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Strategies for Managing, Conserving, and Restoring Tourism Resources in Community-Based Tourism in Upper Northern Thailand during the Pandemic กลยุทธ์การบริหารจัดการการอนุรักษ์และฟื้นฟูทรัพยากรการท่องเที่ยวของชุมชนท่องเที่ยว ในพื้นที่ภาคเหนือตอนบนของประเทศไทย ในช่วงสถานการณ์ที่มีโรคระบาด

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Abstract

This research employed a mixed-methods approach with the following objectives: (1) to study the management, conservation, and restoration of tourism resources in tourism communities in the upper northern region during epidemic situations; (2) to examine the factors related to the management, conservation, and restoration of tourism resources in tourism communities; and (3) to propose strategies for the management, conservation, and restoration of tourism resources in tourism communities in the upper northern region of Thailand during epidemic situations. The sample consisted of 43 communities consisting of Chiang Mai, Chiang Rai, Lamphun, Lampang, Phrae, Nan and Mae Hong Son provinces. The instruments used included questionnaires and focus group discussions. Data analysis involved descriptive statistics and multiple regression analysis. The research findings revealed: 1) general information about the communities, tourism support received from agencies, the overall level of tourism resource utilization in the communities, and the management of tourism resources in tourism communities; 2) the analysis of related factors showed that the education level of community leaders, the tourism support received, and the level of tourism resource utilization in the communities collectively explained 36.90% of the variance in the management, conservation, and restoration of tourism resources in tourism communities in the upper northern region during epidemic situations ($R^2=0.369$, $F=2.919$, $P<0.05$); and 3) six strategies for the management, conservation, and restoration of tourism resources in tourism communities in the upper northern region during epidemic situations, derived from the PDCA cycle

analysis. Particular emphasis should be placed on Strategy 1: Management, Conservation, and Restoration of Tourism Resources in Tourism Communities and Strategy 5: Promotion of Marketing and Tour Services in Tourism Communities.

Keywords: Strategic management, Tourism resources, Community-based tourism, Pandemic, Thailand

บทคัดย่อ

การวิจัยครั้งนี้เป็นการวิจัยแบบผสมผสาน มีวัตถุประสงค์เพื่อ (1) การศึกษาการบริหารจัดการ การอนุรักษ์และฟื้นฟูทรัพยากรการท่องเที่ยวของชุมชนท่องเที่ยวในพื้นที่ภาคเหนือตอนบน ในช่วงสถานการณ์ที่มีโรคระบาด (2) ศึกษาปัจจัยที่สัมพันธ์กับการบริหารจัดการ การอนุรักษ์ และฟื้นฟูทรัพยากรการท่องเที่ยวของชุมชนท่องเที่ยว และ (3) เสนอกลยุทธ์ในการบริหารจัดการ การอนุรักษ์และฟื้นฟูทรัพยากรการท่องเที่ยวของชุมชนท่องเที่ยวในพื้นที่ภาคเหนือตอนบนของประเทศไทย ในช่วงสถานการณ์ที่มีโรคระบาด กลุ่มตัวอย่างประกอบด้วย 43 ชุมชน จากจังหวัดเชียงใหม่ เชียงราย ลำพูน ลำปาง น่าน และแม่ฮ่องสอน เครื่องมือที่ใช้ได้แก่ แบบสอบถามและการประชุมกลุ่มย่อย การวิเคราะห์ข้อมูลเชิงพรรณนาและวิเคราะห์สถิติการทดสอบพหุคุณ ผลการวิจัยพบว่า 1) ผลการศึกษาปรากฏข้อมูลลักษณะทั่วไปของชุมชน การได้รับสนับสนุนทางการท่องเที่ยวจากหน่วยงาน ระดับการใช้ประโยชน์จากทรัพยากรการท่องเที่ยวในชุมชนในภาพรวม และการบริหารจัดการทรัพยากรการท่องเที่ยวของชุมชนท่องเที่ยว 2) ผลการวิเคราะห์ปัจจัยที่มีความสัมพันธ์พบว่า ระดับการศึกษาของผู้นำ การได้รับการสนับสนุนทางการท่องเที่ยวและระดับการใช้ประโยชน์จากทรัพยากรการท่องเที่ยวในชุมชนเป็นปัจจัยที่สามารถร่วมกันอธิบายความผันแปรของการบริหารจัดการ การอนุรักษ์และฟื้นฟูทรัพยากรการท่องเที่ยวของชุมชนท่องเที่ยวในพื้นที่ภาคเหนือตอนบนในช่วงสถานการณ์ที่มีโรคระบาด ได้ร้อยละ $36.90 (R^2=0.369, F=2.919, P<0.05)$ และ 3) มีกลยุทธ์บริหารจัดการการอนุรักษ์และฟื้นฟูทรัพยากรการท่องเที่ยวของชุมชนท่องเที่ยวในพื้นที่ภาคเหนือตอนบนในช่วงสถานการณ์ที่มีโรคระบาดจากการวิเคราะห์ด้วย PDCA cycle ทั้งหมด 6 กลยุทธ์ ซึ่งควรให้ความสำคัญอย่างยิ่ง มีกลยุทธ์ที่ 1 กลยุทธ์ด้านการจัดการ อนุรักษ์ ฟื้นฟูทรัพยากรการท่องเที่ยวในชุมชนท่องเที่ยว และกลยุทธ์ที่ 5 กลยุทธ์ด้านการส่งเสริมการตลาดและบริการ นำไปใช้ในชุมชนท่องเที่ยว

