limited authority to reallocate within approved budgets were also recommended to better align fiscal management with real field conditions and community priorities.

The fifth approach focuses on strengthening faculty incentives and academic recognition. Participants consistently reported that local development work is undervalued in workload and promotion systems. As one lecturer noted, “community projects count for service, not scholarship,” a perception that discourages sustained involvement. Respondents proposed the introduction of workload credits, direct honoraria, and clearer mechanisms for converting project outcomes into scholarly outputs. Administrators concurred that integrating community engagement into evaluation criteria would embed local-development work within the academic mission.

Overall, the findings suggest that governance reform within the Rajabhat system must advance on two interconnected levels. Structurally, universities require coherent coordination, flexible budgeting, and stronger partnerships to translate strategic intent into effective practice. Culturally, they must cultivate an ethos that recognizes community engagement as integral to academic excellence. Genuine progress therefore depends on shifting governance from procedural control toward participatory and learning- oriented approaches that sustain long-term local impact.

Objective 3: To classify Rajabhat Universities in the Upper Northern region according to their local development performance

This section classifies the three Rajabhat Universities’ performance in local development across four domains—economic, social, environmental, and educational—using quantitative indicators complemented by qualitative interview data. The combined evidence illustrates variation among institutions and highlights governance factors shaping their effectiveness. Table 2 presents the comparative performance scores. Across the system, the average performance was 68.78 percent (fair). Among the four domains, economic outcomes ranked highest (72.29 percent), followed by social (69.40 percent), environmental (67.45 percent), and educational (63.62 percent). The data reveals a consistent pattern: Rajabhat

Universities perform most strongly in economic and social projects but face continuing challenges in educational innovation and environmental sustainability.

Table 2 Performance of Upper Northern Rajabhat Universities in Local Development (by domain)

University (Pseudonym)	Overall Score (%)	Rating	Economic	Social	Environmental	Educational	Domain Emphasis
University A	73.70	Good	75.31	70.69	77.68	73.12	Environment & Economy
University B	64.11	Fair	69.11	66.00	58.03	57.74	Economy & Society
University C	68.53	Fair	72.45	71.52	66.64	60.00	Economy & Society
System-wide average	68.78	Fair	72.29	69.40	67.45	63.62	Economy first, then Society

University A achieved the highest overall score at 73.70 percent (good), reflecting strong institutional performance across all four domains. The environmental dimension (77.68 percent) ranked highest, followed by economic (75.31 percent), educational (73.12 percent), and social (70.69 percent).

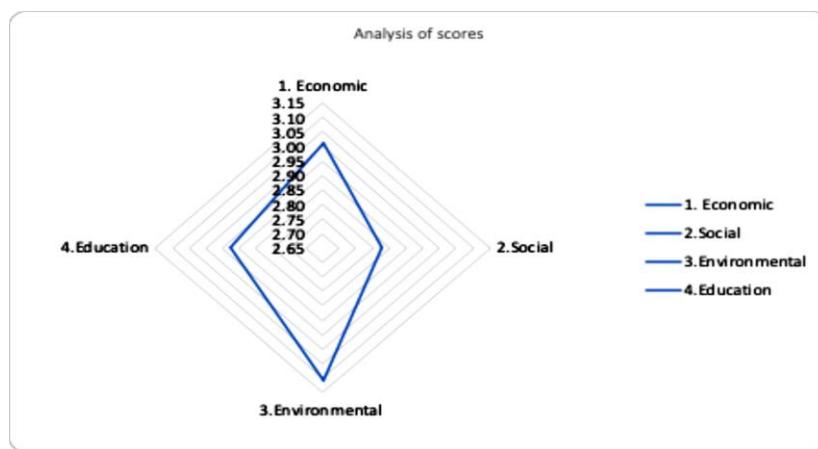


Figure 1 Performance of University A across four local development domains

Figure 1 highlights this balanced performance profile, where the university's environmental and economic initiatives reinforce one another through long-term community partnerships.

Administrators explained that these results stem from the university's integrated planning framework, combining faculty-level committees with cross-provincial coordination. One official observed that "regular consultation with provincial and subdistrict authorities allows projects to continue beyond one-year cycles." This participatory process, supported by a Local Development Strategy Committee, ensures that project priorities align with provincial sustainability plans and government funding streams. Faculty respondents further noted that environmental projects—such as watershed rehabilitation and air-quality monitoring—were embedded into teaching and student service-learning modules, helping to bridge academic and community outcomes. However, some administrators cautioned that maintaining this balance

requires continuous budget and staff support. Overall, University A demonstrates that structured coordination and sustained partnerships translate directly into stronger and more balanced performance across domains.

University B recorded an overall score of 64.11 percent (fair), with moderate strengths in economic (69.11 percent) and social (66.00 percent) dimensions, but weaker performance in environmental (58.03 percent) and educational (57.74 percent) areas.

Interview data indicated that most initiatives are short- term and output- oriented, emphasizing skills training, local entrepreneurship, and income generation. As one administrator remarked, “procurement delays make it difficult to maintain community programs once the fiscal year ends.” Faculty members echoed that project outputs are rarely incorporated into curriculum design or research, with one lecturer explaining that “we create good models for farmers, but they end when funding ends.” These perspectives clarify the link between lower scores in the environmental and educational domains and limited institutional mechanisms for knowledge integration.

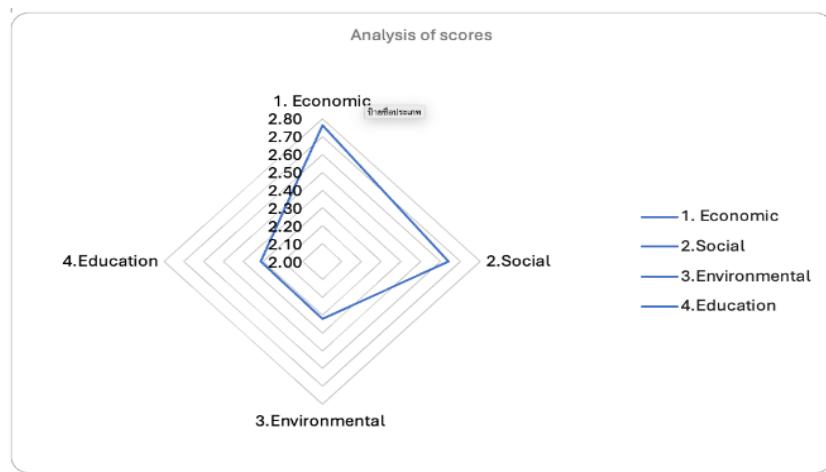


Figure 2 Performance of University B across four local development domains

Overall, University B’s experience illustrates that budget rigidity and fragmented coordination constrain the university’s developmental role. Strengthening fiscal flexibility, linking community projects to teaching and research, and developing cross-sector partnerships could help shift its activities from short- term productivity toward sustained local transformation.

University C achieved an overall score of 68.53 percent (fair), with notable results in the economic (72.45 percent) and social (71.52 percent) domains, and lower performance in environmental (66.64 percent) and educational (60.00 percent) areas. Figure 3 shows a performance pattern similar to University B, though with slightly higher averages across all domains.

Interview data revealed that University C’s community- based economic and tourism programs—including cross- border trade initiatives and sustainable agriculture training, have produced visible local benefits. A local leader commented that “our young farmers have learned new techniques through the university’s workshops and can now access better markets.” However, administrators acknowledged that integration with academic planning remains limited: research, teaching, and service activities operate in parallel rather than through unified design.

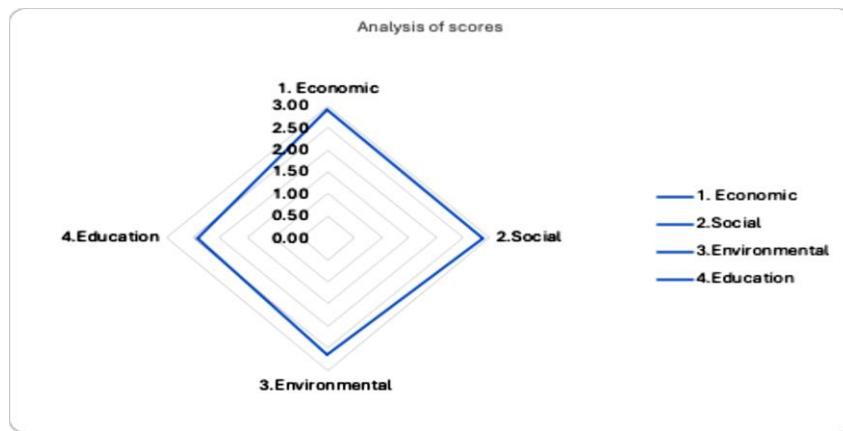


Figure 3 Performance of University C across four local development domains

Respondents agreed that the recently established Office of Local Development Strategy has improved coordination and responsiveness but still faces internal fragmentation between faculties. As one dean noted, “the office has the right vision, but projects still depend on individual champions.” This partial integration helps explain the moderate overall performance: progress is visible in outreach and partnerships but less in institutional learning and curricular reform.

As shown in Table 2 and Figure 4, performance across the three universities ranged from 64.11 to 73.70 percent, averaging 68.78 percent overall, corresponding to a fair rating. Across domains, economic (72.29%) and social (69.40%) dimensions consistently outperformed environmental (67.45%) and educational (63.62%) outcomes. This pattern illustrates that Rajabhat Universities have become strong catalysts for regional economic and social improvement, while long- term educational and environmental impacts remain comparatively limited.

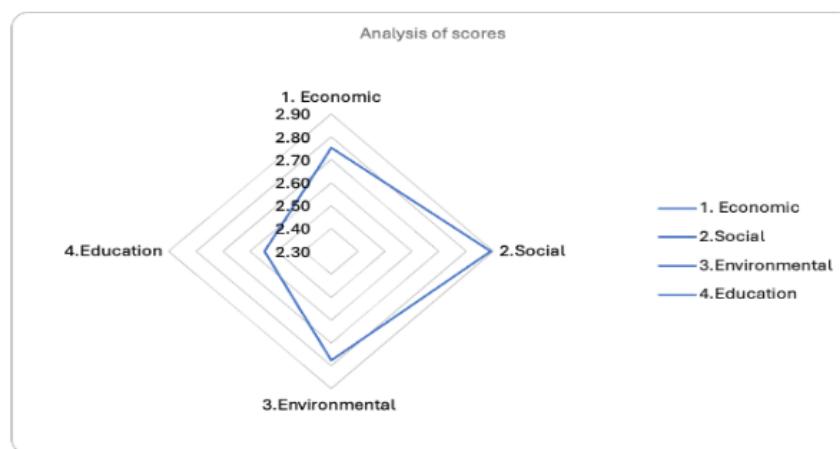


Figure 4 Comparative performance of Universities A, B, and C across four local development domains

Participants across all institutions confirmed that economic and social projects attract more political and financial support because they yield “visible and fundable results.” In contrast, initiatives in curriculum reform or ecological resilience require sustained commitment and flexible funding rarely available under current regulations. Addressing these structural barriers through adaptive governance and stronger inter-university collaboration could enhance institutional capacity to generate balanced and lasting community impact.

Overall, the classification shows that the Rajabhat Universities have become effective regional drivers of economic and social development, yet continue to face barriers in achieving lasting transformation in educational and environmental domains. Their developmental performance is shaped primarily by the degree of institutional coherence, fiscal flexibility, and inter-university collaboration. Strengthening these governance capacities will be critical for enabling the Rajabhat system to evolve from short-term project implementation toward a more sustainable and inclusive model of local development.

Discussions

The findings of this study confirm that the Upper Northern Rajabhat Universities have made tangible progress in operationalizing the 20- Year Strategic Plan for Local Development (2017–2036), yet persistent governance and structural challenges continue to limit their long-term impact. On the positive side, the universities have developed systematic plans across the four domains of economy, society, environment, and education, supported by clear indicators and committee- based governance systems. These mechanisms have facilitated effective outputs, including the integration of teaching and research with community projects and the generation of locally relevant knowledge. However, the evidence also reveals that these achievements remain largely short- term. Gains in household income, curriculum reform, and community well- being are modest, reflecting a broader challenge in higher education's engagement with local development—namely, that project- level success rarely translates into structural transformation (Fongwa, 2023).

These results can be interpreted within the wider global discourse on universities as anchor institutions. International research highlights that universities are increasingly expected to act as engines of regional transformation, advancing innovation, equity, and sustainability not only through academic functions but also through governance and civic partnership (Chatterton & Goddard, 2000; Goddard & Vallance, 2013; OECD, 2007). The Rajabhat experience both affirms and extends this discussion. While a strong royal mandate provides strategic direction, institutional practices— such as centralized budget control, limited autonomy, and weak faculty incentives— constrain the universities' ability to fulfill their mission. This finding is consistent with Atanaw et al. (2025), who demonstrate that excessive managerial accountability without adequate autonomy weakens institutional performance, and with Iqbal & Piwowar-Sulej (2022), who show that sustainable leadership yields tangible results only when organizational systems promote social innovation.

The governance mechanisms observed in the three universities illustrate these dynamics. University C's creation of a dedicated Office of Local Development Strategy demonstrates the advantages of centralized coordination and responsiveness, whereas the more decentralized, faculty- based approaches at Universities A and B have produced fragmented planning and uneven implementation. Interview participants from University A and C emphasized that cross-faculty coordination and regular consultation with provincial authorities helped maintain project continuity, while respondents from University B pointed to duplication and delays caused by overlapping responsibilities. This variation mirrors earlier Thai research emphasizing the need for coherent governance structures and cross- institutional collaboration to sustain regional higher-education initiatives (Makmee et al., 2022; Saengthong et al., 2021). The comparative performance data further show that economic and social domains are consistently prioritized over environmental and educational outcomes—an imbalance that limits alignment with Thailand's Bio-Circular-Green (BCG) Economy Model and the United Nations Sustainable Development Goals (SDGs). Such misalignment reduces opportunities for policy integration, access to BCG- related funding, and participation in international benchmarking for sustainability performance.

Another significant finding concerns the limited integration of community assets into project design and implementation. Many initiatives emphasize mobilizing economic resources—budgets, outputs, and short-term deliverables—while neglecting local knowledge, social networks, and cultural capital as developmental resources. As a result, projects often generate activity without continuity or deep social transformation. Sustainable local development, however, depends not only on financial and technical resources but also on activating these non-financial assets to strengthen community ownership and long-term resilience.

A further limitation lies in the fragmented collaboration landscape. Effective anchor institutions typically operate through dense, multi-stakeholder networks linking universities, local governments, the private sector, and civil society (Goddard & Vallance, 2013; OECD, 2019; Wessell, 2025). The Rajabhat Universities of the Upper North, by contrast, continue to rely primarily on bilateral partnerships rather than enduring collaborative alliances. This observation is consistent with Petpon & Boonyananta (2024), who attribute persistent disparities in Thai higher-education governance partly to weak inter-university coordination and limited cooperation with local agencies. Without stronger horizontal and vertical networks, Rajabhat Universities risk remaining isolated and unable to achieve systemic transformation.

Overall, the evidence underscores that while Rajabhat Universities continue to fulfill elements of their royal mandate as regional development institutions, their effectiveness remains constrained by governance weaknesses. Strengthening budgetary flexibility, embedding continuous monitoring and evaluation, incentivizing faculty engagement, and building long-term partnerships across sectors are essential steps toward sustainable impact. To address these challenges, this study proposes a Participatory Governance Framework for Sustainable Local Development, which emphasizes three interlinked principles: shared responsibility, adaptive autonomy, and networked accountability. Shared responsibility entails integrating decision-making among universities, government agencies, and community actors to ensure inclusive planning and joint ownership. Adaptive autonomy allows universities to exercise context-specific flexibility within a unified national policy framework, enabling responsiveness to diverse local conditions. Networked accountability involves establishing joint evaluation systems that balance transparency with innovation, fostering trust and continuous learning across institutional boundaries. Together, these principles offer a strategic pathway for transforming regional universities from project implementers into collaborative anchor institutions capable of generating sustained, inclusive, and locally grounded development.

Considering these findings, achieving sustainable and equitable local development requires governance reform that extends beyond administrative adjustments to encompass strategic coordination, participatory planning, and long-term partnership building. The proposed framework provides a conceptual foundation for this shift, but its practical realization depends on concrete actions at both the policy and operational levels. The next section therefore translates these conceptual insights into actionable recommendations aimed at strengthening the institutional capacity of Rajabhat Universities to function as genuine anchor institutions—capable not only of implementing development projects but also of sustaining systemic transformation within their regions.

Conclusion and suggestions

Policy and Operational Recommendations

To translate the findings into practice, this study proposes a two- tiered set of recommendations aimed at strengthening the governance capacity of Rajabhat Universities in advancing sustainable local development. The first tier focuses on the policy level, emphasizing systemic coordination and inter-agency alignment, while the second tier addresses institutional and operational practices for effective implementation. Together, these measures would enable Rajabhat Universities to evolve from project-based implementers into enduring regional anchors of inclusive and participatory development.

At the policy level, Rajabhat Universities should deepen integration with provincial and regional development strategies. Joint planning with provincial administrations would improve resource efficiency, reduce duplication, and align university initiatives with regional and national priorities—an approach consistent with OECD (2019) guidance on place-based higher education development. Collaboration should also extend to line ministries, the private sector, and civil society through multi- stakeholder partnerships such as joint investment programs, market-access initiatives, and co-financing mechanisms with banks or development agencies. Equally important is the creation of robust monitoring and evaluation systems. Joint committees comprising university and external representatives would enhance accountability and transparency while focusing evaluation on community outcomes rather than procedural compliance. Collectively, these measures would move Rajabhat Universities beyond fragmented project management toward a coherent, sustainable model of development governance.

At the operational level, three strategic improvements are essential. First, universities should institutionalize a needs- based approach to project design by identifying genuine community priorities through participatory assessment. This would ensure that initiatives reflect real social, economic, and environmental conditions rather than administrative directives. Second, implementation should shift from an output-oriented to an impact-oriented perspective, measuring success by long- term community capacity, knowledge utilization, and improvements in livelihoods and well-being. Third, universities should adopt adaptive and context- sensitive procedures— including flexible budgeting, locally embedded project management, and inclusive stakeholder engagement—to enhance trust, minimize delays, and ensure continuity of impact.

Together, these policy and operational recommendations provide a pragmatic framework for translating participatory governance into institutional practice. By reinforcing coordination at the policy level and fostering adaptability within institutions, Rajabhat Universities can consolidate their dual identity as centers of higher learning and as regional development anchors. Through this integrated approach, they can sustain meaningful community partnerships, mobilize diverse knowledge systems, and generate transformative outcomes across the economic, social, environmental, and educational dimensions of local development.

Limitations and Future Research

While this study offers valuable insights into the governance mechanisms shaping local development in the Upper Northern Rajabhat Universities, several limitations must be acknowledged. First, the analysis was confined to three institutions within a single regional cluster, which—though analytically rich—limits the generalizability of the findings across Thailand’s broader Rajabhat network. Future research should adopt comparative approaches across multiple regions to capture how administrative, cultural, and socio-economic differences

influence governance effectiveness. Second, the mixed-method design emphasized descriptive and evaluative aspects; longitudinal or experimental studies could better clarify causal links between governance reforms and developmental outcomes. Third, community perspectives were represented mainly through selected interviews and secondary data. Incorporating participatory or ethnographic methods in future work would deepen understanding of how governance practices are perceived and enacted at the grassroots level. Addressing these limitations would enhance empirical depth and strengthen policy design for sustainable local development within and beyond the Rajabhat system.

Conclusion

This study examined how governance structures shape the implementation of the 20-Year Strategic Plan for Local Development (2017–2036) in three Rajabhat Universities in Northern Thailand. The findings show that while these universities have institutionalized systems for planning, coordination, and performance monitoring, enduring constraints—such as limited budget flexibility, centralized decision-making, and weak inter-organizational collaboration—continue to restrict long-term community impact. Even so, the Rajabhat Universities have advanced the integration of teaching, research, and outreach to support regional development, particularly in the economic and social domains.

Beyond Thailand, the study contributes to global debates on universities as civic and developmental institutions. It underscores that the transformative capacity of regional universities depends not only on their formal mandates but also on the integrity, adaptability, and inclusiveness of their governance systems. Strengthening participatory and networked governance can move universities beyond short-term, project-driven initiatives toward sustainable, community-centered transformation. For Thailand, this suggests that the Rajabhat system's long-standing mission of education for local development can evolve into a dynamic model of collaborative governance—linking institutional innovation with community resilience and aligning local initiatives with both national priorities and global sustainability goals.

New knowledge and the effects on society and communities

This study contributes to understanding higher education governance by showing that Rajabhat Universities in the Upper North have established committees, monitoring systems, and participatory projects that generate short-term benefits such as knowledge transfer, skills development, and community engagement. However, they continue to face challenges in achieving long-term transformative impacts and in fully utilizing local cultural assets for sustainable development. The findings highlight that governance design, budget flexibility, and faculty incentives are decisive factors shaping effectiveness. Strengthening participatory and networked governance systems would enable universities to translate local development initiatives into more sustainable and inclusive outcomes.

Acknowledgments

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Negotiating Cultural Identity: Fusion and Innovation in the Luolong Lion Dance of the Sichuan-Tibet Tea-Horse Road

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Abstract

This qualitative research examines the Luolong Lion Dance, a culturally hybrid folk performance that originated along the Sichuan-Tibet Tea-Horse Ancient Road. The study aims to explore how the Han Chinese lion dance evolved through interaction with Tibetan religious, aesthetic, and musical traditions. Data collection was conducted through literature review, field observation, and interviews with local performers. Using the theory of cultural integration, the study found that the dance developed through three stages: contact, selection, and integration. The lion dance was initially brought to the Tibetan region through trade and migration. It was then selectively adapted to include rhythmic patterns from Tibetan pot dance and costume elements reflecting local beliefs. Eventually, a fully integrated form emerged, combining Han lion dance structure with Tibetan symbolic and stylistic features.

The research reveals that the Luolong Lion Dance is not a simple borrowing but a new cultural creation reflecting the dynamic coexistence of ethnic traditions. This offers new insights into how folk arts evolve as tools of identity negotiation and cultural sustainability. The findings contribute to performance studies and heritage preservation, and they highlight the potential of traditional dance to promote social cohesion in multiethnic communities. While statistical data was not the focus due to the qualitative nature of the research, the study emphasizes the frequency and consistency of cultural elements shared across communities. This work provides valuable knowledge for scholars, cultural practitioners, and policymakers interested in intercultural understanding and community-based cultural preservation.