คำสำคัญ: กลยุทธ์การบริหารจัดการ, ทรัพยากรการท่องเที่ยว, การท่องเที่ยวโดยชุมชน, สถานการณ์โรคระบาด, ประเทศไทย

Introduction

The pandemic, which emerged in late 2019, had a profound impact on Thailand's tourism industry. International tourist arrivals decreased by 83.2% from 39.9 million in 2019 to 6.7 million in 2020. As a result, tourism revenue from foreign visitors contracted by 82.6% to 332,013 million baht in 2020 compared to 1,911,808 million baht in the previous year (Ministry of Tourism and Sports, Tourism statistics, 2020). The continuous decline in the number of tourists and revenue has significantly impacted tourism operators, including recreational businesses, food and beverage businesses, souvenir shops, accommodations, and transportation. Businesses have had to adapt to survive amidst the pandemic. Some establishments, unable to bear the burden and the various impacts, have been forced to shut down. Not only tourism businesses have been affected; tourism communities have also suffered. With many tourist destinations seeing a significant drop in visitors, there has been a corresponding decline in

tourism-related income. A tourism community is an area where tourism is managed through community participation. This involves utilizing natural resources, the environment, culture, and local wisdom as a foundation or capital for tourism management, with the goal of achieving sustainability of resources (Chittangwattana, 2005). Furthermore, it aims to benefit future generations of the community by fostering a sense of ownership, conservation, and appropriate use of natural resources and the environment. Tourism communities are particularly widespread in the upper northern region of Thailand, where abundant natural resources such as soil, water, forests, and minerals, coupled with cool year-round temperatures, have made the region a popular tourist destination for both domestic and international visitors. Notable examples include Doi Inthanon, Jae sorn Hot Springs, and Doi Phu Kha. In addition, culture remains a crucial component of community-based tourism. Many communities have leveraged their unique cultural heritage and local wisdom to develop tourism products (Community-Based Tourism Institute, 2011). For example, villages such as Ban Chabu Si in Chiang Rai, Ban Mueang Yuan in Phayao, Ban Thin in Phrae, and Mae Lana community in Mae Hong Son have successfully integrated their cultural assets into their tourism offerings.

Due to the pandemic situation, many tourism communities experienced a significant decline in visitor numbers and consequently, a loss of tourism revenue. Government policies, particularly the Emergency decree on public administration in emergency situations, implemented to control the spread of pandemic, played a significant role in this decline. The decree, which came into effect on March 26, 2020, imposed restrictions. As a result, tourists were unable to travel to tourist destinations, including those in northern Thailand. Additionally, many tourism communities voluntarily closed their doors to tourists to protect their residents. The pandemic, along with lockdown measures and the closure of national parks, severely impacted businesses operating within national parks. With no tourists, these businesses experienced a complete loss of income, except for those that were able to adapt by engaging in supplementary activities (Thailand Development Research Institute, 2023). The absence of tourism in recent times has provided tourism communities with an opportunity to reflect on the value and appropriateness of their tourism promotion efforts. The concept of tourism as a tool for community development remains relevant, but its application in the context of the pandemic has been challenged. Additionally, the development of natural attractions for tourism in many communities has led to environmental damage or disruptions to local ecosystems.