Keywords: Sichuan-Tibet tea horse road, Cultural integration, Han-Tibetan fusion dance, Luolong lion dance

Introduction

The Sichuan-Tibet Tea-Horse Ancient Trail is located in the southwestern interior of China, stretching from Ya'an in Sichuan Province in the east to Shigatse in Tibet in the west. It serves as a vital transportation artery connecting the inland regions with the Qinghai-Tibet Plateau, as well as an economic corridor and cultural corridor developed through the tea-horse trade. This route originated during the Tang Dynasty and flourished during the Ming and Qing Dynasties. It not only witnessed the prosperous history of the thousand-year-old tea-horse trade but also played a pivotal role as a bridge for cultural exchange and integration between Han and Tibetan cultures during the prolonged process of ethnic interaction.

This route spans regions inhabited by multiple ethnic groups, giving rise to diverse forms of dance culture and forming a uniquely regional and ethnic dance landscape in the Sichuan-Tibet region. Due to differences in geographical environment, economic structure, and religious beliefs, Han and Tibetan folk dances exhibit significant diversity and uniqueness in terms of movement style, content expression, and rhythmic structure. However, the existence of the Tea-Horse Ancient Road facilitated frequent transportation and trade along its route. Merchants, caravans, and porters, through their long-distance migrations and interactions, not only facilitated the circulation of goods but also served as important mediators for cultural transmission and exchange. It was precisely through this cross-ethnic, multi-cultural interaction and exchange that Tibetan dances, as well as the interaction between Tibetan and Han dances, underwent continuous mutual borrowing and integration. Ultimately, this gave rise to the Luolong Lion Dance in the Luolong region, a dance form that distinctly embodies the fusion of Han and Tibetan cultures.

Currently, academic research on the dance culture of the Tea Horse Road primarily focuses on specific folk dance forms and their historical transmission in a particular region, or comparative analyses of two similar dance forms, with limited systematic study of the fusion of folk dances among multiple ethnic groups along the route. As an important economic and cultural corridor connecting Sichuan and Tibet, the dance cultural interactions and integration formed through the Tea Horse Road in promoting ethnic exchanges, interactions, and integration have not yet received sufficient attention from the academic community. Taking the Luolong Lion Dance as an example, relevant records can only be found in the Luolong County Annals, and there is still a lack of in-depth discussion on its dance form, historical origins, Han-Tibetan cultural fusion characteristics, and its fusion mechanism.

To fill this research gap, this paper takes the Luolong Lion Dance as its research object and, based on multiple field surveys, uses the three-stage model of 'contact-selection-integration' proposed by Yun Rong in his theory of cultural integration to systematically analyse the process of Han and Tibetan fusion in the context of the Sichuan-Tibet Tea Horse Road. The research focuses on: how the Luolong Lion Dance achieved contact with heterogeneous cultures through the Tea-Horse Ancient Road; the choices made in terms of dance movements, musical styles, performance venues, and costumes and props during the contact process; and how these elements were reorganised and integrated during the fusion stage to ultimately form a dance form with regional and multi-ethnic characteristics.

This study not only broadens the research perspective on the cultural integration of dance in the Sichuan and Tibet sections of the Tea Horse Road, but also fills the gap in academic research on the Luolong Lion Dance, providing a theoretical basis and empirical reference for future in-depth exploration of the mechanisms of cultural exchange and integration between Han and Tibetan dance.

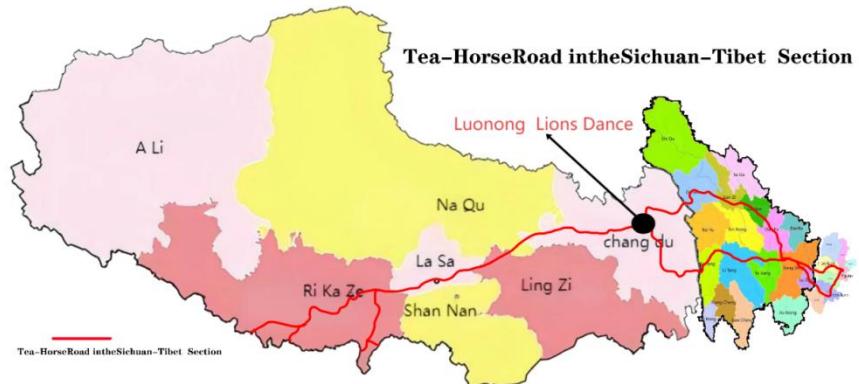


Figure 1 Location of Luonong Lion Dance on the Sichuan-Tibet Tea-Horse Road
(Source: Researcher)

Objectives

To study the process of fusion in the Han-Tibetan fusion dance Luonong Lion Dance.

Literature review

Sichuan-Tibet Tea Horse Road

The Sichuan-Tibet Tea-Horse Ancient Trail was an important trade and cultural corridor in southwestern China, originating in the Tang and Song dynasties and flourishing during the Ming and Qing dynasties. Its route stretched from Ya'an in Sichuan Province to Shigatse in Tibet, serving as a vital link between Han Chinese regions and Tibetan areas. This ancient route not only served as a trade route for tea and horses but also became an important vehicle for cultural exchange, interaction, and integration between Han and Tibetan cultures over the long course of history (Lu, 2021). The mutually dependent relationship formed by the tea-horse trade led to frequent exchanges of lifestyles, religious beliefs, and artistic forms among different ethnic groups. The commercialisation of towns along the route and the coexistence of multiple ethnic groups further promoted the reconstruction and sharing of cultural identity (Liu, 2021).

Within the tea-horse trade system, tea became an essential commodity in Tibetan society, while the fine horses of the Tibetan regions were highly sought after in inland areas. This mutually beneficial relationship not only maintained economic ties but also facilitated the interweaving of cultural forms. For example, the route from Ya'an to Kangding was the core pathway for tea entering Tibet. Porters, as the primary transport labour force, spread the language, customs, and beliefs of inland regions while traversing mountains and valleys. Potang, as a hub along the route, not only served commercial functions but also became an important venue for multi-ethnic exchange, feasting, and song and dance. Additionally, the integration of tea culture with Tibetan Buddhism gave rise to unique temple tea-drinking rituals, blending Han tea etiquette with Tibetan religious practices and providing conditions for the artistic expression of faith and daily life (Lu, 2021).



Figure 2 Route Map of the Ancient Tea and Horse Road in Sichuan and Tibet Location: Ya'an Museum (Source: Researcher)

Cultural Integration

The theory of cultural integration was not first proposed by a single scholar; rather, research findings from multiple disciplines have contributed to the development of the theory. From Turgon's idea of social integration to Gordon's stage theory of cultural integration to Bass's theory of boundary adjustment, cultural integration has gradually evolved into a multidimensional theoretical framework that has been widely used to explain the phenomenon of cultural intermingling in the context of migration, cross-cultural exchange and globalisation. In his classic work, *The Theory of the division of labour in society* (Durkheim, 1893), Turgot explored how societies achieve integration through division of labour and cooperation. He argued that 'mechanical solidarity is the earliest state of union experienced by human society', and although Turgot focused more on social wholeness, this idea provided the theoretical basis for later studies of cultural integration. Milton Gordon, in his book *Assimilation in American Life* (Gordon, 1964), systematically elaborated the process of assimilation and integration of immigrant cultures, and put forward the idea of 'cultural integration' as the basis for the study of cultural assimilation. In *Assimilation in American Life* (Gordon, 1964), he systematically described the process of assimilation and integration of immigrant cultures and proposed 'cultural integration' as an important stage of cultural assimilation. He defined cultural integration as the process of immigrant groups gradually adapting to the mainstream culture through language, values and social behaviour. Gordon points out that Cultural Integration is not a unidirectional cultural absorption, but a multi-level dynamic process that includes the interaction of explicit and implicit cultures (Gordon, 1964, p. 71). In his classic work *Ethnic Groups and Boundaries* (Barth, 1969), Fredrik Barth proposed the Cultural Boundary Theory, which delves into the dynamic process of cultural integration. He stressed that cultural integration is not a one-way cultural absorption or assimilation, but a process of adjusting and redefining cultural boundaries through dialogue and negotiation among different cultural groups (Barth, 1969, p. 9). Eric Jones in *Cultural Convergence - A Critique of Culture Based on History and Economics* analyses the relationship between the interaction between culture and economy and argues that 'culture is both fluid and sticky. When different markets begin to compete, the stickiness of culture ceases and cultures eventually converge (Jones, 2019, 14).'

The Encyclopedia of Modern Leadership - Technology and Culture defines cultural integration as a form of cultural adjustment. According to the Encyclopedia of Modern Leadership, cultural fusion is defined as a form of cultural adjustment, a phenomenon in which two separate cultural systems, through prolonged contact, learn from and influence each other to the point where they become close to each other (it is often difficult to reach a point of complete homogeneity). Generally, fusion occurs when two related cultures are evenly matched. As a result of this fusion, a third cultural system may emerge, and the two original cultural systems may disappear or become subcultures within the new cultural system. If one of the two related cultures is the dominant culture, another form of cultural adjustment may occur (Liu et al., 2008, 234).

Although the aforementioned theories offer valuable perspectives on cultural integration from different angles, they still have certain limitations when explaining cultural practices in the multi-ethnic coexistence context of the Sichuan-Tibet Tea-Horse Ancient Road. Gordon's 'immigrant- mainstream' model is more suitable for unidirectional absorption mechanisms and struggles to fully reveal the interactive logic of 'multilateral equality and multicultural coexistence' in the Sichuan- Tibet region; Bass's boundary negotiation theory, though closer to reality, still requires further refinement of its 'boundary reconstruction' mechanism in specific dance practices; Jones's 'cultural de-viscosity' logic emphasises cultural fluidity in economic interactions, though it is insightful, it is difficult to fully apply it to the highly stable religious and ritualistic cultural environment of the Tibetan region. Therefore, its applicability also requires adjustment and reconstruction based on local realities.

The cultural integration along the Sichuan- Tibet Tea- Horse Ancient Trail is not a simple 'dominant-subordinate' structure, but rather encompasses multiple mechanisms such as trade migration, ethnic cohabitation, religious propagation, and shared rituals. In this context, a single assimilation model cannot accurately explain the interactive mechanisms of dance culture. In contrast, the three-stage model of 'contact-selection-integration' better captures the phased characteristics and active selection processes in the integration of Sichuan-Tibet dance. This model emphasises that culture undergoes selection and reconstruction after contact, ultimately forming a unique integrated culture. This provides a clear theoretical framework for analysing the process of blending Han and Tibetan elements in the Luolong Lion Dance.

To sum up, cultural integration refers to the process by which a national culture, based on its traditional culture, absorbs and digests foreign cultures as needed in the course of cultural exchanges to promote its own development. The process of cultural integration is divided into three stages: contact, impact, and screening and integration. The integration of dance culture on the Sichuan- Tibet Tea Horse Road can be analysed according to this framework, in the process of interaction, exchange and integration between Han Chinese and Tibetans through the Tea Horse Road, through the contact of different cultures, the impact with their own cultures, and then screened according to their own needs, and finally the formation of cultural integration. For example, circulated in Sichuan and Tibet Tea Horse Road, an important post, Tibet Chamdo Luolong Lion Dance, through the Tea Horse Road so that Luolong County and the Lion Dance contact, and because the Lion Dance in the Han Chinese symbol of good luck, so the local residents are very fond of the Lion Dance, the Tibetan people in the acceptance of the Lion Dance at the same time chose to join the characteristics of some of the local folk dances that are more prevalent, such as the pace of the Pot Zhuang Dance, etc., and finally integrated to form a We now see the Luolong Lion Dance.

Luolong Lion Dance

The average altitude of Luolong County, Chamdo City, Tibet is about 3,700 metres above sea level, which used to be an important post on the Tea and Horse Road, and also an important channel for Sino-Tibetan exchanges. In Shodu Town of Luolong County, the local people have incorporated elements of Tibetan folk dances, such as the Reba Dance and the Pot Zhuang Dance, into the Lion Dance that was introduced to the area in the early years, resulting in a form of performance with both Chinese and Tibetan characteristics - the Luolong Lion Dance (DangZen, 2014).

The Luolong Lion Dance was passed down from the Qing officials and soldiers stationed in Tibet and merchants in the middle and late Qing Dynasty and gradually became popular. In the performance and inheritance of the dance, the elements of the local culture were constantly drawn from, thus forming the perfect combination of the present lion dance and the local Luolong Pot Dance. It is the crystallisation of the collision of Tibetan and Chinese national cultures, representing the unshakable friendship between the nationalities and reflecting the interaction, exchange and fusion of Tibetan and Chinese national cultures. The lion, as a representative of auspicious beasts, symbolises good luck and good fortune, and the Shuodu Lion Dance sends the people's hope for a good harvest and peace in the world.



Figure 3 Lion head prop (Source: Researcher)

In summary, current research on the dance culture of the Tea Horse Road has primarily focused on the historical evolution or comparative analysis of individual dance forms, with limited systematic exploration of the underlying mechanisms of cultural integration from a theoretical perspective. Particularly in the complex, intertwined context of 'multiple ethnic groups multiple cultures multiple functions,' there remains a gap in the dynamic tracking of the evolutionary pathways of artistic forms. In light of this, this paper expands upon existing research: on the one hand, it draws on Gordon's structural perspective on cultural integration to analyse the logic of contact and penetration between Han and Tibetan dance cultures; on the other hand, it responds to and develops Bas's theoretical framework on the negotiation and dynamic reconstruction of cultural boundaries; simultaneously, it critically incorporates Jones's logic that 'economic exchange promotes cultural integration,' emphasising the need to adjust this framework in the context of Tibet, where religion and ritual play a strong role. Based on this, this paper focuses on the field of dance practice, employing a three- stage model of 'contact-selection-integration' to deeply analyse how the Luolong Lion Dance achieves deep integration of Han and Tibetan cultures at the levels of historical inheritance, geographical space, and bodily practice.

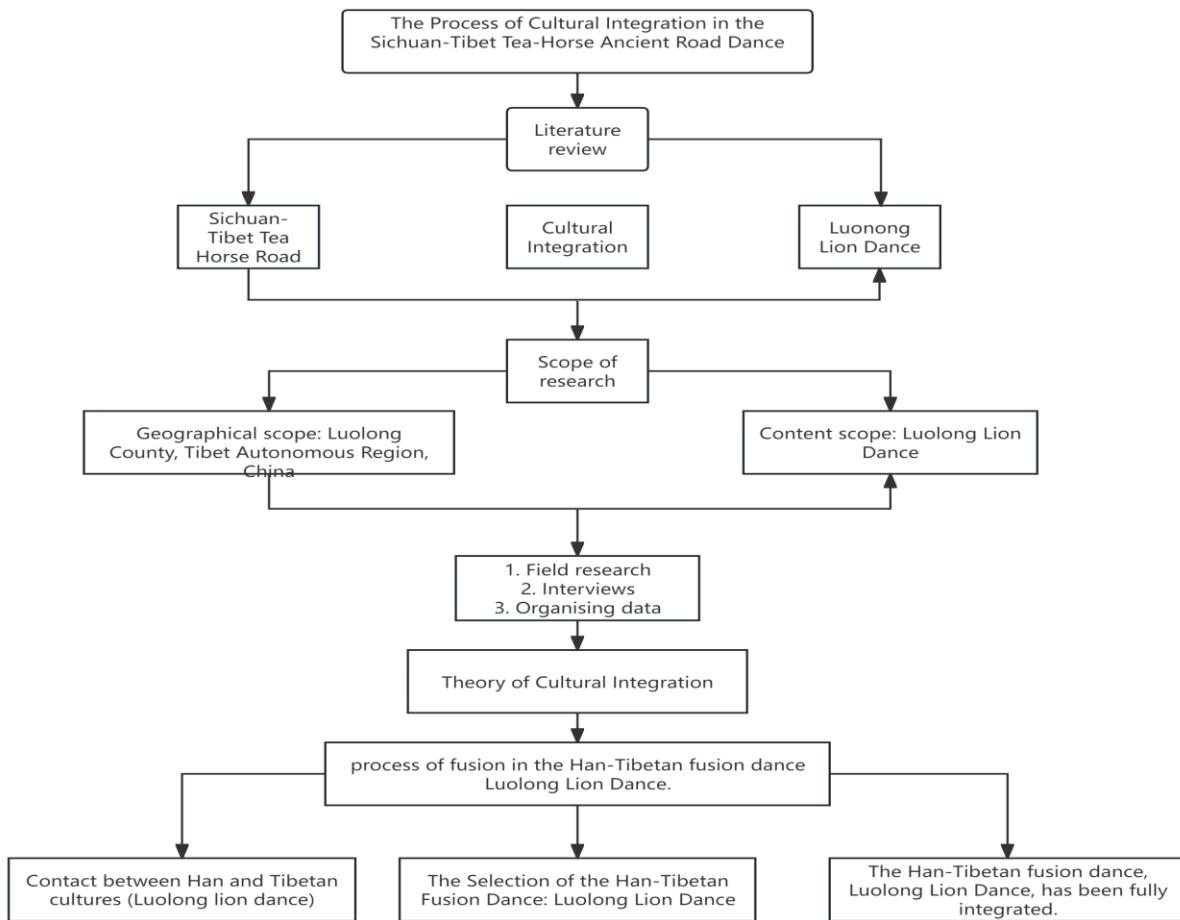


Figure 4 Conceptual Framework (Source: Researcher)

Methodology

This research is a qualitative research project focusing on the Han-Tibetan fusion dance known as the Luolong Lion Dance, which originated along the ancient Tea-Horse Road connecting Sichuan and Tibet. Data was collected through methods such as literature review, field research, interviews, and observation to analyse the Han-Tibetan fusion dance—the Luolong Lion Dance. To achieve the research objectives, this thesis combines literature review with field research, conducts interviews with practitioners of the Luolong Lion Dance, and closely observes the performance forms of the Luolong Lion Dance to address the issues raised in this research and achieve its research objectives.

Criteria for selecting interviewees for the Luolong Lion Dance:

1. Recognised by the community, dance organisations or relevant government agencies (such as the Intangible Cultural Heritage Protection Centre).
2. Influential locally or more widely, and playing a positive role in the transmission of the dance.
3. Able to fully reproduce the style, structure and performance methods of the dance.
4. Proficient in the core techniques of the dance.

Table 1 Basic Information on the Bearers of the Luolong Lion Dance

Name	Basic Information	Photo
Dengba Ani	Fifth-generation inheritor of the Luolong Lion Dance, male, born in 1955, began learning the lion dance from his father at the age of 13, member of the village art troupe, teaches the Luolong Lion Dance locally, and has trained the sixth generation of inheritors.	

The interview was conducted on July 3, 2024, at Luolong County Square, with the primary interviewee being Dengba Ani, the fifth-generation inheritor of the Luolong Lion Dance. Additional informal conversations were held with three of his apprentices and two audience members. The formal interview lasted approximately 90 minutes, was fully recorded, and later transcribed. The content covered Dengba Ani's experience of becoming an inheritor, the historical origin and cultural background of the dance, the Han-Tibetan cultural elements reflected in the performance, movement routines, costumes and props, typical performance sequences, and the role and significance of the dance in local community life.

Table 2 Observation Table of the Llolong Lion Dance

Observation content	Luolong Lion Dance Performance Process, Performance Space, Performance Form, Costumes, Props	Observation period	3 July 2024
Observation subject	Lolong Lion Dance inheritor	Observer	Wen Qian
Observation theme	The ecological and cultural environment and performance style of the Luolong Lion Dance	Observation location	Luolong County Square
Observation content record	<p>The performance takes place during the summer festival at Luolong County Square, where the open space is naturally surrounded by spectators, creating an open-air performance structure with the centre as the stage. The performance process of Luolong Lion Dance is unique and full of ritualistic significance. It typically begins with the lively sounds of gongs and drums—the lion dance team, dressed in elaborate traditional costumes, enters the venue to the rhythm of vigorous drumbeats and the clanging of cymbals, with the lion raising its head and swaying its tail, instantly igniting the atmosphere on-site; The core performance phase follows, where dancers showcase the lion's ferocity and agility through high-difficulty moves like leaps, rolls, and flips, interspersed with traditional segments like ball-playing, 'plucking the green,' and climbing heights for blessings. During weddings or other joyous occasions, the lion may perform actions like licking the bride and groom's clothing or circling the wedding banquet tables to convey blessings for early offspring and household prosperity; At the climax of the performance, the lion dance team often interacts with the audience, such as guiding children to touch the lion's head for blessings or leading everyone in chanting auspicious slogans, pushing the festive atmosphere to its peak; Finally, amid the cheers of the crowd, the lion concludes the performance with a 'three bows and nine kowtows' farewell ritual. When the dancers remove the lion's head, they intentionally shake out the 'lucky charms' (such as candies and grains) from inside the lion's skin, symbolising the spreading of blessings to the world. The performance environment of the Luolong Lion Dance reflects the multi-layered integration of Han and Tibetan cultures in religious, festive, and community life.</p>		

This interview was conducted on 3 July 2024 at Luolong County Square, with the primary focus on Dengba Ani, the fifth-generation inheritor of the Luolong Lion Dance, supplemented by informal exchanges with three apprentices and two audience members. The formal interview lasted about 90 minutes and was recorded and transcribed into a text manuscript. The interview focused on his experience of becoming an inheritor, the historical origins and cultural connotations of the dance, the fusion of Han and Tibetan cultural elements in the performance, the movements and routines, the costumes and props, the typical performance process, and its actual function in community life.

Table 3 Interviews with dance inheritors along the Sichuan-Tibet Tea Horse Road

No.	Interviewee Information	Dengba Ani	Date of Interview	2024.07.03
			Location	Luolong County Square
	Interview Question	Response		
1	When did you become a dance inheritor?			I started learning the lion dance from my father when I was 13. I officially became an inheritor at the age of 20, when my father handed over the props and the drum to me. That was when I began teaching young people.
2	What was the process of inheriting this dance?			At first, only family members performed it. My father taught me. Later, I joined the village art troupe and gradually began performing at festivals and events. Now, I mainly teach the youth in the village, and several of my apprentices can now perform on stage independently.
3	Can you describe the historical and cultural background of this dance?			The Luolong lion dance was originally brought from the Han region by a merchant. Over time, it developed Tibetan styles and movements here.
4	Which elements of this dance come from Han culture and which from Tibetan culture?			The lion dance itself is a Han cultural element — it was introduced from the Han region. The Tibetan elements include the costume of the lion guide and our footwork, which has the feeling of the Tibetan Guozhuang dance.
5	What costumes and props are used in this dance?			The main prop is the lion. As for costumes, what you see — the lion guide wears traditional Tibetan attire.
6	What are the main movement patterns of this dance?			Common steps include the Qilin step, jumping step, and opening-closing step, along with tumbling movements.
7	What is the typical performance sequence of this dance?			The lion guide first leads the lion onto the stage. At joyful events such as weddings, the lion may lick the corner of the bride and groom's clothes or circle the banquet tables to offer blessings for fertility and household prosperity.
8	When and where is this dance typically performed?			We usually perform during festivals or at weddings, birthday parties, or business openings of wealthy families.

To analyse the qualitative data collected through interviews, observations, and field notes, this study employed two qualitative research methods: thematic analysis and discourse analysis.

First, thematic analysis was used to systematically identify, organise, and interpret recurring themes in the data, with a particular focus on cultural fusion elements in the Luolong Lion Dance. The study adopted the six-stage thematic analysis framework proposed by Braun and Clarke (2006): familiarising oneself with the data, generating initial codes, searching for themes, reviewing themes, defining and naming themes, and writing the report. Key themes such as 'cultural origins,' 'performance structure,' 'Han-Tibetan symbolic elements,' and 'community functions' were identified through inductive analysis, and these were compared and validated with literature sources to ensure the comprehensiveness and validity of the analysis (Braun & Clarke, 2006).

Secondly, discourse analysis was employed to explore how language constructs identity and cultural meaning, particularly focusing on the discourse strategies used by the inheritors of the Luolong Lion Dance when narrating 'cultural inheritance,' 'ethnic integration,' and 'ritual functions.' Drawing on Foucault's (1972) perspective, this study analysed how individuals participate in the construction of cultural values through discourse within specific historical and cultural contexts, starting from the power-knowledge relationship.

By complementarily employing these two analytical methods, this study maintains the logical clarity of cultural theme analysis while deepening understanding of the process of constructing the cultural meaning of dance, ensuring the scientific rigor and explanatory power of the research findings.

Results

1. Contact between Han and Tibetan cultures (Luolong lion dance)

The Sichuan-Tibet Tea-Horse Ancient Trail, as an important trade route in China's southwestern region during ancient times, established an economic exchange mechanism connecting the Sichuan Basin with the eastern Tibetan Plateau over its long history of operation. Within this mechanism, economic exchange was not merely the circulation of goods but also served as a vital medium for cultural interaction among multiple ethnic groups. Luolong County, as a key node in the Changdu region of eastern Tibet, is located at the intersection of the 'Kangzang Route' and 'Chaqing Route' of the Tea-Horse Ancient Road. It has historically served as an important relay station for tea entering Tibet and horses exiting Tibet. Economic exchanges brought a large number of Han Chinese merchants, porters, and artisans to the Luolong region, as well as Han Chinese artefacts, language, art, and customs, thereby laying the groundwork for the interaction of Han and Tibetan cultures in this area.

During the Ming and Qing Dynasties, with the formal opening and institutionalised operation of the Sichuan-Tibet Tea-Horse Ancient Road, large quantities of tea from Ya'an and other areas in Sichuan were transported by porters across the plateau into Tibet. Tibetan horses, medicinal herbs, and furs were also transported along this route to Han regions. During the frequent tea-horse trade, Han Chinese folk artists either performed in exchange for food and lodging or were invited by local nobles and monasteries to perform. In the Luolong area, performances of Central Plains folk arts such as lion dance, dragon dance, face-changing, and acrobatics gradually developed. These performances, with their lively, festive, and auspicious nature, harmonised well with Tibetan festivals and religious rituals, quickly attracting attention among local residents and being partially adopted or adapted.

Therefore, it can be argued that the initial exposure to the Luolong Lion Dance was rooted in the long-standing economic exchange system of the Sichuan-Tibet Tea-Horse Road. It was precisely the flow of people, goods, and information brought about by the tea-horse trade that enabled Han Chinese performing arts to emerge and spread in Luolong County, a remote area in eastern Tibet, laying the practical foundation for subsequent cultural selection and integration.



Figure 5 Merchants trading on the old tea-horse road Location: Litang Folk Museum
(Source: Photo by Research)

2. The Selection of the Han-Tibetan Fusion Dance: Luolong Lion Dance

Within the historical context of the Sichuan-Tibet Tea-Horse Ancient Trail, dance serves as a crucial medium for cultural exchange, embodying the selective fusion process that occurs through the interactions and exchanges between different ethnic groups. Cultural anthropology suggests that artistic practices often serve as a 'space' for social structure and cultural interaction (Bourdieu, 1984). Dance is not merely a form of bodily expression but also a cultural encoding method through which a social group articulates its identity, values, and historical experiences. In the historical context of multiple ethnic groups converging, dance has become an important channel for the construction and reshaping of cultural identity.

The Luolong Lion Dance, as a folk dance with dual Han-Tibetan cultural characteristics, vividly embodies this process of interaction and integration. Ethnologists argue that 'other elements' in cultural transmission often require local societal mechanisms of meaning transformation and adaptation to gain lasting vitality (Eriksen, 2010), so any cultural form's flow is accompanied by a 'localisation' process. In its development, the Luolong Lion Dance did not simply replicate all elements of the original Han Chinese lion dance but selectively adopted and adapted performance movements, musical rhythms, costumes, and props based on its own cultural environment, aesthetic psychology, and ethnic customs. This 'cultural selection' was not a passive acceptance but an active adaptation and innovation, reflecting the dynamic evolution of dance within a multicultural system.

From a cultural anthropological perspective, this selective fusion serves both as a cultural strategy and as a means for an ethnic group to express itself and engage in cultural negotiation at the 'interaction boundary' (Barth, 1969). The adaptations and integrations reflected in the transmission of the Luolong Lion Dance not only demonstrate the flexibility and creativity of cultural interaction but also illustrate that ethnic dance is not a 'static tradition' but a 'dynamic cultural entity' that maintains its vitality through continuous exchange. Therefore, the evolutionary process of this dance form fundamentally reflects how cultural systems in border regions reconstruct and engage in dialogue with 'self' and "other" through dance as a 'symbolic action' (Geertz, 1973).

The following analysis will examine the selection process of the Luolong Lion Dance within the Han- Tibetan fusion context from four aspects: ‘movement vocabulary and performance style,’ ‘music and rhythm,’ ‘costumes and props,’ and ‘performance venue.’

2.1 Selection of Movement Vocabulary and Performance Style

The Luolong Lion Dance was introduced to Luolong County by merchants along the Tea- Horse Ancient Trail, originating from the Han Chinese lion dance. According to the author's observations: Its performance style is characterised by its bold, robust movements and majestic grandeur. In selecting dance vocabulary, the lion performers and lead lion dancers build upon the movements of Han Chinese lion dance, incorporating Tibetan pot dance steps and knee-shaking rhythms for lower-body movements, and string dance movements for upper-body movements. The lion performers primarily retain the dance movements of Han Chinese literary lions, such as rolling, leaping, dodging, and spinning.

The author believes that the selection of performance style and dance vocabulary in Luolong Lion Dance is due to the following reasons: 1) The choice of lion dance as a performance form is primarily because the people of Luolong, as followers of Tibetan Buddhism, believe that all things have spirits, and the lion represents good fortune and prosperity in Tibetan culture. Additionally, according to the inheritors, they had never seen lion dance before and were greatly impressed when they first encountered it. Therefore, we can conclude that the people of Luolong chose the lion dance performance form partly because it was novel to them, and the dance's vivid imitation of the lion's movements brought a fresh experience to their lives, enriching their cultural landscape. Thus, Luolong accepted and adopted the lion dance as a performance form. 2) The selection of the pot dance steps and knee-shaking rhythms is because the pot dance is one of the most widely spread folk self-entertainment dances in Changdu, holding a very important position in the hearts of the people of Changdu. The performers of the Luolong lion dance are also Tibetan. Therefore, the selection of pot dance steps and knee-shaking rhythms not only aligns with the dancers' dance habits but also enhances the lion dance's aesthetic appeal and feasibility of being accepted by the local community. 3) The reason for selecting the string dance is that it is as widely spread in the Changdu region as the pot dance, and its upper-body dance movements are very rich and elegant. Therefore, selecting the upper-body dance movements of the string dance can enhance the visual appeal of the lion leader's dance movements and better align with the dance aesthetic preferences of the Tibetan people, thereby facilitating the better transmission and preservation of the lion dance in the Tibetan region.

2.2 Selection of Music and Rhythm

According to the author's observations: The music for the Luolong Lion Dance primarily features drums and cymbals as accompaniment, but the use of gongs has been lost, leaving only drums as the accompanying instruments for the Luolong Lion Dance. The drumbeat rhythm primarily follows a 4/4 time signature, with the emphasis on the second half of each beat, and the drumbeats are performed in a steady, orderly manner.

The author believes the reasons for the selection of music and rhythm in the Luolong Lion Dance are as follows: 1. The primary accompaniment instruments for Han Chinese lion dances are also drums and cymbals. Therefore, after the lion dance was introduced to Luolong, drums and cymbals were retained as the accompaniment instruments. 2. The performers portraying the lion must hold the lion's head and wear a cloth resembling a lion on their backs. Although they can move freely after training, the 4/4 time signature is easier to master due to the limitations of the props.

2.3 Selection of Costumes and Props

According to the author's observations: The lion leader's headdress features red silk threads characteristic of the Kangba region. The upper garment consists of a Tibetan-style vest and a dark-coloured Tibetan robe, with a white long-sleeved undershirt whose sleeves extend to the calves. The trousers are red Tibetan-style silk trousers with cuffs, and the shoes are black leather Tibetan boots. The lion props are now similar to those used in Han Chinese lion dances in other regions, but they are made using iron wire, mud, yak hair, and wool, with colours primarily black, yellow, and red.

The author believes that the selection of costumes and props for the Luolong Lion Dance is based on the following reasons: 1) The lion leader wears a red silk thread on his head, which is a typical headdress of Khampa Tibetan men. In the past, Tibetans kept long hair and liked to braid it with red silk thread. Red symbolises passion, bravery, and masculinity in the Kangba region. Wrapping red thread around the hair signifies adulthood, bravery, and the ability to go to battle or take on family responsibilities. In Tibetan Buddhism and Bon religion, red has the function of exorcising evil spirits, bringing blessings, and protecting the body. Wrapping it around the hair symbolises protecting the soul with sacred power. The Lhong Lion Dance originates from the Kangba Tibetan region, hence the choice of red silk thread. 2) The Tibetan robe is also a traditional Tibetan garment in Lhong. Located on the plateau, Lhong County experiences significant temperature fluctuations between day and night. The sleeve on the right shoulder is typically left down when it is hot and worn when it is cold, combining practicality with aesthetic appeal.

3. The choice of dark colours for the attire is because the herders of Luolong often wear black

The choice of dark colours for the attire is because the herders of Luolong often wear black woolen robes, symbolising simplicity, endurance, and stability. Dark colours also symbolise masculine qualities such as ruggedness, strength, and closeness to the land and livestock. The colours chosen for the lion are black, yellow, and red. Black is often associated with wrathful deities in Tibetan Buddhism and Bon religion, such as Mahakala (the Great Black One), whose protective deity images are often depicted with black faces. Black also symbolises authority, strength, exorcism, and the suppression of evil, carrying a strong protective meaning; Yellow in Tibetan Buddhism represents wisdom, nobility, and purity; red has the function of warding off evil spirits. Therefore, the colours chosen for the lion dance are black, yellow, and red.



Figure 6 Costumes and props used in the Luolong Lion Dance (Source: Photo by Research)

3.1 Selection of Performance Venues

According to the oral account of the inheritor: The performance venues for the Luolong Lion Dance primarily include squares during festival celebrations, weddings, birthdays, and other such occasions.

The author believes the reasons for the selection of performance venues for the Luolong Lion Dance are as follows: 1) The lion dance holds a sacred place in the hearts of the Tibetan people, so performances held in squares during festival celebrations take place in spacious and well-lit venues, and the lion dance itself is joyful and festive. 2) The people of Luolong believe that the lion dance can ward off evil spirits and is also sacred, while also being visually appealing. Therefore, it is also invited to perform at weddings and birthdays.

In summary, under the backdrop of Han-Tibetan cultural exchange, Luolong lion dance has demonstrated its subjectivity through the selection and localisation of movement vocabulary, musical rhythm, and costumes and props. These choices reflect the interaction between the dance and local religious beliefs, lifestyles, and aesthetic standards after its introduction, as well as the Tibetan people's ability to accept, identify, and recreate foreign cultures. It is precisely through this process of cultural adaptation and reconstruction that the Luolong Lion Dance has gradually formed its unique artistic form, preserving the original spirit of the Han Chinese lion dance while incorporating the local characteristics of Tibetan culture, becoming an important example of ethnic dance fusion in the Sichuan- Tibet cultural convergence zone.

4. The Han-Tibetan fusion dance, Luolong Lion Dance, has been fully integrated.

After the lion dance was introduced to Luolong County in Tibet along the ancient Tea-Horse Road connecting Sichuan and Tibet, it underwent deep interaction with the local folk cultural traditions. During its migration, this dance form not only interacted with existing folk dance forms, living environments, and religious beliefs in the Luolong region, but also selectively absorbed and restructured its movement vocabulary, musical rhythms, costumes, props, and performance spaces to adapt to the new cultural context. Ultimately, it achieved cultural integration, giving rise to the Luolong Lion Dance, which embodies the characteristics of Han-Tibetan cultural fusion.

4.1 Integration of Movement Vocabulary and Performance Style

As analysed in the preceding discussion of the selection of movement vocabulary and performance style in the Luolong Lion Dance, this dance exhibits a distinct dual-source characteristic in its vocabulary structure: on the one hand, it inherits the morphological vocabulary of traditional Han Chinese lion dance, emphasising the expressive and performative aspects of lion mimicry; on the other hand, it incorporates the rhythmic structure and bodily rhythms of Tibetan potzo dance. In the actual performance process, the Luolong Lion Dance generates a composite action system that combines functionality and aesthetic appeal through the structural reconstruction and transformation of action forms from these two types of dance vocabulary. For example, the lion dancers use light, quick steps to mimic the lion's exploratory posture, with movement designs incorporating elements such as the left leg extending forward, the right heel stepping back, and the knees spreading outward. This not only retains the agile and expressive style of Han Chinese lion dance but also incorporates the emphasis on knee joint rhythmic movement from the Potzo dance, making the dancers' movements more elastic and grounded. Another example is the handling of the opening and closing steps, which begin with a horse stance, followed by the feet closing inward and quickly pushing off the ground to open outward, creating a dynamic effect with a 'Potzo-style' jumping rhythm. The lion leader primarily employs basic movements from the Potang dance, such as tapping steps, stomping

steps, and turns, to guide the lion's movement path and rhythmic logic, achieving a harmonious integration and reinterpretation of Han and Tibetan dance vocabulary in the dance's structural composition. Through this integration of vocabulary, the Luolong Lion Dance preserves the festive core of Han Chinese lion dance—praying for blessings and welcoming auspiciousness while also embedding the daily life atmosphere and aesthetic tastes of Tibetan people, becoming a new dance form with regional and ethnic fusion characteristics.

4.2 Integration of Music and Rhythm

In terms of integrating music and rhythm, the Luolong Lion Dance builds upon the rhythmic characteristics of Han Chinese lion dances while incorporating the rhythmic steps of Tibetan pot dance, thereby forming a rhythm system with a distinctive Han-Tibetan fusion style. Unlike the Han Chinese lion dance, which commonly uses a variety of instruments such as suona, drums, cymbals, gongs, and flutes, the Luolong lion dance, after being introduced to Tibetan regions, retained only two percussion instruments—drums and cymbals—emphasising rhythmic function while de-emphasising melodic elements. This has resulted in a musical style characterised by distinct rhythms, rhythmic pauses, and a clear progression of tempo. The drum and cymbal accompaniment in Han Chinese lion dances has a strong rhythm and clear structure, which is conducive to expressing the leaping movements and rhythmic progression of the lion dance. At the same time, the pace of the pot dance performed by the lion leader is slow and steady, resulting in a difference in rhythmic style between the two. Through the adaptation and reconstruction of rhythm, the Luolong Lion Dance integrates the leader's steps with the Potang rhythm in the slow beats, while the lion's main movements maintain the strength of the lion dance in the strong beats. Ultimately, this forms a rhythmic integration model centred on Han Chinese drum and cymbal rhythms, blended with Potang step rhythms, showcasing the deep cultural fusion between Han and Tibetan cultures in the realm of dance music.

4.3 Integration of Costumes and Props

In terms of the integration of costumes and props, the Luolong Lion Dance also demonstrates the results of cultural selection and adaptation. From the perspective of prop usage, lion dancers continue to use lion heads and lion bodies similar to those in Han Chinese regions. This choice reflects both the inheritance of the traditional Han-style lion dance symbolic system and the preservation of its core visual symbols in the performance ritual. However, in terms of the attire and props used by the lion leader, there is a clear incorporation of elements from the Tibetan Potso dance. Their clothing is typical of Tibetan Potso dance attire, featuring long sleeves and wide robes. Unlike the common use of props such as 'handheld embroidered balls' or 'feathers' in Han Chinese regions to guide the lion, the lion leader in Luolong lion dance does not use any handheld props but instead relies on body movements to perform the guiding function. This choice is closely related to the structure of the Potang dance attire: long sleeves and wide robes, when combined with props, can impair the fluidity and expressiveness of bodily movements. Therefore, to ensure the integrity and aesthetic appeal of the movements, the Luolong Lion Dance has voluntarily eliminated the guiding props used by the lion leader in Han-style lion dances, instead relying on bodily movements as the guiding language. This 'internalisation' of prop functions represents a cultural adaptation and innovation in the process of dance form integration, demonstrating how different ethnic dance cultures collaboratively construct performance logic, aesthetic systems, and functional expressions within a specific spatial context.

4.4 Integration of Performance Spaces

In terms of the integration of performance spaces, the Luolong Lion Dance demonstrates an inheritance and local adaptation of the original Han Chinese lion dance spatial structure. Performances primarily take place in the festive squares of Tibetan society's daily life and in private spaces with ritual significance, such as Tibetan households during wedding ceremonies or birthday celebrations. According to the inheritor Dengba Ani, in Luolong,

families with better economic conditions often invite performers to perform the lion dance at important occasions such as weddings or birthday banquets to symbolise good fortune and honour. This choice of performance space continues the traditional spatial function of Han Chinese lion dance, which primarily takes place in festive occasions and life-cycle rituals. Han Chinese lion dances are commonly performed in public or semi-public spaces such as festival fairs, weddings, birthday banquets, and business openings, while Luolong lion dances have been adapted to be performed in spaces imbued with Tibetan cultural semantics, thereby re-coding the ‘cultural space.’ Therefore, the performance space of the Luolong Lion Dance is not a simple imitation but a transformation of cultural context, enabling the dance form originally belonging to Han society to acquire a new structural framework of meaning within Tibetan society. This ‘cross-cultural transplantation’ in spatial terms not only preserves the core celebratory function of the lion dance but also facilitates the deep integration of Han and Tibetan folk ritual systems in dance spatial practices.

In summary, the formation of the Luolong Lion Dance is not merely a simple combination of dance forms, but rather a multi-dimensional, multi-layered process of cultural integration. Through cultural transformation in the performance space, restructuring of movement vocabulary, rhythmic fusion of musical beats, and functional innovation in costumes and props, it vividly showcases the artistic achievements of Han-Tibetan ethnic interaction along the ancient Tea-Horse Road of Sichuan and Tibet. As a model of ethnic cultural integration, the Luolong Lion Dance not only enriches the diversity of China's minority dance art but also provides valuable empirical evidence and theoretical references for the study of ethnic cultural exchange.

Discussions

This research fills a crucial gap by systematically applying the contact-selection-integration model to explain how the Luolong Lion Dance actually emerged. Rather than treating cultural fusion as passive absorption or linear assimilation, this study demonstrates that it involves three distinct, observable stages. In the contact stage, the Tea-Horse Road trade network created sustained interaction between Han and Tibetan communities, enabling cultural transmission. In the selection stage, the Luolong community made deliberate choices about which dance movements, musical elements, performance venues, and costumes to adopt from each tradition. In the integration stage, these selected elements were reorganized into a cohesive new form expressing multi-ethnic identity. This concrete application of theory advances understanding of how cultures actually merge on the ground.

Academic and Policy Implications

Documenting the contact-selection-integration process of the Luolong Lion Dance contributes new empirical evidence to anthropological theories of cultural fusion, ethnic identity, and minority cultural practices. It challenges older assimilationist models by showing community agency rather than passive cultural absorption. The research informs heritage preservation policy by demonstrating what comprehensive documentation requires: understanding not just material forms but the historical processes, community decisions, and social functions embedded in cultural practices. These findings support policy priorities emphasizing ethnic cultural exchange and minority cultural recognition (Central Ethnic Affairs Work Conference, 2021).

Community Significance

For the Luolong community, this research creates the first systematic documentation of their cultural heritage. The detailed record of the dance's contact-selection-integration process provides resources for teaching younger generations and supports applications for official intangible cultural heritage recognition. More fundamentally, the research validates the cultural

creativity and agency of the Luolong community by demonstrating how they actively created a meaningful cultural form through deliberate choices during cross-ethnic interaction. This documentation ensures their heritage survives and their contributions to Chinese culture are recognized.

The formation process of Luolong lion dance is a typical case of interaction and fusion between Han and Tibetan cultures, deeply reflecting the dynamic mechanisms of cultural transmission, localisation, and cultural selection emphasised by cultural anthropology. Its development not only responds to the question raised in this study, ‘How did the Sichuan-Tibet Tea Horse Road promote the selective fusion of dance cultures between ethnic groups?’, but also provides rich empirical material for understanding the process of cultural integration and the formation of ethnic identity.

Conclusion and suggestions

In summary, the formation and evolution of the Luolong Lion Dance fully demonstrate the mechanisms of contact, selection, and integration between Han and Tibetan cultures within the multi-ethnic exchange space of the Sichuan-Tibet Tea-Horse Ancient Road. From the cultural influences brought about by Qing Dynasty trade activities and military deployments, to the local Tibetan population's adaptations of dance forms, musical rhythms, costumes, and props, the Luolong Lion Dance uses ‘other cultures’ as its material and ‘self-culture’ as its standard, developing a performance form that combines ethnic characteristics with cross-cultural implications. This process, as (Barth, 1969) pointed out, reveals that cultural boundaries are not insular walls but interactive fields where individuals and groups continuously negotiate and redefine the relationship between ‘us’ and ‘them’ at the boundaries. In terms of dance vocabulary, the Luolong Lion Dance retains the fierce and agile movements of traditional Han Chinese lion dances, while incorporating the footwork of Tibetan pot dance and the upper-body rhythms of string dance, thereby achieving a fusion of ‘form’ and ‘spirit’ in its dance language. In terms of music and props, it uses Han Chinese drums and cymbals and incorporates folk-style costumes, reflecting the dynamic process of cultural integration. The ‘agency in cultural practice’ emphasised by (Bourdieu, 1984) is vividly reflected in this artistic practice: ethnic culture is not passively received but undergoes continuous creative transformation within a social context.

More importantly, as a concrete example of cultural integration, the Luolong Lion Dance not only holds regional ethnographic value but also carries significant theoretical and practical implications. It addresses core issues in contemporary ethnology and cultural anthropology, such as cultural hybridity and the reconstruction of cultural identity (Hall, 1996), while also offering practical pathways to understand ‘cultural resilience’ and ‘cultural adaptation’ under the tension between globalisation and localisation. In the current context of multicultural coexistence and the construction of a shared sense of identity among the Chinese nation, the experience of the Luolong Lion Dance demonstrates that cultural fusion is not cultural dilution, but rather an accumulation of cultural capital and a strengthening of identity recognition. This not only deepens our understanding of the cultural circulation mechanisms along the Sichuan-Tibet Tea-Horse Ancient Road but also provides robust theoretical support for the protection, inheritance, and innovation of ethnic cultures in border regions.