The internal and external changes affecting community-based tourism management due to the pandemic have resulted in a significant decline in tourist arrivals. Conversely, the abundant natural resources in upper northern Thailand, while currently undisturbed by tourism and its associated economic activities, still require careful management, conservation, and restoration. These efforts are crucial for attracting tourists back to the region and can serve as a cornerstone for sustainable tourism development strategies. Tourism communities in upper northern Thailand have utilized natural resources as a foundation for their tourism industry. However, the development of natural tourist attractions in

these communities has often resulted in damage or disruption to local ecosystems (Department of Tourism, 2022). Tourism management in community-based tourism has had to adapt in response to the pandemic, transitioning to a new normal that prioritizes community participation and the conservation of natural resources and the environment in enhancing the quality of tourist attractions. Community-based tourism management must emphasize participation and the conservation of natural resources and the environment by utilizing the PDCA (Plan-Do-Check-Act) cycle to enhance the quality of tourist attractions (Moen & Norman, 2009). If communities can apply participatory processes and build synergy with network partners, especially local administrative organizations, in their development efforts, it will significantly enhance their capacity to manage tourism in a sustainable manner.

This research aims to:

Based on the aforementioned context, the research questions that arise are: How were the natural resources, which serve as the foundation for tourism, managed, conserved, and restored in community-based tourism destinations in upper northern Thailand during the pandemic? What factors are associated with the management, conservation, and restoration of natural resources in tourism communities in upper northern Thailand during the pandemic? What strategies should be employed for the management, conservation, and restoration of natural resources in tourism communities in upper northern Thailand in the post-pandemic era? Therefore, this research aims to: (1) to study the management, conservation, and restoration of tourism resources in tourism communities in the upper northern region during epidemic situations; (2) to examine the factors related to the management, conservation, and restoration of tourism resources in tourism communities; and (3) to propose strategies for the management, conservation, and restoration of tourism resources in tourism communities in the upper northern region of Thailand during epidemic situations.

Methods

The study population consists of tourism communities in the upper northern region of Thailand using data from the CBT Gateway database, a project that surveyed communities that still have Community-Based Tourism in the upper northern Thailand, was able to lists a total of 183 communities (Onwan et al., 2020). Given the constraints imposed by the pandemic, a non-probability sampling approach, specifically purposive sampling, was adopted for this research. This method was selected to ensure that the sample included communities that were most relevant to the study's objectives, such as those heavily reliant on tourism or those with unique cultural or natural resources. The specific selection criteria for the sample were as follows: The study area had a pre-existing tourism industry, study area was significantly affected by the pandemic outbreak, tourism communities in the study relied on natural resources as a primary draw for tourists, and sample consisted of 43 tourism communities that have experienced a resurgence in tourist activity post-pandemic consisting of Chiang Mai (17 communities), Chiang Rai (7 communities), Lamphun

(1 communities), Lampang (2 communities), Phrae (2 communities), Nan (3 communities) and Mae Hong Son (11 communities) provinces.

Tools used for collecting quantitative data through questionnaires regarding factors related to the management, conservation, and restoration of tourism resources in community-based tourism in upper northern Thailand during the pandemic were divided into three sections: Section 1 comprised questionnaires concerning the respondents' status, characterized by a checklist format; Section 2 comprised questionnaires gathering data about tourism communities, characterized by open-ended questions and a 5-level rating scale format; and Section 3 comprised questionnaires pertaining to factors related to the management, conservation, and restoration of tourism resources in tourism communities in the upper northern region during the pandemic, including 1) Planning (Plan), 2) Implementation (Do), 3) Checking (Check), and 4) Improvement (Act), characterized by a 5-level rating scale format. The research tools was constructed and developed by studying principles, concepts, theories, and relevant research to establish the research framework and create the research tool. The content validity and accuracy were examined using the Index of Item-Objective Congruence (IOC). Following revisions to the questionnaire based on expert recommendations and after obtaining ethical approval for human research, the questionnaire was then administered to the population used in this study.

Additionally, focus group discussions were held with people who know a lot about tourism. These included leaders and representatives from community-based tourism groups in each province, people from government and private tourism organizations, and experts from universities. The goal of these discussions was to come up with strategies to better manage, protect, and restore the tourism resources in these communities. The findings from these methods can be used to inform decision-making for the sustainable development of tourism in the upper northern region.

The researchers collected data from leaders or individuals knowledgeable about the specific tourism communities using purposive sampling, with one set of questionnaires administered per community. The researchers will clearly explain the research objectives and the methodology for completing each section of the questionnaire to ensure the completeness of the responses obtained from the interviews.

The data analysis employed inferential statistics, specifically multiple regression analysis, to explain numerical data. For the qualitative data analysis, information gathered from focus group discussions will be analyzed to derive strategies for promoting the management, conservation, and restoration of tourism resources in tourism communities in the upper northern region during the epidemic. This will be achieved by subjecting all the collected data to a descriptive content analysis.

Results

[1] Results of the study on the management, conservation and restoration of tourism resources of tourism communities in the upper northern region during the epidemic

Community Leader Profile: The demographic analysis of community tourism leaders revealed a gender distribution where male leaders constituted a majority (53.48%) compared to female leaders (46.52%). In terms of educational attainment, the largest segment of leaders (27.90%) had completed junior high school, followed by senior high school graduates (23.25%) and those with vocational/technical college or associate's degrees (20.93%). The primary leadership role identified was the head of a tourism group (55.83%), with village heads representing a significant portion (23.25%), and tourism group committee members comprising 11.62%.

Community Profile and Tourism Attractions: The study indicated that the predominant community area size ranged between 1,501 and 3,000 square meters (46.53%), with subsequent proportions falling within the 3,001 – 4,500 square meter range (27.90%) and the 90 – 1,500 square meter range (13.95%). Ethnically, the majority of the studied communities were identified as indigenous Lanna (32.59%), followed by Karen (16.27%), and Tai Yuan (13.95%). The primary tourism attractions were categorized as natural sites (53.50%), including features such as hiking trails, nature trails, waterfalls, caves, hot springs, sea of fog, and national parks.

Tourism Support and Networking: The primary sources of tourism support were identified as the Provincial Tourism and Sports Office (27.38%), the Subdistrict Administrative Organization (24.03%), and the Community-Based Tourism Institute (13.95%). The support provided was primarily in the form of budget allocation (41.88%), knowledge development (34.88%), and skills development (11.62%). The dominant tourism network affiliation was with the Provincial Community-Based Tourism Network (69.78%), followed by the Thai Homestay Network (23.25%), and the Northern Community-Based Tourism Association (6.97%). Assessments of locations perceived as high-risk for pandemic transmission identified fresh markets (23.25%), temples (18.60%), and shops and restaurants (13.95%) as the most concerning.

Tourism Resource Utilization: The overall level of tourism resource utilization within the studied communities was determined to be moderate, with a composite mean of 3.03. Disaggregated analysis revealed the highest utilization levels for forest areas (mean 4.82) and mountains/hills (mean 4.60). Moderate utilization was observed for resources such as water sources (mean 3.50), waterfalls (mean 3.49), rivers, streams, reservoirs, ponds, and swamps (mean 3.48), botanical gardens (mean 3.45), national parks (mean 3.35), and wildlife sanctuaries (mean 3.33). Conversely, resources exhibiting no utilization included caves, landforms, and forest parks (mean 1.48), as well as hot springs and hot wells (mean 1.45).

The study on the management, conservation, and restoration of tourism resources in community tourism in the upper northern region during the pandemic revealed that the overall level of operational practice in tourism resource management was high, with a total mean of 4.37. When

examining individual management phases, the planning (P) aspect demonstrated a high level of operational practice, with a mean of 4.48. The implementation phase (D) exhibited the highest level of operational practice, with a mean of 4.57. The monitoring and evaluation phase (C) also showed a high level of operational practice, with a mean of 4.04.