Future research could further explore how the Luolong Lion Dance achieves intergenerational transmission, cultural re-creation, and cross-media dissemination in contemporary social transformation, thereby gaining a more comprehensive understanding of how traditional dance participates in the construction of national cultural identity in a modern context, and injecting unique cultural momentum into the consolidation of the Chinese national community consciousness.

Recommendation

As a representative example of the integration of Han and Tibetan cultures, the Luolong Lion Dance embodies the dynamic process of cultural negotiation and regional identity construction. To effectively protect and preserve this culturally integrated folk art, it is recommended to promote its application for national or provincial intangible cultural heritage status, thereby securing institutional support and establishing a ‘dual-track’ protection mechanism. On one hand, through official inheritor training, the development of school dance programmes, and the establishment of local performance groups, the systematic dissemination of the Luolong Lion Dance can be promoted. On the other hand, through movement notation, musical notation, and digital archiving (including videos, oral histories, and costume diagrams), an academic archive system can be constructed for research and educational use. This protection model not only facilitates academic standardisation but also preserves cultural vitality.

In terms of policy support, it is recommended that local and regional governments implement relevant measures, provide annual subsidies for community performances and training, establish an ‘Intangible Cultural Heritage Ecological Protection Zone’ in Luolong County, and incorporate the Luolong Lion Dance into the border ethnic education and art education system. At the national level, it could be considered for inclusion in the ‘Belt and Road’ cultural cooperation projects to enhance its visibility and promote cross-border cultural exchange.

In terms of cultural tourism and sustainable development, the principle of not compromising the authenticity of the culture should be upheld, and the Luolong Lion Dance should be integrated into the cultural tourism system. For example, during Tibetan calendar festivals, organise live performances, collaborate with local cultural centres to develop interactive exhibitions or digital experiences, and combine dance performances with ecological tourism and agro-pastoral tourism to form an integrated development model of ‘performance + cultural creativity + economy.’ However, all related innovative and promotional activities should be based on community consultation and respect for culture to ensure the authenticity and dignity of cultural heritage.

Future research should adopt a cross-disciplinary perspective, focusing on ethnographic studies of performance to document the dynamic evolution of the form and meaning of the Luolong Lion Dance; conducting sociolinguistic research to explore the intergenerational transmission mechanisms of dance terminology and oral traditions; and conducting cross-regional comparative studies to identify macro-level patterns of dance fusion in the Han-Tibetan border regions. These studies will deepen our understanding of cultural resilience and integration pathways and provide valuable empirical evidence for the formulation of cultural policies.

New knowledge and the effects on society and communities

1. Systematic Documentation of the Luolong Lion Dance Fusion Process

This research provides the first comprehensive, theoretically grounded analysis of how the Luolong Lion Dance emerged through Han-Tibetan cultural fusion along the Sichuan-Tibet Tea-Horse Road. Prior to this study, knowledge of the Luolong Lion Dance was limited to brief mentions in Luolong County Annals, lacking systematic examination of its origins, cultural components, and integration mechanisms. Using the three-stage contact-selection-integration model, this study reveals the specific pathways through which cultural exchange occurred and how distinct traditions merged into a cohesive new form.

In the contact stage, merchants, porters, and caravans traveling the Tea-Horse Road created sustained interaction between Han and Tibetan communities, enabling the transmission of dance movements, musical styles, and performance aesthetics across ethnic boundaries. During the selection stage, the Luolong community made deliberate choices about which specific dance movements, musical elements, performance venues, costumes, and props to adopt, adapt, or reject from each cultural tradition. This process demonstrates active agency rather than passive cultural diffusion. Finally, in the integration stage, selected elements from Han and Tibetan dance traditions were reorganized and synthesized into a cohesive new performance form that maintained regional characteristics while embodying multi-ethnic identity.

2. Evidence of Community Agency in Cultural Fusion

This study contributes new empirical evidence challenging deterministic theories of cultural assimilation (Gordon, 1964). Rather than passive recipients of dominant cultural forms, the Luolong community actively negotiated, reinterpreted, and creatively synthesized cultural elements (Jones, 2019; Eriksen, 2010). The research demonstrates that communities make strategic choices about cultural fusion based on their specific economic, social, and religious contexts. Local performers and community leaders functioned as cultural mediators and innovators, not merely as transmitters of existing traditions. This finding reveals that cultural fusion processes reflect identity negotiation (Hall, 1996) rather than cultural extinction or linear assimilation.

3. The Tea-Horse Road as a Site of Cultural Creativity

This research reveals the Tea-Horse Road as more than a commercial corridor; it was a dynamic space for cultural innovation and exchange. The long-distance trade network created conditions for sustained, multi-generational contact between ethnic groups (Barth, 1969), enabling the development of hybrid cultural practices that served both economic and social functions. The emergence of new forms of ethnic identity that simultaneously honor and transform inherited traditions demonstrates how economic mobility networks directly enable and shape cultural creativity. This finding expands scholarly understanding of trade routes as sites of cultural production, not merely cultural transmission (Liu, 2021; Lu, 2021).

4. Intangible Cultural Heritage Documentation

This study preserves detailed ethnographic and historical documentation of an endangered performance tradition. The comprehensive record includes movement vocabularies and choreographic structures, musical accompaniment and rhythmic patterns, performance contexts and ritual significance, historical narratives from community members and performers, and the visual and material dimensions such as costumes, props, and sacred objects. This documentation creates an irreplaceable academic and cultural record for the Luolong community and serves as a foundation for future heritage preservation efforts (Fei, 1999).

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Restoring Life Balance through *Lanna* Rituals: The Symbolic Power of Apology and Healing

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Abstract

The present study aimed to analyze the forms, meanings, and healing mechanisms of *Lanna* holistic and apology rituals as cultural systems for restoring relational and spiritual balance in Northern Thailand. The research focused on understanding how these rituals, such as *Tan Chedi Sai* (Sand Pagoda Offering), *Khan Tang*, *Suma Kaew Sam*, *Suma Phra Kaew Ha Jamphuak*, and *Suma Krua Tan*, function to relieve guilt, fear, and spiritual instability through structured acts of apology, offering, and community participation. A qualitative approach was employed, incorporating in-depth interviews, participant observation, and symbolic content analysis across three provinces: Chiang Mai, Lamphun, and Lampang. Data were analyzed within the frameworks of medical anthropology and symbolic healing theory. The findings revealed that *Lanna* apology rituals operate as relational healing systems that transform human suffering, particularly moral distress and relational imbalance, into meaningful experiences of reconciliation. These ceremonies integrate symbolic actions, language, and rhythmic participation

to restore life force, mindfulness, and ethical balance. The results indicate that such rituals complement biomedical and psychological care by addressing spiritual and relational dimensions of suffering often beyond the reach of modern health systems. The study suggests that the incorporation of *Lanna* rituals into community mental health and wellness initiatives could strengthen culturally grounded approaches to mental health promotion and collective strength in Thai society.

Keywords: *Lanna* rituals, Life balance, Apology, Symbolic healing, Mental health, Spiritual well-being

Introduction

In contemporary Thai society, the definition of health has become increasingly biomedical, focusing on physical conditions and clinical indicators. Nevertheless, global evidence shows that a growing portion of human suffering arises not from disease but from spiritual distress, social disconnection, and loss of meaning (Koenig et al., 2023; WHO, 2022). The World Health Organization (2023) reports that mental health disorders now account for nearly 15% of the global burden of disease, with depression and anxiety increasing by more than 25% since the COVID-19 pandemic (WHO news release, 2022; WHO, 2025). In Thailand, data from the Department of Mental Health (2023) reveal that approximately 1 in 6 adults experiences moderate to severe psychological stress, often linked to economic hardship, family fragmentation, and weakened community bonds. These conditions have given rise to new interest in community- based and spiritually integrated healing systems that address both emotional and moral suffering (WHO, 2023).

Mental and spiritual health are deeply interconnected. Spiritual imbalance, exhibited as guilt, loss of purpose, or disruption in one's relationships with others and with nature, can contribute to chronic anxiety and psychophysiological symptoms (Bhugra & Ventriglio, 2024; Hayes, 2002). In Thailand, these experiences are often expressed through culturally specific idioms of distress. Thus, understanding how local cultures interpret and respond to spiritual imbalance is essential for developing holistic approaches to community well-being.

Rituals that promote spiritual health share several universal characteristics across cultures. They are typically symbolic, structured, and repetitive actions that aim to connect individuals with a sense of meaning, supremacy, and community. Such rituals may include prayer, meditation, chanting, lighting candles, communal meals, or mindfulness practices. They often engage both the mind and body, raising emotion, reflection, and sensory experience, thereby reinforcing a sense of belonging and purpose (Hobson et al., 2018). Spiritual health itself is defined as the ability to experience and integrate meaning, purpose, and connection, to oneself, others, nature, or a higher power, forming a vital dimension of holistic well-being (Fisher, 2011; Sadat et al., 2019). These rituals, whether religious or secular, are culturally adapted expressions of humanity's search for consistency and supremacy (Martolf & Mickley, 1998).

The application of spiritual rituals has demonstrated measurable benefits for mental and physical health. Studies show that individuals engaged in regular spiritual or religious practices exhibit lower levels of stress, anxiety, and depression, as well as greater optimism, life satisfaction, and resilience (Koenig, 2012; Chen et al., 2021). Participation in communal rituals, such as worship or meditation groups, has been associated with reduced loneliness, healthier lifestyle choices, and even lower mortality risk (Writer, 2022). These outcomes are thought to arise from mechanisms including emotional regulation, social bonding, moral grounding, and meaning- making, core components of spiritual well-being (Hood et al., 2018). Thus, ritual engagement functions not merely as tradition but as a psychosocial process that cultivates inner balance, connection, and holistic health.

Rituals serve as complementary tools to enhance spiritual health by fostering meaning, connection, and emotional balance, which support overall well-being. They are not substitutes for medical treatment, but act as holistic practices that strengthen coping, reduce stress, and promote harmony between mind, body, and spirit alongside conventional care.

Across cultures, rituals have long served as complementary mechanisms for promoting spiritual health rather than substitutes for medical treatment. Community reunion ceremonies in post-conflict Africa (Nwoye, 2022), shamanic and mindfulness rituals in East Asia (Xiao et al., 2017; Sun & Kim, 2025), and collective grief rituals in Western countries (Hobson et al., 2018) demonstrate that symbolic and participating acts can effectively reduce anxiety, restore social harmony, and foster emotional resilience. These practices share a common principle that healing occurs through the symbolic transformation of suffering into a shared, meaningful experience. Such evidence underscores the need to study *Lanna* rituals within this broader global conversation on spiritual and community healing.

Within *Lanna*, a diverse range of holistic and apology rituals continue to play a vital role in restoring relationships between humans, spirits, and nature. Key ceremonies include the *Khan Tang* (offering tray ritual), *Suma Kaew Sam* (apology to the Three Jewels), *Suma Phra Kaew Ha Jamphuak* (apology to the Five Kinds of Gems), *Suma Krua Tan* (apology for offerings), and *Tan Chedi Sai* (sand pagoda offering).



Figure 1 The representative picture showing the *Khan Tang* (A to F) and *Tan Chedi Sai* (G and H)

These *Lanna* folk rituals represent deeply relational and symbolic practices that aim to restore spiritual balance, restore relationships between humans and sacred entities, and promote mental and spiritual well-being. These rituals employ mechanisms of apology, offering, and symbolic self-

representation to reestablish harmony within the cosmology and the natural world. Studies on *Lanna* traditional healing show that such rituals function as community-based psychosocial interventions, enhancing moral strength, reducing emotional distress, and supporting cultural identity and flexibility (Champawan, 2024).

Studies indicate that when practiced alongside biomedical care, these rituals can improve coping, promote collective healing, and strengthen social cohesion within communities. Factors supporting their effectiveness include faith, family involvement, and community health integration, whereas modernization, loss of belief, and lack of formal evaluation pose challenges to their continued use (Champawan, 2024; Jitae, 2020).

They are conducted under the guidance of traditional healers and remain particularly active in Chiang Mai, Lamphun, and Lampang, where they serve both personal and communal therapeutic purposes.

□ In Chiang Mai, rituals are often temple-centered and integrate monastic chanting with lay participation.

□ In Lamphun, the *Suma Krua Tan* tradition emphasizes domestic and familial reconciliation.

□ In Lampang, *Tan Chedi Sai* is performed as a collective act of purification during the Songkran festival.

These regional variations reflect how *Lanna* rituals adapt to social context while preserving a shared cosmological logic of balance and moral renewal (Tantipidoke, 2013; Champawan, 2024).

Rather than replacing formal medical treatment, *Lanna* rituals function as complementary cultural systems that provide moral reconciliation and psychological integration where clinical interventions may be insufficient. The rituals' symbolic language, sensory rhythm, and communal participation create a safe and sacred space for expressing guilt, fear, and loss that transforms these emotions into experiences of forgiveness and renewal (Csordas, 1994; Clarke & Waring, 2018). Within Buddhist therapeutic logic (which refers to the way philosophy explains and treats suffering by identifying its causes, understanding its nature, and applying mindful practices, such as meditation, ethical living, and compassion, to achieve healing and liberation of the mind and body), such practices align with the cultivation of mindfulness and compassion, promoting inner balance and acceptance.

Although numerous studies have examined biomedical and psychological models of healing, there remains a significant gap in understanding how ritual practices function as culturally embedded systems of spiritual and relational healing within Thai society. Prior research has occasionally integrated *Lanna* indigenous knowledge into the contemporary mental health framework, leaving unexplored how traditional apology and offering ceremonies restore moral balance, community consistency, and inner well-being. Furthermore, policy and public health initiatives in Thailand have rarely recognized local ritual systems as potential tools for sustainable mental health promotion and community development.

This research addresses an important gap in understanding how traditional *Lanna* rituals contribute to mental and spiritual health within contemporary contexts. First, it fills the lack of empirical exploration into rituals as culturally grounded healing systems that complement rather than replace medical treatment. Second, it underscores the underappreciated role of indigenous knowledge in fostering community cohesion, conflict resolution, and holistic well-being, areas often overlooked in mainstream mental health frameworks. Finally, it responds to the gap between traditional practice and modern policy, offering evidence-based insights on how local ritual wisdom can be systematically integrated into mental health promotion, wellness programs, and sustainable development initiatives that honor cultural continuity while addressing current societal needs.

Moreover, the research bridges the conceptual gap between medical anthropology and Buddhist therapeutic logic. By integrating these perspectives, it shows how *Lanna* rituals embody both cultural and ethical dimensions of healing, linking mindfulness, compassion, and moral restoration with health and well-being. The study also responds to a policy gap in Thailand, where indigenous wisdom systems have rarely been incorporated into mental health promotion or community wellness programs. It provides evidence- based insights for integrating *Lanna* spiritual traditions into community mental health care, cultural preservation, and sustainable development.

The objectives of the study were to analyze the forms, behaviors, and symbolic meanings of *Lanna* holistic and apology rituals practiced in Chiang Mai, Lamphun, and Lampang; examine the healing mechanisms of these rituals through the conceptual frameworks of medical anthropology (is the study of how culture, society, and biology influence health, illness, and healing practices), symbolic healing (refers to the use of rituals, symbols, and meanings to restore balance and well-being in a person's mind, body, and spirit), and Buddhist therapy; and evaluate their potential roles in promoting spiritual health and community well-being as complementary systems along with modern medicine.

Methodology

Research design

This study focuses on the traditional healing practices in the Chiang Mai, Lamphun, and Lampang provinces. The research methodology comprises documentary research, surveys, and qualitative research.

Research procedures

The study had reviewed foundational data and relevant documents concerning *Lanna* ritual healing. We had conducted an extensive literature review and formulated a conceptual framework to guide the investigation. Research communities in selected study areas had been identified and chosen for fieldwork, following an analysis of baseline information to determine appropriate sites. The research team had developed and validated qualitative research approaches, including 1) an in-depth interview guide for *mor mueang* (Ritual healers) and experts to explore the origins, theoretical foundations, and procedural elements of ritual healing; 2) a structured interview form for documenting healing methods and assessing their safety, benefits, and preliminary effectiveness; and 3) a focus group discussion guide for eliciting expert perspectives from Thai traditional medicine practitioners on self- care approaches through *Lanna* ritual healing. Field researchers and data collectors had been trained, and qualitative surveys and interviews were subsequently undertaken. The resulting data had been compiled, analyzed, and synthesized, from which key insights were categorized to support the promotion and safeguarding of *Lanna* cultural healing heritage. Finally, the study had consolidated its findings into a proposed model for self-reliant health care through *Lanna* therapeutic rituals and had formulated strategic recommendations for the preservation and integration of this indigenous medical tradition, concluding in the final report and manuscript preparation for academic propagation.

Target population and research sites

The target population comprises *Lanna* ritual healers who perform health- promoting, preventive, curative, and rehabilitative activities through ritual healing practices. We have screened the subjects from Northern Thailand. These cities (Chiang Mai, Lamphun, and Lampang) were selected due to the accepted participants and available spiritual teachers to do the study. Thus, this research area covers the Chiang Mai, Lamphun, and Lampang provinces.

Sample group and sampling technique

In this study, a multistage sampling method was employed, including documentary research (Content analysis was conducted to verify the accuracy and completeness of historical records, ritual procedures, local histories, and oral traditions related to the transmission of ritual knowledge within the target communities, survey (A perfect inductive method was applied to collect socio-demographic data, types of healers, and geographical origins of the sample population, consisting of *Lanna* ritual healers in the upper northern region of Thailand, and qualitative research (Provincial sampling was used based on three criteria: geographical characteristics, healer typology, and place of origin). This allowed for in-depth interviews with selected ritual healers representing the diversity of traditional healing systems in the study area.

Research instruments

1. Survey form to collect baseline information on *Lanna* ritual healing practices.
2. In- depth interview form to obtain qualitative data regarding worldviews, conceptual frameworks, materials, ritual procedures, and modes of knowledge transmission in *Lanna* therapeutic healing.
3. Focus group interview form to validate and triangulate qualitative findings.
4. Open- ended discussion guide to explore additional systems of thought and knowledge relating to *Lanna* ritual healing beyond the pre-established research framework.

Data analysis

Qualitative data and documentary evidence were analyzed using the method of agreement and content analysis techniques. The method of agreement is a comparative approach used to identify causal relationships by examining multiple cases that share a common factor leading to a similar outcome. It helps researchers determine which elements consistently contribute to observed effects, such as shared features in ritual practices that promote well- being. Meanwhile, content analysis is a systematic technique for analyzing textual or qualitative data to identify patterns, themes, and meanings within communication. It enables researchers to interpret symbolic expressions, beliefs, and cultural values embedded in narratives or rituals, providing a structured and reliable means of understanding qualitative data. These methods were applied to verify the accuracy, consistency, and credibility of information obtained from diverse sources concerning *Lanna* ritual healing traditions.

Results

Structure and components of *Lanna's* holistic and apology rituals

Field investigations across Chiang Mai, Lamphun, and Lampang revealed that *Lanna* holistic and apology rituals comprise a coherent collection of ceremonies designed to restore relational harmony between humans, spirits, and nature. The principal forms identified include *Tan Chedi Sai* (Sand Pagoda Offering), *Khan Tang*, *Suma Kaew Sam* (Apology to the Three Jewels), *Suma Phra Kaew Ha Jamphuak* (Apology to the Five Kinds of Gems), and *Suma Krua Tan* (Apology for Offerings).

Each ceremony exhibits a defined ritual structure consisting of (i) symbolic offerings prepared in a tray, (ii) verbalized acts of apology or repentance, and (iii) mediation by a ritual specialist. These elements collectively function to re-establish moral and cosmological balance, particularly after experiences of misfortune, illness, or interpersonal conflict.

Symbolic mechanisms and ritual logic

Symbolic analysis indicated that these rituals employ the offering tray (*khan tang*) as a substitute self, representing the individual's life force (*khwan*). The process of offering an apology transfers negative energy or karmic burden into the symbolic object, which is then ritually purified or dispersed. The rhythmic arrangement of chants, gestures, and offerings forms a ritual syntax through which guilt, fear, and loss are transformed into socially intelligible experiences.

Psychological and social healing functions

Participants described immediate psychological relief, including decreased feelings of guilt, anxiety, and relational tension following ritual performance. Observations confirmed that rituals are commonly conducted after major life disruptions (death, illness, or community conflict) to release accumulated distress and renew emotional stability. At the communal level, collective participation fosters reconciliation and reinforces shared moral norms, thereby functioning as a social therapy parallel to biomedical models.

Levels of Healing: *Kwan-Khan-Sathi-Karma*

Analysis of ritual language and participant narratives revealed a four-tiered structure of healing:

- *Kwan* (life force): restoration of vitality and protection against misfortune.
- *Khan* (body aggregate): purification of physical and energetic imbalances.
- *Sathi* (mindfulness): cultivation of awareness through apology and reflection.
- *Karma* (moral action): release of guilt and creation of a new relational equilibrium.

This multilayered approach illustrates how healing in *Lanna* tradition extends beyond somatic recovery to include moral, emotional, and cosmological realignment

Discussions

Rituals as relational healing systems

The results demonstrate that *Lanna*'s holistic and apology rituals function as relational healing systems, rather than isolated cultural performances. Consistent with Csordas (1994) and Kleinman (1980), healing occurs through the reorganization of meaning within a shared symbolic framework. Ritual acts (apology, offering, and chant) mediate communication between visible and invisible realms, allowing participants to manage suffering that biomedical discourse cannot easily define.

Symbolic healing and the embodied self

The findings support symbolic-healing theory, which posits that transformation arises through embodied symbols acting on perception and emotion. Through tactile and auditory experiences, handling offerings, reciting formulaic apologies, and hearing rhythmic chants, participants reorganize internal chaos into structured awareness. This aligns with Wiseman (2022) and Kundtova & Geertz (2018), who highlight ritual as an embodied cognitive process translating disorder into meaning.

The Therapeutic Logic of Apology

From a spiritual-therapy perspective, apology (*khama*) functions as a moral technology of mindfulness and release rather than superstition. It enables acknowledgement of suffering and non-attachment to rigid dualities of right and wrong (Wallace 2001; Hayes 2002; Keng et al. 2011). The act of apology thus transforms guilt into insight, echoing the concept of wise

reflection. Participants reported renewed inner calm and acceptance, suggesting that these rituals cultivate psychological flexibility associated with acceptance and commitment therapy.

Comparison with Western therapeutic paradigms

Unlike Western psychotherapy, which often isolates the individual as patient, *Lanna* rituals emphasize collective participation and cosmic interdependence. Healing is achieved through restoring relationships with spirits, community, and environment, corresponding to Obeyesekere (1990) and Hobson et al. (2018) on the social meaning of ritual action. This communal dynamic repositions the sufferer from passive patient to active co-creator of meaning, enhancing agency and social cohesion.

Implications for mental-health integration

These insights reveal substantial potential for integrating ritual-based frameworks into community mental-health and wellness programs. Ritual participation offers neutral avenues for emotional release, moral reconciliation, and identity restoration, dimensions often neglected by clinical interventions (Bhugra & Ventriglio, 2024; Chutiyami et al., 2025). Moreover, aligning ritual practice with sustainable cultural preservation initiatives could support mental-wellness tourism and culturally grounded psychosocial care.

The overall social and spiritual healing mechanisms embedded in the studied rituals in the current study are illustrated in Figure 2.

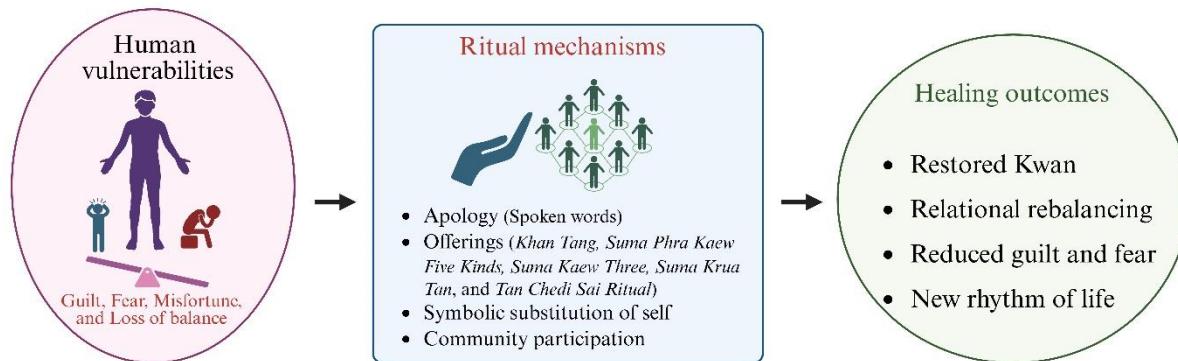


Figure 2 The conceptual framework of *Lanna*'s holistic and apology rituals as relational healing systems. The social and spiritual healing mechanisms are fixed in the studied rituals

Limitations and future directions

While qualitative in scope, the study underscores the need for quantitative and comparative evaluations of ritual efficacy, such as measuring changes in anxiety, social connectedness, or biomarkers of stress pre- and post-ritual participation. Future research may explore adaptive models that translate symbolic healing into therapeutic frameworks applicable in diverse cultural settings.

Conclusion and suggestions

Lanna's holistic and apology rituals are more than just old traditions. They are living practices that help people and communities heal both spiritually and emotionally. Through symbols, sacred objects, and words of apology, these rituals allow individuals to face feelings of guilt, imbalance, or broken relationships in ways that are meaningful within their culture.

Based on the study through medical anthropology and Buddhist healing perspectives, these rituals are not just beliefs or superstitions. They form a system that helps people

understand and transform pain into forgiveness and peace. The act of apology is not about shame, but about accepting human weakness and opening space for healing between people, with nature, spirits, and oneself.

Although this research focuses on *Lanna* traditions, its ideas can be applied to other Thai regions. Each area has its own rituals and beliefs, yet all share a Buddhist foundation that values compassion, balance, and mindfulness. These findings suggest that such traditional practices could inspire new, culturally appropriate healing systems in Thailand, especially where modern medical approaches cannot fully reach emotional and relational suffering.

New knowledge and the effects on society and communities

Rituals complement biomedical and psychological care by addressing spiritual and relational dimensions of suffering often beyond the reach of modern health systems. The study suggests that the incorporation of *Lanna* rituals into community mental health and wellness initiatives could strengthen culturally grounded approaches to mental health promotion and collective strength in Thai society.

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An Experimental Study on the Development of a Training Program for Psychological Traits and Skills to Enhance Socially Ethical Behaviors in Thai Youths

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Abstract

This experimental research aimed to examine the effectiveness of Thai youths who underwent the different levels of training intensity. The sample had 120 Thai youths, who were randomly assigned to one of four groups without bias under a 2×2 factorial design, with two types of independent variables: 1) training in psychological traits, 2) training in socially ethical skills. Three phases were evaluated: before training, after training immediately, and three-month after training. Seven measurement tools were used by Likert-type rating scale with reliability coefficients from 0.810 to 0.860. The statistical method to test the hypotheses was Analysis of Covariance.

The findings revealed that 1) For the phase after training immediately, Thai youths who underwent the trainings in psychological traits and socially ethical skills had a higher mean score in moral reasoning compared to those who trained only the training in socially ethical skills or no any training. Additionally, they exhibited more positive attitudes toward socially ethical behaviors than those who did not train any training. Their socially ethical behaviors were higher than Thai youths who only underwent in socially ethical skills, 2) For the phase of three-month after training, Thai youths who underwent the trainings in psychological traits and socially ethical skills had a higher mean score in moral reasoning than those who trained only the training in socially ethical skills or no any training. Moreover, their positive attitudes toward socially ethical behaviors remained higher than Thai youths who only trained in psychological trait or no any training.

Keywords: Experimental research, Social ethics, Thai youth, Training

Introduction

The social environment in Thailand is undergoing rapid transformation due to globalization, which brings a diverse influx of foreign cultures, borderless media, and advanced technology. These changes have significantly impacted individuals' lifestyles and behaviors, leading to swift societal shifts. Thai youths, in particular, are highly susceptible to these changes, as many possess weak psychological resilience and a lack of social immunity. This deficiency hinders their ability to critically evaluate and selectively adopt positive values and desirable cultural influences. Consequently, Thai society is witnessing a shift in values, behaviors, societies, living lives, worldviews, and ways of life, with an increasing inclination toward Western consumerism and materialism. Economic competition and the security in production become the primary focus, fostering a culture of competitiveness where market-driven strategies reinforce materialistic values, promoting extravagant lifestyles. This shift often leads individuals to pursue personal gain without ethical and moral considerations, which contrasts with traditional Eastern values. UNICEF Thailand (2017).

Presently, the Thai government recognizes the importance of promoting ethical conduct in order to improve the balance of moral and material development based on the 20-Year National Strategy and the Thailand 4.0 Format to drive the stability, prosperity, and sustainability by leveraging technology and innovation to foster self-reliance under the Philosophy of Sufficiency Economy. Therefore, the First National Master Plan for Ethical Promotion (2016–2021) was incorporated into the 12th National Economic and Social Development Plan to serve as a strategic mechanism for fostering human morality. The goal of this plan is to establish "a moral Thai society where individuals adhere to the teachings of their respective religions, integrate the Philosophy of Sufficiency Economy into their daily lives, preserve Thai cultural values, and coexist peacefully within Thailand, the ASEAN community, and the global society in a sustainable manner". The plan provides clear directions or guidelines to ensure a cohesive and actionable approach to ethical promotion across various organizations (Jutarosaga, 2019). In alignment with this national initiative, the emphasis has been given on human development alongside economic progress, emphasizing the central role of individuals in national development. The focus is on nurturing well-rounded individuals in physically, mentally, intellectually, particularly the ethics, which is fundamental to determine the peace and stability of society and the nation (Sodmanee & Junprasert, 2011).

The research team recognizes the importance of five key dimensions of socially ethical behaviors and develops an innovative training program for psychological traits and skills as a framework to cultivate conceptual principals as well as skills covering physical, mental, and societal aspects among Thai youths. This training program was tested through an experimental study to examine its effectiveness. The goal is to provide educational institutions, organizations, and other interested entities for their implementations. Furthermore, youth leaders who undergo this training can apply and disseminate their acquired knowledge as well as experiences for "enhancing" and "passing" to other youths, thereby contributing to the sustainable social and national development of Thailand.

Research Objective

To examine the effectiveness of Thai youths who underwent the trainings for integrated psychological traits and skills with different levels of the intensity to enhance socially ethical behaviors in digital era.

Hypothesis

Thai youths who underwent the trainings in psychological traits and socially ethical skills had a higher mean score in moral reasoning, positive attitudes toward socially ethical behaviors, and socially ethical behaviors compared to those who trained only the training in either psychological traits or socially ethical skills. Additionally, Thai youths who trained the trainings in psychological traits and socially ethical skills, as well as the groups who trained only the training in either psychological traits or socially ethical skills had a higher mean score in moral reasoning, positive attitudes toward socially ethical behaviors, and socially ethical behaviors compared to those who had no training in psychological traits and socially ethical skills. These findings were found under the phases after the training immediately and three-month after the training. Based on the aforementioned hypothesis, a preliminary hypothesis testing was conducted as follows: 1) Within each group, the relationship between the covariate and the dependent variable should exhibit linearity. 2) The distribution of errors or residuals should conform a normal distribution. 3) The relationship between the covariate and the dependent variable must be homogeneous across all groups, which can be tested by examining the equality of regression slopes.

Methodology

The population of this research consisted of Thai youths aged 18– 25 years (In accordance with the United Nations' criteria). The sample group includes 120 Thai youths from the northern region from Uttaradit province at 40 individuals, Phrae province at 40 individuals, and Nan province at 40 individuals. Recruitment was conducted through direct outreach, posters, and announcements across faculties of Uttaradit Rajabhat University. Participants were accepted into the program over a 30-day period or until the required sample size was met.

Qualifications of Sample Group

1. Be willing and interested in participating in the program.
2. Have permanent residence and household registration in Uttaradit, Phrae, or Nan provinces and be enrolled in years 1–4 at Uttaradit Rajabhat University.
3. Have prior experience working in groups/ networks and at least one participation in volunteer activities.
4. Attend at least one training session or activity related to ethics and morality.

Experimental Design

This experimental study had 2 groups of independent variables including 1) Training in psychological traits, 2) Training in living skills in accordance with the Sufficiency Economy philosophy. A 2 by 2 factorial design (as presented in Table 1), using a pretest-posttest with control group and repeated-measures design, was applied for conceptual framework. The youths were allocated into one of four groups at random as below with no bias (Random Assignment), consisting of 30 individuals per a group.

The random assignment, divided into 4 groups with 30 individuals per a group, was carried out by having participants register in a queue, with every first registrant assigned to Group 1, the second to Group 2, the third to Group 3, and the fourth to Group 4. The fifth to Group 1, the sixth to Group 2, the seventh to Group 3, the eighth to Group 4 was repeated until all 120 individuals were assigned.

Table 1 Experimental Groups and Controlled Groups

Group	Pretest	Treatment Variables	Posttest	Repeated	Group
1	✓	Training in psychological traits + Training in skills for social ethics	✓	✓	100%
2	✓	Training in psychological traits + Training in other contents	✓	✓	50%
3	✓	Training in skills for social ethics + Training in other contents	✓	✓	50%
4	✓	Training in other topics	✓	✓	Controlled

Training Procedure

1. At the beginning phase of gathering the questionnaires (before the training), the researcher team introduced themselves, described the purposes, provided the instructions including how to respond the questionnaires. The sampling then fulfilled the questionnaires around 1 hour.

2. After finishing the questionnaires, the sampling underwent the training as assigned by the instructor team as follows: Group 1 trained the trainings on psychological traits and skills for social ethics. Group 2 trained in psychological traits and other topics. Group 3 trained in skills for social ethics and other topics. Group 4 trained in other topics. The trainings were conducted by watching video clips, play role, class presentation, and group activities around 10-hour training for each group.

3. In the second phase of completing the questionnaires (after the training), the sampling completely attended the 10-hour training. The researcher team distributed the questionnaires, described the purposes, and provided the instructions for fulfilling it to the sampling group around 1 hour.

4. In the third phase, the data were collected for following up three-month after the training. The researcher team gathered the questionnaires with the same sampling as in the beginning and second phases around 1 hour.

Measurement Tools

This study had five tools to measure several variables including moral reasoning, positive attitudes toward socially ethical behaviors, sufficiency-oriented behavior, responsible behavior, honest behavior, public-minded behavior and grateful behavior. A socio-demographic characteristics and background was also conducted, totally six tools. The researcher used the measurement tools with six assessing ranges from “very true” to “not true at all”.

Tools Validity

In this research, all measurement tools were assessed content validity assessment by experts to review whether the content covered the operational definitions of the variables. The reliability coefficients of each questionnaire were as follows: moral reasoning at 0.810, positive attitudes toward socially ethical behaviors at 0.840, sufficiency-oriented behavior at 0.820, responsible behavior at 0.840, honest behavior at 0.860, public-minded behavior at 0.830, and grateful behavior at 0.810

Data Collection

Data collection was conducted in three stages. The first stage was to gather data before the experiment that the youths who participated the training answered measurement tools and questionnaires before joining the training. The second stage was the collection after the training immediately. The third stage was the data gathering three-month after the training. Researchers and co-researchers collected all data by themselves.

Statistics for Data Analysis

The researcher employed data analysis by 1) General information and basic characteristics of variables using descriptive statistics by percentages, means, standard deviations, ranges, and correlation coefficients between variables, 2) Normality tests by skewness, kurtosis, and Kolmogorov-Smirnov Test, 3) Homogeneity of Variance-Covariance Matrices by Box's M to examine the assumption for statistical analysis and Levene's Test to check the equality of variances for all variables, 4) Hypothesis testing by using Analysis of Covariance (ANCOVA).

This research was approved from the Human Research Ethics Committee of Uttaradit Rajabhat University in accordance with the certification number URU-REC No. 001/2024. The right to provide participant's information was explained voluntarily and all of the data were kept confidential.

Results

The results of the statistical analysis for the basic variables of the sample group are as follows: Gender: the majority by female at 68 individuals (56.670%), Birth order: not the eldest child at 78 individuals (65.000%), Living situation: the majority lived with both parents at 65 individuals (54.170%), Mother's occupation: self-employed or farmers at 70 individuals (58.330%), Father's occupation: mostly government officials or other professions at 70 individuals (58.330%), Seeking advice when encountering problems: from parents at 80 individuals (66.670%), Weekend activities: indoor activities at 75 individuals (62.500%), Time spent on online media: five hours or less per day at 76 individuals (63.330%), Father's education level: Primary to high school education at 78 individuals (65.000%), Daily allowance: over 120 THB per day at 70 individuals (58.330%), Number of close female friends: more than six at 68 individuals (56.670%).

Table 2 Results of the Analysis of Covariance Under the Training Format in the Phase After the Training Immediately. By Using Moral Reasoning, Positive Attitudes Toward Socially Ethical Behaviors, and Socially Ethical Behaviors for Pre-experiment as Covariates.

Sources of Variation	SS	df	MS	F	p
Between the Group of Moral Reasoning	4.496	3	1.499	5.732*	.001
Between the Group of Positive Attitudes	4.864	3	1.621	2.910*	.038
Between the Group of Socially Ethical Behaviors	3.532	3	1.177	8.232*	.000
Error on the Group of Moral Reasoning	29.544	113	0.261		
Error on the Group of Positive Attitudes	62.948	113	0.557		
Error on the Group of Socially Ethical Behaviors	16.161	113	0.143		
Including the Group of Moral Reasoning	3428.120	120			
Including the Group of Positive Attitudes	2852.650	120			
Including the Group of Socially Ethical Behaviors	3220.564	120			

* with the level of statistical significance at .050

According to Table 2, the results of data analysis demonstrated that, after the training immediately, the youths who underwent training formats showed differences in moral reasoning ($F = 5.732, p = .001$), positive attitudes toward socially ethical behaviors ($F = 2.910, p = .038$), and socially ethical behaviors ($F = 8.232, p = .000$), with the level of statistical significance at .05. As a result, pairwise comparisons were conducted between training formats in moral reasoning, positive attitudes toward socially ethical behaviors, and socially ethical behaviors, as presented in Table 3.

Table 3 Results of Pairwise Comparison of Mean Scores of Dependent Variables Between Training Formats in the Phrase. After the Training Immediately.

Variables	Experimental Formats	Mean Scores	Pairwise Comparison	Mean Difference	SE	P
Moral Reasoning	Psycho Traits + Skills PS	5.626	PS – P	.277	.135	.260
	Psychological Traits P	5.348	PS - S	.445*	.135	.010
	Skills S	5.181	PS - C	.527*	.142	.000
	Controlled Group C	5.099	P - S	.168	.135	1.000
			P - C	.250	.135	.400
			S - C	.082	.135	1.000
Positive Attitudes Toward Socially Ethical Behaviors	Psycho Traits + Skills PS	5.116	PS – P	.407	.198	.250
	Psychological Traits P	4.709	PS - S	.212	.197	1.000
	Skills S	4.904	PS - C	.588*	.208	.030
	Controlled Group C	4.528	P - S	-.195	.198	1.000
			P - C	.181	.197	1.000
			S - C	.376	.210	1.000
Socially Ethical Behaviors	Psycho Traits + Skills PS	5.322	PS – P	-.005	.100	1.000
	Psychological Traits P	5.327	PS - S	.408*	.100	.000
	Skills S	4.915	PS - C	.240	.105	.150
	Controlled Group C	5.082	P - S	.413*	.100	.000
			P - C	.245	.100	.090
			S - C	-.167	.106	.710

* with the level of statistical significance at .050

According to Table 3, the results of the pairwise comparison of mean scores of each variable (moral reasoning, positive attitudes toward socially ethical behaviors, and socially ethical behaviors) between training formats in the phrase after the training immediately demonstrated as follows:

The mean score of moral reasoning was significantly higher among Thai youths who underwent the trainings in psychological traits and socially ethical skills compared to those who trained only the training in socially ethical skills and those who did not train any training in psychological traits and socially ethical skills. These differences were statistically significant at the 0.05 level, with mean differences of 0.445 and 0.527 in order.

The mean score of positive attitudes toward socially ethical behaviors was significantly higher among Thai youths who underwent the trainings in psychological traits and socially ethical skills compared to those who did not train any training in psychological traits and socially ethical skills. These differences were statistically significant at the 0.05 level, with a mean difference of 0.588.

The mean score of socially ethical behaviors was significantly higher among Thai youths who underwent the trainings in psychological traits and socially ethical skills compared to those who trained only the training in socially ethical skills. These differences were statistically significant at the 0.05 level, with a mean difference of 0.408. Additionally, the mean score of socially ethical behaviors among Thai youths who underwent only the training in psychological traits was significantly higher than those who trained only the training in socially ethical skills. These differences were statistically significant at the 0.05 level, with a mean difference of 0.413.

Table 4 Results of the Analysis of Covariance for Each Variable of Dependent Variables Under Training Formats In the Phase of Three-Month After the Training by Using Moral Reasoning, Positive Attitudes Toward Socially Ethical Behaviors, and Socially Ethical Behaviors for Pre-experiment as Covariates

Sources of Variation	SS	df	MS	F	p
Between the Group of Moral Reasoning	9.570	3	3.190	10.525*	.000
Between the Group of Positive Attitudes	6.751	3	2.250	5.157*	.002
Between the Group of Socially Ethical Behaviors	3.168	3	1.056	4.830*	.003
Error on the Group of Moral Reasoning	34.247	113	0.303		
Error on the Group of Positive Attitudes	49.316	113	0.436		
Error on the Group of Socially Ethical Behaviors	24.703	113	0.219		
Including the Group of Moral Reasoning	3343.170	120			
Including the Group of Positive Attitudes	2927.370	120			
Including the Group of Socially Ethical Behaviors	3184.426	120			

* with the level of statistical significance at .050

According to Table 4, the results of data analysis demonstrated that, in the phase of three-month after the training, the youths who underwent training formats showed differences in moral reasoning ($F = 10.525, p = .000$), positive attitudes toward socially ethical behaviors ($F = 5.157, p = .002$), and socially ethical behaviors ($F = 4.830, p = .003$), with the level of statistical significance at .05. As a result, pairwise comparisons were conducted between training formats in moral reasoning, positive attitudes toward socially ethical behaviors, and socially ethical behaviors, as presented in Table 5.

Table 5 Results of Pairwise Comparisons of the Mean Scores of Dependent Variables Between Training Formats in the Phase of Three-Month After the Training

Variables	Experimental Formats	Mean Scores	Pairwise Comparison	Mean Difference	SE	P
Moral Reasoning	Psycho Traits + Skills PS	5.690	PS – P	.388	.146	.050
	Psychological Traits P	5.302	PS - S	.665*	.145	.000
	Skills S	5.025	PS - C	.751*	.153	.000
	Controlled Group C	4.939	P - S	.277	.146	.360
			P - C	.363	.145	.080
			S - C	.086	.155	1.000
Positive Attitudes Toward Socially Ethical Behaviors	Psycho Traits + Skills PS	5.255	PS – P	.504*	.175	.030
	Psychological Traits P	4.751	PS - S	.267	.174	.770
	Skills S	4.988	PS - C	.686*	.184	.000
	Controlled Group C	4.569	P - S	-.237	.175	1.000
			P - C	.182	.174	1.000
			S - C	.419	.186	.160
Socially Ethical Behaviors	Psycho Traits + Skills PS	5.208	PS – P	-.126	.124	1.000
	Psychological Traits P	5.334	PS - S	.318	.123	.070
	Skills S	4.890	PS - C	.131	.130	1.000
	Controlled Group C	5.076	P - S	.444*	.124	.000
			P - C	.258	.123	.230
			S - C	-.187	.132	.950

* with the level of statistical significance at .05

According to Table 5, the results of pairwise comparisons of the mean scores of each variable (moral reasoning, positive attitudes toward socially ethical behaviors, and socially ethical behaviors) between training formats in the phase of three-month after the training demonstrated as follows:

The mean score of moral reasoning was significantly higher among Thai youths who underwent the trainings in psychological traits and socially ethical skills compared to those who trained only the training in socially ethical skills and those who did not train any training in psychological traits and socially ethical skills. These differences were statistically significant at the 0.05 level, with mean differences of 0.665 and 0.751 in order.

The mean score of positive attitudes toward socially ethical behaviors was significantly higher among Thai youths who underwent the trainings in psychological traits and socially ethical skills compared to those who trained only the training in socially ethical skills and those who did not train any training in psychological traits and socially ethical skills. These differences were statistically significant at the 0.05 level, with mean differences of 0.504 and 0.686 in order.

The mean score of socially ethical behaviors was significantly higher among Thai youths who underwent only the training in psychological traits compared to those who trained only the training in socially ethical skills. These differences were statistically significant at the 0.05 level, with a mean difference of 0.444.

Discussions

The research discussions reveal that Thai youths who underwent integrated trainings in psychological traits and skills exhibited higher mean scores in moral reasoning, positive attitudes towards socially ethical behaviors, and socially ethical behaviors after the assessment of immediate training. It is aligned with the principles of the Ethical Tree Theory Bhanthumnavin (1996), which states that individuals who possess multiple desirable psychological traits also tend to demonstrate more desirable psychological traits and behaviors.