Table 1: Results of the analysis of the operational level of tourism resource management of tourism community are separated into mean, standard deviation and interpretation

Tourism Resource Management of	Operational level		
	Tourism Community	Mean	S.D.
Plan (P)	4.48	0.65	High
Do) D(4.57	0.68	Very High
Check) C)	4.04	0.66	High
Act) A)	4.39	0.65	High
Total	4.37	0.66	High

Finally, the improvement and action phase (A) indicated a high level of operational practice, with a mean of 4.39. The research revealed that community tourism entities engaged in both planning (P) and implementation (D) during the pandemic through a process of trial operation coupled with adaptive planning to align with the evolving situation. This involved consultative meetings to define the scope of responsibilities for personnel involved in the management, conservation, and restoration of community tourism resources during the pandemic. Furthermore, community personnel utilized allocated budgets for the management, conservation, and restoration of these resources as outlined in work plans, and conducted activities according to annual plans established for resource conservation and restoration. However, the uncertainty of the pandemic necessitated continuous adjustments in operations, including personnel, operational locations, and activities, alongside the monitoring of community leadership and governmental policies. Consequently, community tourism in the upper northern region during the pandemic had to actively employ monitoring and evaluation (C) processes and implement improvement/action (A) strategies in the management, conservation, and restoration of their tourism resources.

An analysis of significant factors associated with the management, conservation, and restoration of tourism resources in northern Thailand's tourism communities during the pandemic was conducted. The research hypothesized that the following factors: leaders' education level, community ethnicity, tourism density, tourism support, network connections with tourism agencies, presence of high-risk areas for disease transmission, and the level of utilization of community tourism resources, were correlated with the management, conservation, and restoration of tourism resources in northern Thailand's tourism communities during the pandemic. The researcher analyzed the data in two steps:

Step 1: The first step involved a correlation analysis using Pearson product-moment correlation to examine the relationships among the independent variables. This analysis was conducted to determine if the

independent variables were independent of each other. If the independent variables were highly correlated or not independent, it could lead to multicollinearity. Additionally, the analysis checked for autocorrelation or serial correlation, ensuring that the error terms were independent of each other, a fundamental assumption in regression analysis.

Step 2: The relationship between the independent variables and the dependent variable was analyzed using multiple regression analysis with the enter method. The code is as follows: Edu = Educational level of leaders, Eth = Ethnic group of the community, Cap = Tourism density, Sup = Tourism support, Net = Network with tourism agencies, Risk = Presence of high-risk areas for disease transmission, Util = Level of utilization of community tourism resources, Manage = Management, conservation, and restoration of tourism resources in community-based tourism.

Table 2: Pairwise Correlation among independent variables

	Edu	Eth	Cap	Sup	Net	Risk	Util
Edu	1						
Eth	.377*	1					
Cap	-.298	.054	1				
Sup	-.456**	-.262	.369*	1			
Net	.182	.223	.150	-.102	1		
Risk	-.111	.014	.552**	.192	.266	1	
Util	.090	.070	-.036	.069	.328*	.088	1

Note: *Sig < 0.05, **Sig < 0.01

The pairwise correlation analysis, as shown in Table 1, revealed significant correlations ($P < 0.01$) between some pairs of independent variables. These correlations were both positive and negative. Nevertheless, no multicollinearity problem was detected, as no pair of predictors exhibited a correlation coefficient greater than .80, which would violate a fundamental assumption of multiple regression analysis (Prasitrat sin, 2013). Given that the magnitudes of the significant correlations were relatively modest, all seven independent variables were entered into the multiple regression model. The results of the analysis revealed that educational level of leaders (Edu), tourism support (Sup), and level of utilization of community tourism resources (Util) were significantly associated with the management, conservation, and restoration of tourism resources in community-based tourism in upper northern Thailand during the pandemic. Together, these variables accounted for 36.90% of the variance in the dependent variable ($R^2 = 0.369$, $F = 2.919$, $p < 0.05$). Specifically, the educational level of leaders had a significant negative correlation with the management, conservation, and restoration of tourism resources ($\beta = -.416$, $p < 0.05$), indicating that a higher educational level of leaders was associated with lower levels of tourism resource management. In contrast, tourism support ($\beta = 0.373$, $p < 0.05$) and the level of utilization of community tourism resources ($\beta = 0.532$, $p < 0.01$) were positively correlated with the management, conservation, and restoration of tourism resources, suggesting that increased tourism

support and higher levels of resource utilization were associated with better management, conservation, and restoration practices.