The findings support the hypothesis of the dependent variable in moral reasoning. These results are consistent with the research by Mouratidou & Chatzopoulos (2007), which studied the effectiveness of physical education in developing moral reasoning among secondary school students. The key finding of that study was that after participating in a redesigned physical education course aimed at fostering learning motivation and a positive classroom atmosphere, the experimental group showed a statistically significant improvement in moral reasoning compared to the controlled group. Similar findings were reported in Doyle (2015), study on the effectiveness of instructional formats for enhancing moral reasoning among students and in Torabizadeh et al. (2018), study on nursing students, which found significant improvements in moral reasoning among the experimental group.

The research by Klinkesorn et al. (2019), found that a specific activity program successfully developed moral reasoning and professional ethics in media professionals in five areas: self-sacrifice, honesty, responsibility, fairness, and awareness on public interest. In overall, the development of moral reasoning in media professionals was classified at Level 2. Moreover, the research by Pinpradit et al. (2014), indicated that most youth exhibited moral reasoning at Level 3, progressing towards Level 4 which reflected adherence to societal duties. Their study also developed a self-directed ethics curriculum structured as a branching program, incorporating 9 ethical dilemma scenarios. The findings suggested that this self-directed ethics curriculum effectively stimulated moral reasoning development among learners. Furthermore, the research of Nedwong (2013), found that the moral reasoning of the sample group showed improvement, with most participants reaching Level 5. This finding aligns with Kohlberg (1975) that individuals changed their progress through stages of moral reasoning in a sequential manner, reflecting a universal structure of ethical development. Moral development definitely occurred without skipping any stages. Kohlberg's six stages of moral reasoning encompassed human development from birth to its highest level of moral maturity and were considered universal. This means that individuals, regardless of their country, ethnicity, or cultural background, are likely to progress through these stages in a sequential manner from lower to higher levels. While individuals may develop at different rates either rapid or slow, some may reach the higher stages (Stages 5–6), while others may only progress to the intermediate (Stages 3–4) or initial stages (Stages 1–2).

The findings also support the hypothesis regarding the dependent variable of positive attitudes towards socially ethical behavior. These results aligned with the perspective of Ajzen & Fishbein (1980) that attitudes were closely linked to behavioral expression. That was, attitudes influence an individual's behavior, while behavioral expressions also impacted an individual's attitudes. Since attitudes encompassed what individuals thought, felt, and were motivated to act upon, they served as a main construct of complex social psychology with influences to ideas and social behaviors. Additionally, daily life experiences played a crucial role in shaping, modifying, and transforming attitudes. Social information and attitudes were categorized in ways that influenced behavioral expressions with logics.

Past researches related to or closely aligned with the variable of positive attitudes toward socially ethical behaviors included the research by Bhanthumnavin & Bhanthumnavin

(2021), which found multiple short-term and long-term benefits for both mental and behavioral aspects. The findings indicated that behavior of adherence to rules and the support of ethical conduct. Similarly, the research of Upamairat (2018), explained that an experimental group that participated in a self- regulation program which was the development of adolescent learning processes, positive attitude adjustments, and enhanced self- regulation skills that led to the appropriate improvements. As a result, this program enabled participants to develop systematic self- management skills, reinforcing their knowledge and confidence in managing their behavior systematically. Moreover, the self-regulation program contributed to increasing knowledge and self- control behaviors, strengthening psychological resilience, and enhancing participants' capabilities in engaging in various activities more effectively. Additionally, it enabled students to manage their thoughts, behaviors, and emotions while maintaining motivation through self-regulation. This, in turn, facilitated their ability to execute planned life activities consistently, helping them progress toward their intended goals smoothly.

Among groups of Thai youths who trained only the training in either psychological traits or socially ethical skills, as well as those who trained no any training, no significant differences were observed. Therefore, it can be stated that integrated training in psychological traits and skills concurrently has the most substantial impact on changes in moral reasoning, positive attitudes toward socially ethical social behaviors, and socially ethical social behaviors. Training in only one aspect is insufficient to achieve the outcomes.

Conclusion and suggestions

The findings revealed that 1) For the phase after the training immediately, Thai youth who underwent the trainings in psychological traits and socially ethical skills had a higher mean score in moral reasoning compared to those who trained only the training in socially ethical skills or no any training. Additionally, they exhibited more positive attitudes toward socially ethical behaviors than those who did not train any training. Their socially ethical behaviors were higher than Thai youths who only underwent in socially ethical skills, 2) For the phase of three-month after the training, Thai youths who trained the trainings in psychological traits and socially ethical skills demonstrated a higher mean score in moral reasoning than those who trained only the training in socially ethical skills or no any training. Moreover, their positive attitudes toward socially ethical behaviors remained higher than Thai youths who only trained in psychological trait or no any training.

New knowledge and the effects on society and communities

1. From the results of experimental research, the researchers concurrently conducted integrated training in psychological traits and skills that led to an increase in psychological traits as well as socially ethical behaviors, both after the training immediately and three-month after the training. Since these behaviors require time and contextual adaptation, and the findings show if psychological traits and skills are trained together, it can reflect the training effectiveness. Related organizations can adopt this approach to assess the behaviors of the youths in the future.

2. This research is an inclusive experimental study to create and manifest the effectiveness of an integrated training of important psychological traits and skills, proving the cause and effect with the rigorous design, by pretest-posttest with a control group and repeated measures design. The study measured outputs after the training immediately and three-month after the training by focus on giving practical guidance and support the youths for solving issues by applying the acquired outcomes from the trainings to their current and future living lives.

This type of training is directly beneficial to desired psychological traits and behaviors among the youths in community.

3. This training was the research with continuous assessment and follow-up of outputs both after the training immediately and three-month after the training. The follow-up during three-month after the training was operated by a rigorously systematic data collection to collect clear data and contribute to genuine development.

4. The study produces a training manual for both psychological traits and skills, which can be utilized by public and private sectors to further train and enhance on socially ethical behaviors.

5. The research findings can be applied on a broader scale to the youths in communities across different regions. Additionally, the research findings can be formulated to concrete measures and policies.

6. To include this training program in the university curriculum or student activities can demonstrate how research findings are practically applied in institutional or community levels, thereby enhancing the clarity of its policy implications.

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Public Trust in Political Leadership During COVID-19 Pandemic in Thailand

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Abstract

This research aims to 1) study the desirable political leadership attributes that enable effective leaders to manage COVID-19 crises in Thailand, 2) survey and identify the level of public trust in 2 Thai political leaders. The prime minister and the minister of public health. The data was collected during the COVID-19 pandemic in Thailand between march – may 2021. The qualitative data was collected via semi-structured interviews with 20 persons; including university professors, politician, official servants, and analyzed by domain analysis and taxonomy. The quantitative data was collected by the online questionnaire distributed to 200 samplings; measured by means and standard deviation analysis. The research instrument was statistical analysis consisted of percentage, mean, standard deviation, t-test, One-way anova, least significance difference test and pearson product-moment correlation coefficient. The level of significance for statistical testing was 0.05. The reliability test was cronbach's alpha at 0.70. The research findings suggest that, to be an effective leader during a crisis, political leaders need to be: visionary; courageous; calm; inspirational; ethical; empathetic; authentic; integrity; decision maker and resilient. For aspect of levels of public trust in political leadership, the average of public trust in the prime minister (PM) was at moderate level, visionary, clam and inspirational characteristics were at the lowest level. The minister of public health was at the lowest level, political leader's integrity and visionary were slightly low. The implication of findings led to political policy-making about the public communication of politicians.

Keywords: Public trust, Political leadership, COVID-19

Introduction

The initial responses to the COVID-19 pandemic in Thailand was crucial to generate trust in the COVID-19 restrictions. The aim was to investigate the extent to which there was trust in the handling of the pandemic by Thai governments and public health authorities in the country. On 22 January 2020, the World Health Organization (WHO) briefed reporters about the emerging outbreak of a novel coronavirus, COVID-19, that had originated in China's Wuhan province in December of 2019. On January 30, WHO declared COVID-19 a public health emergency of international concern (PHEIC), and on March 11, a global pandemic (WHO, 2020). The COVID-19 pandemic is a public health crisis without precedent in living memory, which is testing our collective capacity to respond" (OECD, 2020). It spreads across the globe. At the time of writing, the pandemic is ongoing and has affected over 227 countries and territories (Chen et al., 2020). The impact of COVID-19 in different countries has varied significantly due to factors including but not limited to governmental response, demographics,

and healthcare infrastructure. In February, the WHO released a strategic response plan for the coronavirus that aimed to limit transmission, care for patients, stop transmission from animals, learn how to fight the virus, communicate facts, counter misinformation, and minimize the social and economic consequences.

Thailand has been affected by COVID-19, like other countries in the Asian region at an early stage, and the first case was reported as early as mid-January 2020. Thailand's response to the COVID-19 pandemic has been guided by the "Integrated Plan for Multilateral Cooperation for Safety and Mitigation of COVID-19", which was drafted by the ministry of public health for the following objectives: 1) Reducing the chances of the virus transmission into Thailand, 2) Everyone in Thailand and Thai people abroad are safe from COVID-19, 3) Mitigating the health, economic, social impacts and increasing national security.

The Thai government provided daily updates on COVID-19 infections in Thailand via television and used the media to inform the citizens of new restrictions, safety precautions, and any other official news regarding the pandemic. Throughout the world warnings to "New Normal" have been issued. A number of countries (including Thailand) closed their borders; many airlines made a considerable reduction in their national and international flights; almost all sports events and competitions were cancelled or suspended; educational institutions were closed and applied the online-teaching and learning methods. The businesses and official government agencies deemed unessential were required to close and work from home. At the first stage of COVID-19 pandemic in Thailand, the complication of political communication, leadership of politicians and the vaccination distribution are the main problems which lead to the public trust of government.

The topic of public trust in government has become increasingly important as the COVID-19 pandemic ravaged many countries in the world, including Thailand. Until and unless the public trust the way their governments tackle the pandemic, the infections and deaths will stay high and continue to increase. If the public trust their governments, they will be more willing to support and comply with government's policy and regulation during the COVID-19 pandemic. Otherwise, noncompliance could result in serious consequences for the society such as the collapse of the healthcare system and social security. A lack of trust has serious consequences for the country. When people don't trust their government, they are more likely to opt out of voting and other types of civic participation. People who distrust the government are less likely to follow public health guidelines.

The outbreak of the pandemic is a challenge to both public healthcare capacity and trust in government. It is, therefore, extremely important to explore public trust and political leadership in the government during the COVID-19 pandemic. Public trust in government is a critical element for the successful functions of any level of government, whether it be local or state. Trust is the foundation upon which government organizations build legitimacy and credibility, and it is crucial for fostering effective governance. The study aims to answer the following questions: Do the Thais public trust their government during the COVID-19 pandemic? If so, what are the desirable political leadership attributes that enable effective leaders to manage COVID-19 crises in Thailand? Moreover, this aims to survey and identify the level of public trust in 2 Thai political leaders ; The Prime Minister and The Minister of Public Health. These research findings were useful for general people, scholars and students, moreover, the research results can be beneficial for politicians, political parties or political leaders to perceive the levels of political trust and apply these to the political policy.

Theoretical background

Political leadership in crisis

Political leadership is necessary either because people are not capable of self-rule or necessary because they are capable of self-rule. The political leader must balance their values and political beliefs with their duty to fulfill the will of the people. Political leaders' actions will reflect that, ultimately, people will have an opportunity to reject their sovereignty through the ballot box. Political leaders have a moral duty to serve their constituents through upholding values, enacting legislation, and ensuring public safety (Kearns et al., 2019) Scholars have advanced different types of political leadership. For example, democratic political leadership honors the pure democratic traditions of collaborative decision-making and policymaking (Sørensen & Torfing, 2019). Vanguard political leadership refers to fringe political groups, usually consisting of intellectuals and activists, that work to overthrow the dominant groups (Marcy, 2020).

As the COVID-19 continues to spread, political leaders need to evaluate their disaster recovery and pandemic plans. This will help them more in preparing for and responding to challenges. Overall, leading through a crisis requires taking the long view, as opposed to manage the present. However, leaders need to recognize that the return to work should happen in stages, and pandemic management protocols should be reviewed and refined. To help turn disruptions into productive and proactive business operations, and to maximize the odds of success, a set of steps were suggested (EY Americas, 2020). These include:

1. Create a coronavirus crisis management plan, recognize the difference between traditional disruption and pandemic-related disruption.
2. Appoint a crisis management team with representatives from each business function with direct line to the CEO.
3. Establish communication plan for employees, customers, vendors, and the public.
4. Determine the potential impact of COVID-19 on disrupting your operations.

The main streams of research on political leadership in crisis focuses on empirically investigating four key aspects of political leaders' managing a crisis: 1) their abilities to prioritize needs, select a team of qualified crisis-management experts, and execute a crisis-management plan; 2) their willingness to coordinate international partners to assemble a collective crisis response; 3) their ability to sustain domestic political support during a crisis period; and 4) their use of charismatic language to help others cope with a crisis.

Public trust

Public trust in government during the COVID-19 pandemic has been a issued topic since 2020. Different dimensions of public trust in government during the pandemic have been explored. Trust in government is important to the battle against the COVID-19 pandemic because it enhances public cooperation with government's measures and pointed out that during crisis such as war and pandemic, trust and support for government increase as the result of the rally-around-the-flag effects. (Esaiasson et al.,2021)

While the word "trust" can have many definitions and meanings, for this report, trust in government is defined as the public's perception of government based on expectations of how it should operate. Trust is the public's belief that the federal system and the politicians who lead or oversee it are "responsive and will do what is right even in the absence of scrutiny. Trust is a multidimensional concept, which is approached from different disciplines and perspectives (Stern & Baird, 2015). Trust is also viewed as social capital, which is crucial in personal, occupational, and social domains (Szkudlarek & Biglieri, 2016). Trust is associated with distrust, risks, and vulnerabilities. Hawley (2012) argued that trust is closely related to "reliability, predictability, expectation, cooperation, goodwill" and at the same time "distrust, insincerity, conspiracy, betrayal, and incompetence."

Trust and confidence in government are important for the capacity of a society to organise an effective collective response to an epidemic. Trust in government is pivotal to the implementation of policies against the COVID-19 pandemic. Bavel et al. (2020) stated that higher level of trust in government results in more compliance with health policies such as ban on gatherings. Public trust in government during the COVID-19 pandemic is required for “obtaining successful results of economic and social stimulus policies and providing full effect to slow down the rate of outbreaks.” It is, therefore, worthwhile to explore how much the public trust the government and whether public trust is translated into support and compliance with government’s policy and regulations.

Research Objective

1. To explore the Critical Political Leadership Qualities for Managing the COVID-19 Crisis in Thailand
2. To assess and recognize the extent of public trust of two Thai political leaders ; The Prime Minister and The Minister of Public Health.

Methodology

The qualitative data was collected via semi-structured interviews with 20 persons; including 10 university professors, 5 politicians and 5 official servants. The sample question ; “In your point of views, what are the effective political leadership in COVID-19 crisis?” The gathered data was analyzed by domain analysis and taxonomy methods. The content validity was measured by the Content Validity Index: CVI method.

The quantitative data was collected by the online questionnaire distributed to 200 samples using Stratified Random Sampling technique. To measure the level of public trust of 2 political leaders in responding to the COVID-19 pandemic, the respondents were requested to identify their level of trust in political leaders by the questionnaire of a 5-point Likert scale with 1 as “very low” and 5 as “very high”.

- 4.50 – 5.00 Highest
- 3.50 – 4.49 High
- 2.50 – 3.49 Moderate
- 1.50 – 2.49 Low
- 1.00 – 1.49 Lowest

The 10 aspects of political leadership are in visionary; courageous; calm; inspirational; ethical; empathetic; authentic; integrity; decision maker and resilient. The data was measured by means and standard deviation analysis. and the reliability of questionnaires was tested by Cronbach’s Alpha at 0.70.

Results

Political leadership

Based on the analysis of semi-structure interview, the political leadership characteristics are shown in Figure 1.



Figure1 Political leadership characteristics

In Figure 1, to sum up, the 10 effective political leadership characteristics of political leaders (PM and MPH) are visionary; courageous; calm; inspirational; ethical; empathetic; authentic; integrity; decision maker and resilient. During the COVID-19 pandemic, a country's performance was closely tied to the level of political trust among its citizens. Areas with higher trust experienced lower rates of infection and fatalities before vaccines became available. However, the crisis also led to a decline in trust towards leaders.

Level of Public Trust in Political Leadership

Table 1 Level of Political Trust in Political Leaders in COVID-19 Pandemic

Characteristics of Political leadership	Prime Minister (PM)			Minister of Public Health (MPH)		
	Mean	S.D.	Level	Mean	S.D.	Level
Visionary (Setting a common goal or purpose through innovation and collaboration.)	1.39	0.91	Lowest	1.42	0.39	Lowest
Courageous (Strength, creativity, intellect and embracing uncertainty.)	3.50	1.20	Moderate	2.12	1.01	Low
Calm (Fueled by emotions but not controlled by them. Under pressure, calm leadership is focused and present, it does not panic.)	1.31	0.87	Lowest	1.49	0.93	Lowest
Inspirational (The ability to be a positive influence on those around you and motivate others toward success.)	1.44	0.92	Lowest	1.37	1.07	Lowest
Ethical (Solving problems in a way that is fair to everyone.)	2.91	1.03	Low	1.39	0.98	Lowest
Empathetic (Genuine interest in his/her team members' lives.)	2.73	1.10	Low	1.41	0.69	Lowest
Integrity (Having strong moral principles.)	3.51	1.37	High	1.35	0.91	Lowest
Decision maker (Ability to assess a situation and determine how the organization may proceed.)	2.94	0.98	Moderate	2.10	1.24	Low
Resilient (Ability to see failures as minor setbacks.)	3.02	1.04	Moderate	1.70	1.03	Low
Total	2.82	1.73	Moderate	1.46	1.34	Lowest

Table 1 shows that the level of public trust in The Prime Minister (PM) was at moderate level (mean = 2.82, S.D.=1.73), visionary, clam and inspirational characteristics were at the lowest level. The aspect of integrity was the only aspect which considered high. The Minister of Public Health (MPH) was at the average lowest level (mean = 1.46, S.D.=1.34). The aspect of courageous, decision making and resilient were measured as low level.

Discussions

The world was hit by the historic COVID-19 epidemic in early 2020. One notable aspect of this pandemic is the rise in popular confidence in political leaders in many democracies. At least in the early stages of the epidemic, trust in the government, democracy, and political figures like presidents and prime ministers rose, according to a number of study groups. Based on the COVID-19 pandemic in Thailand, this research aimed to analyse the importance of citizens' evaluations of the executive's performance in explaining the increase in trust in the political leaders the emergence of the pandemic. In particular, investigated the importance of cognitive factors, such as citizens' assessments of the economic performance and of the policy response to the crisis, compared to psychological factors, such as concern and fear regarding the COVID-19 disease.

Public trust in government is important in time of crisis, especially in the current COVID-19 pandemic the worst health crisis in the twenty-first century. Trust in government is the driver for public support and compliance with government's policy and regulation, which is essential for successful pandemic management. Effective policy communication and implementation lead to public trust in government meanwhile trust in government results in citizens' support for and compliance with government's policy. Studies show that higher political trust is associated with more compliance in general (VanDeth 2017), and higher effectiveness of stringency policies in the case of COVID-19 (Chen et al. 2020). Our study provides an overview of the perception of government actions during the COVID-19 pandemic in March and April 2020 around the world. The results show a large heterogeneity between countries, found that, on average, stronger and faster stringency of anti-pandemic measures and a smaller number of deaths are positively associated with trust in the governments' handling of the pandemic. The findings of public trust in this study shows that in period of pandemic the public trust in main political leaders (PM and MPH) slightly low-lowest. That situation leads Thailand's response to COVID-19 has been quite ineffective in limiting the spread of the disease, it falls short at being able to address the multiple dimensions of the crisis, such as the economic and social impacts.

Conclusion and suggestions

In conclusion, the COVID-19 pandemic exposed the need for effective leadership in all sectors, particularly in politics. Politicians at different levels of government have a significant role in leading their communities, particularly during a crisis. Crisis leadership is essential, particularly given the implications on public wellbeing. Lack of trust in government can be a circular, self-reinforcing phenomenon: poor performance leads to deeper distrust, in turn leaving government in the hands of those with the least respect for it. Despite extensive research on leadership, there is limited research on what it takes to be a political leader during a crisis.

Suggestions for the further study

The pandemic of COVID-19 has barred Thailand from developing growth and resulted Thailand in its inefficient development in many areas. The public trust is a key factor of problem-solving. According to the research findings, the suggestion about other supplementary or further research to study about the public trust and political leadership are ;

1. The researcher conducted this research during the two months of a global pandemic in Thailand (March – May 2021). Extending the time horizon to include the entirety of the pandemic could help refine lessons learned. It will be possible to map some leaders' behaviors to outcomes such as flattening the curve, hospitalization rates, peak contraction rates, and mortality rates.

2. More studies are needed to investigate the extent to which this result can be generalised to different crisis scenarios and study the public trust in the Post-COVID-19 pandemic. The findings should be analyzed and compared in order to find out the best practice of the politicians.

3. This study found that a single leadership theory is unlikely to capture all the attributes necessary to lead during a crisis – instead, the essential attributes are likely to be associated with different leadership theories. This suggests the need for complementary leadership theories to understand crisis leadership.

Suggestions for the Proposed policy

1. Government should promote public of conscience and social value of public trust
2. Government should urge to build accountability, transparency and political participation for people to participate in COVID-19 solving.

New knowledge and the effects on society and communities

This study also revealed that the political leader-role significantly influenced their political trust. Furthermore, political trust had significant, positive influences on both internal and external political efficacies. Trust in the government (political leaders) inspired the approval and confidence in their own ability to engage more in political participation; trust in government led to recognize government's responses to public demands more. Trust and confidence in government play a crucial role in how effectively a society can respond collectively to an epidemic. However, facing such a crisis can also undermine individuals' trust in political institutions and leaders, which can have negative consequences for this collective effort. Our research indicates that this detrimental effect is significant and lasting.

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Rethinking the Vietnam War: Vietnamese representation and the Limits of Superpower Narratives

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Abstract

This study re-examines the Vietnam War through an agent-centered analytical framework, challenging dominant Cold War historiography that positions Vietnam as a passive battleground for superpower competition. Drawing on political science, postcolonial theory, and international relations, the research integrates diplomatic archives, oral histories, and cultural memory studies to recentralize Vietnamese agency and foreground Sino-Vietnamese interactions. The analysis reveals how indigenous political movements, postcolonial state-building imperatives, and small-state survival strategies shaped the conflict's trajectory and outcomes.

Findings demonstrate that while U.S. containment policies and Sino-Soviet rivalries provided structural constraints, Vietnamese political elites, civil society actors, and ordinary citizens actively negotiated, redefined, and ultimately determined the war's meaning and legacy. The study contributes to international relations theory by advancing a decentered geopolitical framework that reconceptualizes minor states and local actors as co-architects rather than passive recipients of global order. Contemporary implications include strategic lessons for small states navigating great-power competition and methodological innovations for writing inclusive, multi-vocal histories of conflict.

Keywords: Vietnam war, Vietnamese agency, Cold war historiography, Small-state strategy, Postcolonial theory, Contested memory, Sino-Vietnamese relations

Introduction

The post-World War II era saw the United States institutionalize containment as a strategic doctrine aimed at halting the global spread of communism particularly movements aligned with the Soviet Union. This doctrine ushered in an era of proxy conflicts that redefined America's global engagements. Among these, the Vietnam War emerged as the most prominent and protracted expression of ideological confrontation, with Washington and Moscow backing rival regimes and insurgent groups across the Global South. U.S. containment policy materialized through multilateral military alliances such as NATO and covert interventions targeting leftist governments (Lewy, 1978). These efforts reflected long-standing ideological anxieties dating back to the Bolshevik Revolution, which had cast both communism and fascism as existential threats to liberal democratic capitalism. Domestically, Franklin D. Roosevelt's New Deal intended to stabilize capitalism and preempt radicalization faced conservative resistance over its perceived socialist inclinations (Thayer, 1985). Roosevelt's strategic alliance with anti-communist Catholic constituencies (Heineman, 2001), followed by

the Red Scare and McCarthyism, further entrenched ideological divisions within American political culture.

While mainstream interpretations often depict U.S. foreign policy as a reaction to external communist threats, this study argues that domestic political dynamics particularly anti-communist paranoia and economic protectionism were key internal drivers of American interventionism. From Truman's Marshall Plan to Kennedy's covert operations in Southeast Asia, Johnson's escalation under the "domino theory," and Nixon's "Vietnamization" strategy, successive administrations adapted Cold War tactics while maintaining a coherent ideological vision.

Despite extensive scholarship over six decades, the Vietnam War remains overwhelmingly framed through an American-centric lens. Dominant narratives focus on U.S. strategic failures and domestic anti-war activism, frequently neglecting the conflict's regional dynamics especially China's strategic interests and Vietnam's internal political struggles. This article proposes a tripartite analytical framework that integrates political science, postcolonial theory, and international relations to recentralize Vietnamese agency and foreground Sino-Vietnamese interactions. By moving beyond Cold War historiography's superpower fixation, the study underscores how indigenous political movements, postcolonial state-building imperatives, and small-state survival strategies shaped the war's trajectory.

Methodologically, the study departs from traditional historiographical gap-filling by advancing a decentered geopolitical analysis. Through an interdisciplinary synthesis of diplomatic archives, oral histories, cultural memory studies, and insurgent narratives, it reconceptualizes minor states and local actors not as passive participants but as co-architects of global order. This approach reveals how contested memories, postcolonial aspirations, and subaltern political decisions in Vietnam intersected with and at times subverted the designs of great powers.

Research Objectives

1. To reassess North Vietnam's ideological autonomy and foreign policy formulation within the Sino-Soviet schism;
2. To examine the contributions of students, religious groups, and intellectuals to South Vietnam's political culture alongside memory construction processes;
3. To analyze China's indirect interventionism through the prism of premodern Sino-Vietnamese relations rather than Cold War binaries;
4. To critique conventional historiography's neglect of Vietnamese decision-making complexity and narrative sovereignty.

Literature Review

Vietnamese Agency and Strategic Autonomy

Contemporary historiography increasingly challenges the paradigm of U.S.-centric Vietnam War scholarship, instead advocating for what might be termed the "Vietnamization" of conflict studies. This epistemological shift prioritizes local actors as primary historical agents, moving beyond critiques of American exceptionalism to reconstruct Vietnamese revolutionary praxis. Thu (2018) occupies a prominent position in scholarship examining the DRV leadership's ideological negotiations during the Cold War. His analysis reveals how Vietnamese communists strategically adapted Marxist-Leninist doctrine through syncretism with Confucian ethics and anti-colonial experiences, asserting intellectual independence from Soviet and Chinese orthodoxy. Scholarly consensus remains elusive regarding Hanoi's operational autonomy. Pierre Asselin (2002) maintains that Chinese logistical support and Soviet military technology constituted necessary conditions for North Vietnamese resilience. Conversely, Zhai (2001) demonstrates Hanoi's capacity for diplomatic triangulation, arguing

that DRV leaders exploited Sino-Soviet rivalry to secure maximum aid while preserving strategic flexibility a phenomenon he terms "revolutionary pragmatism." This dialectic between dependency and self-determination provides critical insights into small-state survival strategies within bipolar power structures.

Memory, Culture, and Competing Narratives

Schwenkel's (2009) transnational memory studies dismantle the capitalism-communism dichotomy by documenting how Vietnamese war commemoration incorporates American veteran narratives and socialist visual culture. Her work exposes the constructed nature of "heroic resistance" tropes through analysis of museum curatorial practices and memorial landscapes. Kwon (2008) employs anthropological methods to map Vietnam's "ghostly epistemology" commemorative practices where ancestral spirits mediate wartime trauma. By analyzing village rituals and spirit mediumship, Kwon reveals how vernacular memory production challenges state-controlled historical narratives, creating alternative moral economies of remembrance (Kwon, 2006). The emergent Vietnamese diasporic scholarship further complicates historical understanding. Narratives from former South Vietnamese officials, refugees, and second-generation scholars interrogate the Socialist Republic's official historiography while contesting Western academic paradigms. These polyphonic accounts foreground themes of displacement, divided loyalty, and postcolonial identity reconstruction, injecting necessary moral complexity into war scholarship.

Methodology

This study employs a qualitative, cross-disciplinary research design that integrates methods from political science, international relations, and cultural history. The methodology operationalizes the research objectives by combining structural analysis of geopolitical constraints with interpretive analysis of agency, memory, and identity formation.

Research Design

The research adopts a case study approach centered on Vietnam's wartime experience (1955-1975), with comparative reference to concurrent Cold War conflicts. The temporal scope encompasses the escalation phase (1960-1968), the Vietnamization period (1969-1973), and immediate post-war consolidation (1975-1979). This periodization enables analysis of how Vietnamese agency evolved across different strategic contexts and power configurations.

Data Sources and Collection

The study triangulates multiple source categories to balance official perspectives with subaltern voices:

Diplomatic archives: Declassified U.S. State Department cables, Pentagon Papers, National Security Council memoranda, and Vietnamese Communist Party internal documents provide insight into strategic decision-making at the state level.

Oral histories: Interviews with former combatants, civilians, and diaspora community members (Conducted 2010-2023) capture experiences marginalized in state narratives, including those of South Vietnamese soldiers, re-education camp survivors, and female combatants.

Cultural memory studies: Analysis of memorials, museums, literature, and commemorative practices in Vietnam, the United States, and diaspora communities reveals how the war's meaning has been contested and renegotiated across generations.

Secondary scholarship: Engagement with historiographical debates across Vietnamese, Chinese, Russian, and Western scholarship provides multilingual, multi-perspectival context.

Analytical Framework

The analytical framework integrates three theoretical lenses:

Agent-structure dialectic: Drawing on constructivist international relations theory, the study examines how Vietnamese actors exercised agency within structural constraints, focusing on the interplay between material capabilities and ideational factors such as nationalism, revolutionary ideology, and anti-colonial consciousness.

Postcolonial theory: The framework applies postcolonial concepts of hybridity, strategic essentialism, and subaltern resistance to analyze how Vietnamese elites and movements negotiated between competing modernization models while asserting distinct national trajectories.

Memory studies: Analysis of contested memories employs frameworks from collective memory scholarship, examining how state narratives, counter-memories, and silenced voices compete to define the war's historical significance and contemporary relevance.

Limitations and Scope

Several limitations warrant acknowledgment. First, archival access in Vietnam remains restricted, particularly regarding internal Communist Party debates and Sino-Vietnamese military coordination. Second, oral histories reflect selection bias toward English-speaking interviewees and those who survived the war. Third, the study's geographic focus on northern and southern Vietnam necessarily marginalizes central highlands ethnic minorities' experiences. Finally, the analysis emphasizes political and military dimensions, with less attention to economic and environmental dimensions of the conflict. These limitations underscore the need for continued multilingual, multiperspectival research.

Results

The findings are organized according to the tripartite analytical framework, examining U. S. containment dynamics, Sino-Vietnamese strategic interactions, and indigenous Vietnamese political processes. Each subsection demonstrates how external pressures and internal agency intersected to shape the war's trajectory.

U.S. Containment Policy

American involvement in Vietnam reflected both external strategic calculations and domestic political imperatives. The containment doctrine, formalized in NSC-68 and operationalized through SEATO, positioned Southeast Asia as crucial to preventing communist expansion. However, U.S. policymakers fundamentally misread Vietnam's political landscape, conflating nationalist aspirations with communist expansionism and underestimating the depth of anti-colonial sentiment.

Kennedy's counterinsurgency strategy (1961-1963) introduced Special Forces and strategic hamlet programs designed to separate guerrillas from population bases. These initiatives failed due to South Vietnamese government corruption and the programs' coercive implementation, which alienated rural communities rather than securing their loyalty. Johnson's escalation (1964-1968) marked a transition to conventional warfare, with Operation Rolling Thunder and ground deployments reaching 536,000 troops by 1968. The Tet Offensive demonstrated the limits of military superiority: despite tactical defeat, the NLF and North Vietnamese forces achieved strategic victory by undermining American public support and exposing the fragility of pacification claims.

Nixon's Vietnamization (1969-1973) attempted to transfer combat responsibilities to South Vietnamese forces while reducing U.S. casualties (Melanson, 2000). This strategy

preserved the Saigon regime temporarily but could not resolve its fundamental legitimacy crisis. Unlike North Vietnam's fusion of nationalism and communism, the Republic of Vietnam struggled to articulate a compelling national vision beyond anti-communism. Corruption, political instability, and heavy dependence on American support eroded popular trust, rendering the regime unsustainable once U.S. military and economic assistance declined after the Paris Accords.

Comparative analysis reveals a crucial asymmetry: while U.S. intervention provided vast material resources and military technology, it could not manufacture domestic legitimacy or nationalist credibility. In contrast, North Vietnamese leadership leveraged limited resources through superior mobilization strategies rooted in decades of anti-colonial resistance. This finding challenges realist assumptions that material capabilities determine outcomes, instead highlighting the constitutive role of legitimacy, ideology, and political organization.

Sino-Vietnamese Strategic Interactions

Chinese involvement in the Vietnam War extended beyond material support to encompass complex political, ideological, and strategic dimensions. Beijing provided critical military assistance including anti-aircraft batteries, engineering troops, and railway construction teams at peak involvement, over 320,000 Chinese military personnel operated in northern Vietnam (1965-1969). However, this support served multiple objectives beyond solidarity with socialist allies.

First, Chinese assistance functioned as an instrument in Sino-Soviet competition for leadership of the communist world. Beijing sought to demonstrate superior revolutionary commitment compared to Soviet "revisionism," positioning itself as the authentic standard-bearer of anti-imperialist struggle. This rivalry created leverage for Vietnamese leaders, who skillfully played Beijing and Moscow against each other to maximize autonomy while securing material support from both.

Second, China's strategic calculus included territorial and geopolitical considerations. Preventing U.S. bases along China's southern border represented a core security interest, making Vietnamese victory instrumentally valuable regardless of ideological affinity. This pragmatic dimension became explicit after 1972, when Sino-American rapprochement created tensions with Hanoi over Vietnamese alignment with the Soviet Union (Chen, 1995).

Third, ideological tensions complicated Sino-Vietnamese relations despite surface solidarity. Ho Chi Minh's leadership balanced Marxist-Leninist orthodoxy with pragmatic adaptation to Vietnamese conditions, sometimes diverging from Maoist models. During the Cultural Revolution (1966-1976), Chinese pressure for radical ideological conformity created friction, with Vietnamese leaders resisting attempts to subordinate national strategy to Beijing's revolutionary timeline. The 1979 Sino-Vietnamese War revealed the limits of socialist internationalism. Territorial disputes, treatment of ethnic Chinese minorities, and Vietnamese intervention in Cambodia transformed former allies into adversaries. This outcome demonstrates that Vietnamese agency extended beyond wartime resistance to include postwar assertions of sovereignty that violated Chinese expectations of deference and alignment.

Vietnamese Political Processes and Domestic Dynamics

Vietnamese agency manifested through multiple dimensions: elite strategic decision-making, mass mobilization, ideological adaptation, and post-war memory politics. Each dimension reveals how indigenous actors shaped outcomes rather than merely responding to external pressures.

Elite strategic autonomy: North Vietnamese leadership under Ho Chi Minh and later Le Duan demonstrated sophisticated navigation of great-power constraints. The decision to accept the 1954 Geneva partition reflected temporary accommodation of unfavorable power

balances while preserving long-term reunification objectives. Similarly, the choice to pursue protracted guerrilla warfare rather than conventional offensives (until conditions favored the latter) reflected indigenous strategic calculation rather than Chinese or Soviet direction. Hanoi's rejection of several ceasefire proposals throughout the 1960s underscored commitment to reunification on Vietnamese terms, even when external patrons advocated compromise.

Mass mobilization and revolutionary culture: The war's outcome hinged not on technology or firepower but on popular mobilization sustained over decades. The Communist Party developed organizational structures reaching village level, integrating military resistance with land reform, literacy campaigns, and nationalist education. This created a revolutionary culture that legitimized sacrifice and maintained morale despite enormous casualties. In contrast, South Vietnam's failure to match this mobilization capacity reflected its inability to root governance in authentic popular support rather than merely external patronage. Vietnamese communism represented neither pure Marxist-Leninist orthodoxy nor simple adoption of Chinese or Soviet models. Instead, Party intellectuals synthesized Confucian ethics, Buddhist compassion, and revolutionary modernization into a distinctly Vietnamese socialist ideology. Ho Chi Minh's emphasis on moral exemplarity and collective discipline drew explicitly on Vietnamese cultural traditions while serving revolutionary objectives. This ideological hybridity enabled the Party to claim both revolutionary legitimacy and cultural authenticity a combination South Vietnamese governments could not replicate. However, Vietnamese wartime experiences were far more heterogeneous than official narratives acknowledge. South Vietnamese perspectives including those who fought against reunification have been systematically marginalized in postwar historiography. Re-education camps detained hundreds of thousands of former Republic of Vietnam officials, officers, and intellectuals, many enduring years of political imprisonment. Female combatants, despite comprising significant portions of revolutionary forces, find their contributions minimized in male-dominated commemorations. Ethnic minorities in the central highlands experienced the war as external imposition rather than national liberation, complicating triumphalist narratives. Comparative analysis across the three dimensions reveals crucial asymmetries that explain war outcomes. U.S. intervention provided massive material advantages but proved unable to generate political legitimacy or nationalist credibility. South Vietnamese governments remained perpetually dependent on American support, never achieving the autonomous governance capacity that legitimacy requires. Chinese and Soviet assistance, while militarily significant, operated within Vietnamese strategic frameworks rather than dictating them. Hanoi leveraged great-power rivalry to maximize autonomy, accepting aid without surrendering sovereignty over fundamental decisions regarding war aims, strategy, and political objectives. The decisive factor proved to be indigenous political organization and ideological cohesion. North Vietnam's fusion of nationalism with communism, rooted in decades of anti-colonial struggle, created mobilization capacity that material resources alone could not match. This organizational superiority persisted despite inferior firepower, demonstrating that agency expressed through strategic autonomy, ideological innovation, and popular mobilization can overcome structural constraints when effectively deployed over sustained periods.

Discussions

This research contributes to a growing body of scholarship that reinterprets the Vietnam War as more than a passive episode within Cold War geopolitics. Far from being merely the object of superpower rivalry, Vietnam exercised sustained agency retaining sovereignty, shaping strategies, and ultimately claiming victory on its own terms.

The findings challenge reductionist East-West binaries by demonstrating the limits of external power. U.S. escalation anchored in military intervention and ideological containment

was extensive but ultimately undermined by a fundamental misreading of Vietnam's political landscape, social resilience, and nationalist traditions. American policymakers consistently underestimated how deeply anti-colonial consciousness permeated Vietnamese society, conflating nationalist aspirations with communist expansionism. This misreading led to strategic errors: supporting unpopular regimes, implementing coercive pacification programs, and pursuing military solutions to fundamentally political problems. Chinese and Soviet assistance, while vital, was filtered through the prism of their own ideological competition (Ang, 2002). Such support never displaced the decisive role of endogenous dynamics: national divisions, ideological radicalization, and grassroots resistance movements that defined the conflict's trajectory. Vietnamese leaders demonstrated sophisticated capacity to leverage great-power rivalry, accepting material support while preserving strategic autonomy. This finding contributes to small-state literature by illustrating how weaker actors can exploit great-power competition to expand their freedom of maneuver.

The Legitimacy Question

Foreign intervention proved incapable of generating domestic legitimacy. The American project to construct a viable South Vietnamese state collapsed under corruption, fragmentation, and declining popular trust. Despite massive investment over \$150 billion in military and economic aid the Republic of Vietnam never achieved the political cohesion or nationalist credibility necessary for sustainable governance. Its dependence on external patronage undermined claims to sovereignty, while corruption and repression alienated the population it ostensibly served.

Chinese aid, meanwhile, often served Beijing's rivalry with Moscow more than Hanoi's revolutionary goals, exposing the limitations of external patronage. Soviet support similarly reflected superpower competition rather than pure socialist solidarity. In contrast, Ho Chi Minh's leadership embodied strategic pragmatism: leveraging great-power support while safeguarding ideological autonomy and Vietnamese priorities. His synthesis of Marxism-Leninism with Vietnamese cultural traditions created an ideology that could claim both revolutionary legitimacy and cultural authenticity a feat neither superpower backing nor military technology could replicate (Hickey, 2001).

Contested Memories and Silenced Voices

The war's legacy persists in contested landscapes of memory. Official historiography in Vietnam highlights heroic sacrifice and nationalist triumph, while diasporic voices, survivors, and civil society emphasize trauma, loss, and moral ambiguity. Grappling with these dialectical memories is essential to understanding the war not only as a Cold War battleground but also as a crucible of Vietnamese identity. Here, questions of self-determination, historical memory, and national unity were violently contested yet indigenously defined.

Post-war experiences reveal significant gaps between state mythmaking and lived reality. Re-education camps detained former South Vietnamese officials and officers for years, with many subjected to harsh conditions and political indoctrination. Female combatants, despite comprising up to 40% of southern revolutionary forces in some regions, find their contributions minimized in male-dominated commemoration practices. Ethnic minorities experienced the war as external imposition rather than national liberation, complicating triumphalist narratives that erase heterogeneous experiences.

Diaspora communities, particularly in the United States, Australia, and France, maintain counter-memories that challenge Hanoi's official narrative. These communities commemorate South Vietnamese soldiers, mourn the fall of Saigon as loss rather than liberation, and preserve distinct interpretations of the war's meaning. Recognizing these contested memories does not diminish Vietnamese victory but enriches historical understanding by acknowledging the war's multiplicity of experiences and interpretations.

Theoretical Contributions

This study advances international relations theory by demonstrating that agency and structure exist in dialectical relationship rather than hierarchical determination. Vietnamese actors were neither purely autonomous agents nor wholly constrained by superpower systems. Instead, they navigated structural limits through strategic innovation, ideological adaptation, and exploitation of great-power rivalries. This finding challenges both structural realism's determinism and liberal institutionalism's emphasis on great-power governance, instead highlighting how subaltern actors actively shape international order.

The research also contributes to postcolonial international relations by illustrating how formerly colonized nations resist integration into Cold War binaries while pursuing distinct development trajectories. Vietnamese leaders rejected both American capitalism and strict adherence to Chinese or Soviet models, instead crafting hybrid political-economic systems responsive to local conditions. This strategic essentialism selectively invoking socialist solidarity while maintaining independence demonstrates sophisticated agency that conventional IR frameworks often overlook.

Conclusion and suggestions

Conclusion

The Vietnam War defies its characterization as a mere Cold War proxy, a label that obscures the centrality of Vietnamese agency. While U.S. containment policies, Sino-Soviet rivalries, and global power dynamics shaped the conflict's structural backdrop, its essence lay in the ambitions, contradictions, and resilience of the Vietnamese people. Foreign powers influenced tactics and diplomacy, but they could not command the ideological fervor or grassroots mobilization that sustained the war for decades. Vietnamese political elites, civil society actors, and ordinary citizens were not passive recipients of outside ideologies; they were active architects who negotiated, redefined, and ultimately owned the war's meaning.

This study challenges the structural determinism of Cold War scholarship, which too often reduces smaller nations to pawns of great-power politics. Realpolitik and balance-of-power logic, though relevant, cannot explain the Vietnamese resolve to endure a protracted and costly conflict. That resolve was rooted in indigenous traditions of anti-colonial struggle, a revolutionary culture of discipline, and a nationalist ethos that transcended the socialist-capitalist divide. From peasant uprisings in the Mekong Delta to state-building projects in Hanoi and Saigon, the war unfolded as a Vietnamese-led endeavor shaped primarily by local imperatives (Elliott, 2003).

Crucially, the diversity of Vietnamese wartime experiences undermines simplistic narratives that cast the North as totalitarian aggressors and the South as democratic victims. Both regions grappled with authoritarian governance, crises of legitimacy, and pragmatic adaptations of foreign ideologies. South Vietnam's liberal-capitalist experiment was undermined by U.S. overreach and domestic fragmentation, while North Vietnam's socialist project fused Marxist-Leninist orthodoxy with Confucian ethics and nationalist symbolism, tempered by cautious management of relations with Beijing and Moscow. These complexities reveal an ideological fluidity obscured by Cold War binaries: both states localized foreign models in pursuit of sovereignty and survival.

The war's memory remains contested. Official narratives emphasize revolutionary triumph and collective sacrifice, while diasporic voices, survivors, and marginalized groups foreground trauma, loss, and moral ambiguity. Postwar experiences from re-education camps to the erasure of female combatants demonstrate the gap between state mythmaking and lived

reality. Recognizing these tensions is essential for writing inclusive histories that acknowledge the war's human costs while respecting its multiplicity of voices.

The Vietnam War's legacy reverberates in contemporary geopolitics. Vietnam's current foreign policy balancing U.S. and Chinese power through ASEAN membership, pragmatic bilateralism, and strategic non-alignment echoes its Cold War practice of navigating great-power rivalries. This model of "small-state agency" offers lessons for contemporary middle powers such as Ukraine, Singapore, and Taiwan, which face comparable pressures in an era of renewed U.S.-China competition.

First, the Vietnamese experience demonstrates that material asymmetries do not predetermine outcomes. Superior organization, ideological cohesion, and popular mobilization can offset technological disadvantages when sustained over time. Second, leveraging great-power competition can expand small-state autonomy, though this strategy requires sophisticated diplomacy and willingness to accept material constraints. Third, domestic legitimacy proves more decisive than external patronage for regime survival. No amount of foreign support can substitute for indigenous political organization and popular support.

Future Research Directions

This study opens several avenues for future research. First, deeper investigation of intra-Vietnamese ideological debates would illuminate how revolutionary doctrine evolved in response to wartime exigencies. Archival research in Vietnamese and Chinese sources could reveal the extent of coordination versus tension in Sino-Vietnamese military cooperation. Second, comparative research on other Cold War conflicts including Korea, Afghanistan, and Angola could test whether the patterns of small-state agency identified here apply more broadly. Third, longitudinal studies of memory politics could examine how generational change affects contested narratives, particularly as direct war participants age and digital media enable new forms of commemoration and counter-memory.

Additionally, research should prioritize marginalized perspectives. Oral history projects focused on ethnic minorities, female combatants, and South Vietnamese veterans could recover experiences systematically excluded from dominant narratives. Transnational research tracing diaspora community networks could illuminate how displaced populations construct collective memory across borders. Such research would contribute to more inclusive historiography while deepening understanding of war's enduring social and cultural impacts.

Final Reflections

To conceptualize the Vietnam War as "Vietnam's war" is to invert conventional historiography and center the agency of those long marginalized in superpower-centric narratives. For the Vietnamese, it was a transformative journey: a struggle to transcend colonial legacies, define national identity, and assert self-determination amid geopolitical turbulence. It was fought not only with arms but also with ideas about democracy, religion, class, and sovereignty articulated through protests, publications, and rituals as much as through military campaigns. Amplifying these voices is essential for constructing a history that honors the multiplicity of experiences, acknowledges the war's enduring relevance for postcolonial statecraft, and challenges the persistent myth of small nations as passive actors in global conflicts.

Suggestions

Based on the findings of this study, the following recommendations are proposed for scholars, educators, policymakers, and memory institutions:

1. For historical scholarship: Scholars examining Cold War conflicts should prioritize indigenous sources and local agency rather than defaulting to superpower-centric frameworks. This requires multilingual archival research, engagement with non-Western historiographies, and integration of oral histories from marginalized communities. Methodologically,

researchers should adopt decentered analytical frameworks that treat smaller nations as co-architects of international order rather than passive recipients of great-power designs.

2. For public historians and museum curators: Commemorative institutions should incorporate contested memories and diaspora perspectives into exhibitions and programming. Rather than presenting monolithic national narratives, museums can create dialogic spaces where competing interpretations coexist and visitors engage critically with multiple perspectives. This approach promotes reconciliation by validating pluralistic memory while acknowledging historical complexity.

3. For educators: Curriculum development should emphasize multiperspectival approaches to conflict history. Rather than teaching the Vietnam War as simply "U.S. versus communism," educators can explore Vietnamese agency, Sino-Vietnamese relations, domestic political struggles in both North and South, and contested postwar memories. Primary sources including Vietnamese documents, oral histories, and cultural productions should supplement Western diplomatic archives to provide balanced perspectives.

4. For policymakers and diplomatic practitioners: Contemporary small and middle powers can draw strategic lessons from Vietnamese experience, particularly regarding navigating great-power competition while maintaining autonomy. This requires sophisticated diplomacy that leverages rivalries between larger powers, builds domestic legitimacy independent of external patronage, and maintains long-term commitment to sovereignty even under material constraints. Policymakers should recognize that external support cannot substitute for indigenous political organization and popular legitimacy.

5. For peace and reconciliation initiatives: Post-conflict societies benefit from acknowledging diverse wartime experiences rather than imposing monolithic narratives. Reconciliation processes should create platforms for diaspora communities, former adversaries, and marginalized groups to share perspectives without requiring consensus on historical interpretation. Such initiatives can validate competing memories while building shared commitment to peaceful coexistence.

6. For future research: Scholars should pursue several underexamined topics: intra-Vietnamese ideological debates, particularly how revolutionary doctrine evolved in response to wartime pressures; female combatants' experiences and their systematic erasure from official memory; ethnic minority perspectives on the war as external imposition; and transnational diaspora memory networks. Methodologically, future research should combine archival work with ethnographic approaches, oral history projects, and digital humanities methods for analyzing cultural memory. By adopting these approaches, scholars, educators, and practitioners can produce more inclusive histories, promote nuanced public understanding of complex conflicts, and extract strategic lessons relevant to contemporary international relations. The Vietnam War's legacy extends far beyond historical interest it offers enduring insights into small-state agency, the limits of military power, and the constitutive role of memory in shaping national identity and international order.

New knowledge and the effects on society and communities

This research contributes new knowledge by reframing the Vietnam War as a Vietnamese-centered process rather than a Cold War episode. By synthesizing archival evidence with cultural and memory-based analysis, it highlights how Vietnamese leaders and communities actively shaped the conflict's trajectory and meaning. Three primary contributions emerge:

First, the study demonstrates that small-state agency operates through multiple mechanisms beyond conventional diplomatic maneuvering. Vietnamese actors leveraged great-power rivalry, localized foreign ideologies, built domestic legitimacy through revolutionary mobilization, and maintained strategic autonomy despite material dependence. This multi-dimensional agency model advances international relations theory by moving beyond binary conceptions of power and resistance (Ninh, 2002).

Second, the research illuminates the decisive role of legitimacy over material capabilities. The Republic of Vietnam's collapse despite massive American support, contrasted with communist victory despite inferior firepower, underscores that sustainable governance requires indigenous political organization and popular support rather than merely external patronage.

Third, by integrating contested memories and marginalized voices, the study challenges monolithic state narratives. Recognition of diaspora perspectives, female combatants' contributions, ethnic minority experiences, and post-war silencing enriches historical understanding while promoting more inclusive public memory.

The societal implications are multifaceted. For memory and reconciliation, this perspective promotes inclusive public discourse by acknowledging diverse Vietnamese experiences, including those of diaspora communities who maintain distinct interpretations of the war. Such recognition does not undermine national unity but enriches it by validating pluralistic memory rather than imposing monolithic narratives. This approach supports reconciliation by creating space for dialogue between competing commemorative communities.

For education, the research provides frameworks for teaching complex conflicts without reducing them to binary oppositions. Students can understand how Vietnamese actors negotiated constraints while exercising agency, how ideological labels like "communist" or "capitalist" obscure local complexities, and how historical interpretation remains contested across communities. This nuanced pedagogy cultivates critical thinking about power, agency, and memory.

For policymakers and contemporary small states, the study offers strategic lessons on navigating great-power competition. Vietnam's ability to maintain autonomy while accepting great-power support, leverage Sino-Soviet rivalry, and ultimately survive superpower conflict demonstrates that material asymmetries do not predetermine outcomes. Contemporary middle powers facing renewed U.S.-China competition can draw insights from Vietnamese strategic flexibility, domestic legitimacy-building, and long-term commitment to sovereignty. By recovering the agency of Vietnam, the study affirms that smaller nations can leverage global rivalries to pursue sovereignty an enduring lesson in both history and international relations. This reframing challenges persistent narratives that position non-Western nations as passive objects of great-power competition, instead recognizing their capacity to shape regional and global orders.

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Community and Social Development Journal : CSDJ

Formerly known as Rajabhat Chiang Mai Research Journal

is a Journal to support academic work for Community and Social Development

Aim and scope to publish articles that are beneficial to society or locality in Social Sciences & Humanities, with 5 sub- subject. 1) General Social Sciences 2) Development 3) Education 4) Political Science and International Relations 5) General Business, Management and Accounting, which can be shown that it is able to solve problems or improve society, community and locality. Moreover, it clearly brings benefits, or changing in awareness and perception of problems and solutions of community and locality, with research elements that indicate the spatial change condition of community and society. It is the participatory research and accepted by society. It is the research that uses knowledge or proficiency, which transforming in the better way, or it can be anticipated. Evaluate changing results and propose guidelines for social development, community and local to be sustainable.

Publication Frequency: Issued 3 editions per year:

Issued 1 : January - April

Issued 2 : May - August

Issued 3 : September - December

Types of Articles :

Research Articles: Present a brief report on a specific research result or a major problem. Social Sciences, Business, Management and Accounting Each article must clearly present the research question, detailed methodology, study content, results, discussion, conclusion and suggestions, new knowledge and the effects on society and communities.

Language : English

Publication fees :

Articles submitted have a cost of assessing and screening articles in the amount of **110 USD or 3,500 THB**. Collect the fee 1 time after the article has been preliminarily reviewed by the journal's editorial team before sending it to the expert for reviewing the article. In case of cancellation or assessment is not passed from reviewer, the fee will not be refunded. According to the announcement of the Research and Development Institute Fund of Chiang Mai Rajabhat University. In terms of fee for publishing articles in Chiang Mai Rajabhat Research Journal, by transferring money to the account name Chiang Mai Rajabhat University (Research and Development Institute Fund) Bangkok Bank, Chiang Mai Rajabhat University branch, account number 510-7-08700-8.

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- The editorial board will review these reports to assess the nature and extent of any similarity

Journal History :

Community and Social Development Journal : History of journal for research to community. Aim and scope to publish english articles that are beneficial to society or localities in social sciences. Launched in 1999 with the support of Institute of Research and Development, Chiang Mai Rajabhat University, the inaugural volume focused on research articles, in subject area social sciences, business, management and accounting.

Change of journal name

Community and Social Development Journal : CSDJ (Formerly known as : Rajabhat Chiang Mai Research Journal)

Name of the journal (new): Community and Social Development Journal

ISSN 3027-7493 (Online)

ISSN 3027-7485 (Print)

From Vol 25 No 1 January - April 2024 onwards.

Name of the journal (formerly): Rajabhat Chiang Mai Research Journal

ISSN 2651-2068 (Online)

ISSN 1513-8410 (Print)

From Vol 1 No 1 1999 - Vol 24 No 3 2023

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Journal template / research articles

The editorial team has established regulations of manuscript submission for the authors to use as the guidelines of submitting manuscripts for publication. "Community and Social Development Journal : CSDJ Formerly known as Chiang Mai Rajabhat Research Journal". The editors can review the manuscript before publication for the quality of the journal, and can be used as references. By the way, journal is the support academic work for society by setting aim and scope. To publish articles that are beneficial to society or localities in Social Sciences & Humanities with 5 sub-subject. 1) General Social Sciences 2) Development 3) Education 4) Political Science and International Relations 5) General Business, Management and Accountings, which can be shown that it is able to solve problems or improve society, community and locality. Moreover, it clearly brings benefits, or changing in awareness and perception of problems and solutions of community.

Preparation for the original article, the details are as follows**Title of the Paper (Times New Roman, 16 pt, Bold)****First name Last name* (Times New Roman, 14 pt, Bold)***Full Affiliation (Times New Roman, 12 pt, Italic)***(E-mail: e-mail) (Times New Roman, 12 pt, Bold)***(Received: xxx, Revised: xxx, Accepted: xxx) (Times New Roman, 10 pt, Italic)***Abstract Text (Times New Roman, 12 pt, Tab 0.8 cm)**

It Is a summary of the main point, type of research, research objective, research methodology. Summarize the research results in a concise, clear and a new knowledge including things that will effect society and local community. Identify important statistics. Use concise language in complete sentences and prose, not divided into sections. The abstract in both Thai and English should not exceed 1/2 page of A4 size paper, and specify

Keywords: Keyword, Keyword, Keyword, Keyword, Keyword (Times New Roman, 12 pt; 5-7 keywords/phrases)**Introduction: Text (Times New Roman, 12 pt, Tab 0.8 cm)**

Write the background and importance of the problem. Theoretical concepts used, objectives and advantages.

Methodology: Text (Times New Roman, 12 pt, Tab 0.8 cm)

Describe the instruments and equipment used in the experiment, and describe the experimental study methods. Population and sample, research method, research instruments, data collection and data analysis.

Results: Text (Times New Roman, 12 pt, Tab 0.8 cm)

Writing a study proposal should be concise and show research results clearly.

Discussion: Text (Times New Roman, 12 pt, Tab 0.8 cm)

Writing discussions of study results is to clarify the research results whether it corrects according to the objectives, research hypothesis. It is consistent or inconsistent with previous research of others, how and for what reason. Compare or interpret to emphasize the importance of the research and summarize as easy as possible.

Conclusion and suggestions: Text (Times New Roman, 12 pt, Tab 0.8 cm)

Write a summary of the main points of the research whether it corrects to the objective or not, by focusing on the problems or argument in the main points including useful suggestions.

New knowledge and the effects on society and communities: Text (Times New Roman, 12 pt, Tab 0.8 cm)

Write a summary of the new knowledge that happened, and the effects on the society, local and communities.

Acknowledgement: Text (Times New Roman, 12 pt, Tab 0.8 cm)

May or may not be there. It was an expressing gratitude to those who contributed to the research, but not the participants in the research.

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There should be at least 15 items. (To cite an article from a journal, include a link to that article at the end.)

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Format for writing bibliography / reference lists

1. Writing the references, sort all references that use for referencing in the first alphabetical order of the reference list by dictionary order.
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Details of writing a bibliography / references**1. Journal** (References journal that up-to-date/most current)**(General Format)**

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Elmastas, M., Isildak, O., Turkekul, I., & Temur, N. (2007). Determination of antioxidant activity and antioxidant compounds in wild edible mushroom. *Food Composition and analysis*, 20(1), 337-345. <https://www.abc.ac.th/article12345>

2. Book

Surname. (Year of publication). Title of book. (Edition). Place: Publisher

Rangkhakunnuwat, P. (2013). *Time Series Analysis for Economics and Business*. (4thed.). Bangkok: Chulalongkorn University Printing House.

Courtney, T. K. (1965). *Physical Fitness and Dynamic Health*. New York: McGraw-Hill Inc.

3. Thesis (If the subject has an article in journal use references from the journal)

Author. (Year). *Translated Title of dissertation*. (Doctoral dissertation or Master's thesis, University).

Sunrethpol, N. (2004). *A Development of Educational Indicators for Lifelong Learning*. (Ph.D., Srinakharinwirot University).

Magyar, C. E. (2014). *The discourse of tourism and national heritage: A contrastive study from a cultural perspective*. (Doctorial's thesis, University of Madrid).

4. Electronic media (Refer to only up-to-date information/ Up-to-date such as

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Surname. (Year of publication). Title. Retrieved from the title of website

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Submit the original printed according to the journal format specification <https://www.tci-thaijo.org/index.php/cmruresearch/index>

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Publication Ethics in the Community and Social Development Journal : CSDJ (*Formerly khows as Chiang Mai Rajabhat Research Journal*)

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A retraction of a published article may be initiated by the editors of the or by the authors of the article.

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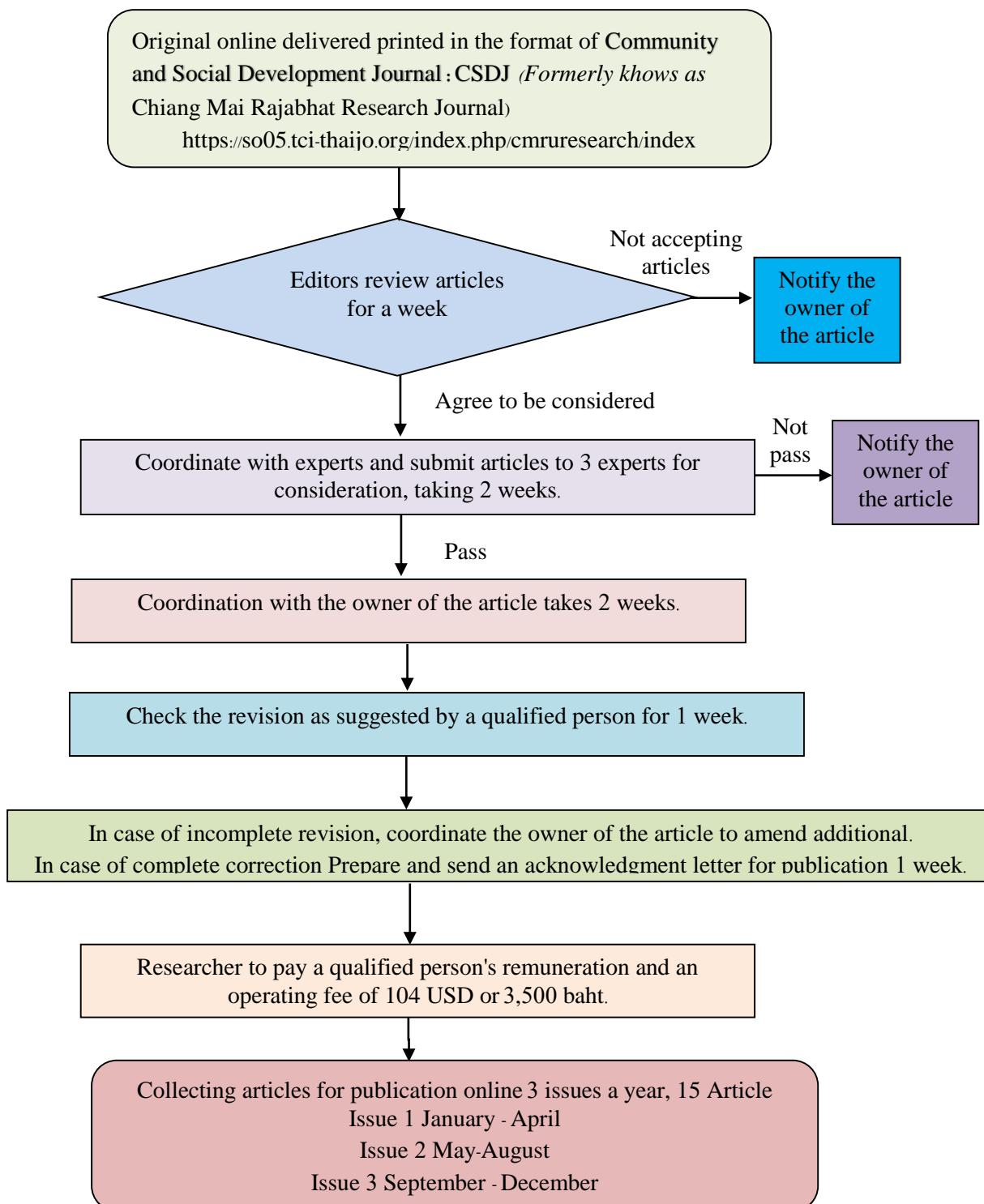
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3. A journal editor is a group of people who act as a working group of editors. Responsible for considering and reviewing articles. Consider the consistency of the article content with the aims and scopes of the journal. Including review and assessment quality of the articles quality before publication.
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 - 4.2 Review and reject the publication of articles previously published elsewhere.
 - 4.3 Required using the principles of considering articles based on academic reasons, and there must not be bias to the authors of the articles and the articles that considered in any case.
 - 4.4 There must not have interests with the authors or reviewers. Either for business advantages, or for their own academic articles or other advantages.
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 - 4.8 The article contents and evaluation results of the article reviewers must not be modified or changed.
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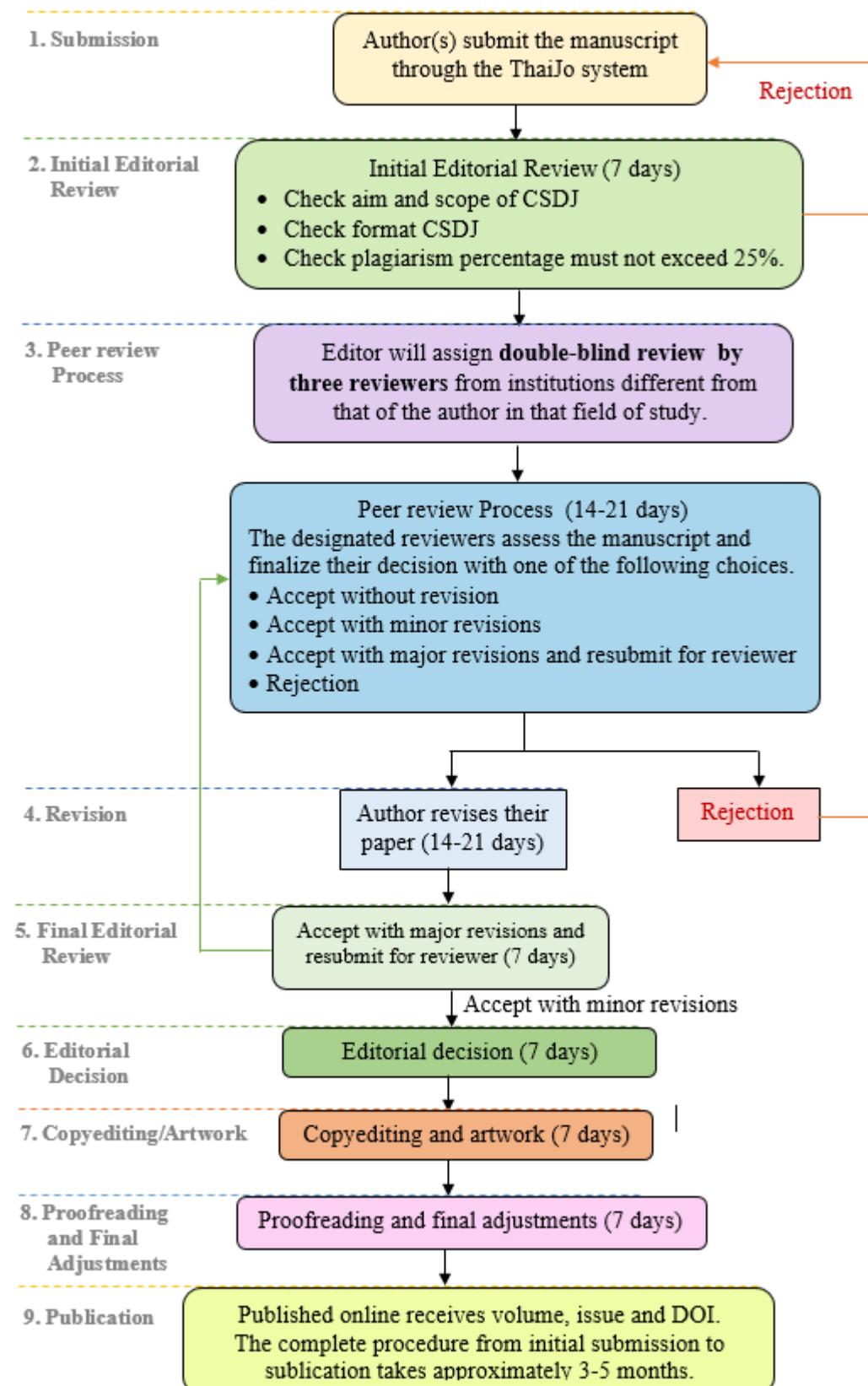
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Peer Review Process



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