[2] Findings of a research study investigating the factors influencing the management, conservation, and restoration of tourism resources in community-based tourism settings in the upper northern region of Thailand during the pandemic

The findings suggest that while a higher educational level of community leaders was associated with less effective tourism resource management, increased tourism support and a higher level of resource utilization were positively correlated with better management practices. These results highlight the importance of providing adequate resources and training to community leaders to enhance their capacity to manage tourism sustainably. Otherwise, the variables of ethnic group of the community (Eth), tourism density (Cap), network with tourism agencies (Net), and presence of high-risk areas for disease transmission (Risk) were found to be insignificant in explaining the variance in the management, conservation, and restoration of tourism resources in community-based tourism in upper northern Thailand during the pandemic.

Table 3: Results of the Analysis of Factors Related to the Management, Conservation, and Restoration of Tourism Resources in Community-Based Tourism in Upper Northern Thailand during the Pandemic.

Factors	managing, conserving, and restoring tourism resources in community-based tourism			
	b	β	t	Sig.
Constant	3.521		5.960	.000
Leader's education level (Edu)	-.211	-.416*	-2.532	.016
Ethnic group of the community (Eth)	.176	.230	1.521	.137
Carrying capacity in tourism (Cap)	-3.385E-6	-.014	-.080	.937
Receiving tourism support (Sup)	.352	.373*	.753	.034
Network with tourism agencies (Net)	-.169	-.131	-.854	.399
Having a place at risk of spreading disease (Risk)	-.009	-.013	-.078	.938
Level of utilization of tourism resources in the community (Util)	.563	.532**	3.667	.001

R = 0.607, R² = 0.369, F = 2.919, Sig = 0.016

Note: *Sig < 0.05, **Sig < 0.01

In summary, the multiple regression analysis shows that the level of utilization of tourism resources in the community is related to the management of conservation and restoration of tourism resources of the tourist communities in the upper northern during the pandemic the most (β = 0.532, P<0.01), followed by the educational level of leaders (β = -0.416, P<0.05) and receiving tourism support (β = 0.373, P<0.05) respectively. All factors together explain the variation in management of conservation and restoration of tourism resources by tourist communities in the upper northern during the outbreak of pandemic, the score was 36.90 percent (R²=0.369, F=2.919, P<0.05). An explanatory equation can be written in the form of standard scores and raw scores as follows: The results of the multiple regression

analysis are presented in the form of standard scores as follows: $\text{Manage} = -0.416 \text{Edu} + 0.230 \text{Eth} - 0.014 \text{Cap} + 0.373 \text{Sup} - 0.131 \text{Net} - 0.013 \text{Risk} + 0.532 \text{Util}$ and the results of the multiple regression analysis are presented in the form of raw scores as follows: $\text{Manage} = 3.521 - 0.211 \text{Edu} + 0.176 \text{Eth} - 3.385 \text{E} - 6 \text{Cap} + 0.352 \text{Sup} - 0.169 \text{Net} - 0.009 \text{Risk} + 0.563 \text{Util}$.

[3] Strategies for managing, conserving, and restoring tourism resources in community-based tourism in Upper Northern Thailand during the pandemic

The research team has used the research results according to the objectives to find that the level of education of leaders, receipt of tourism support, and level of utilization of tourism resources in the community are explain the variation in management of conservation and restoration of tourism resources by tourist communities in the upper northern region during the pandemic together with key informants and held a focus group discussion meeting to obtain managing, conserving, and restoring tourism resources in community-based tourism in Upper Northern Thailand during the pandemic.

Background of Strategy Natural resources in the upper northern region are essential to the way of life of people in the community and promote added economic value from tourism that is used as a tool for community development in terms of generating income and additional careers in the community. For the process of operating community-based tourism, it creates a group of local tourism developers who have knowledge about conservation and restoration of community tourism resources and have skills in the management of natural resources and culture. Including creating value under tourism activities that emphasize tourists and people in the community taking responsibility for conserving natural resources together. However, there are factors that are directly affected by the pandemic situation. Starting at the end of the year 2019 was completely disrupted in terms of tourism promotion as a result of Thailand declaring a state of emergency (Emergency Decree). Due to regulations and policies in the country that do not encourage travel and tourism, the economy has slowed down and the tourism revenue curve has plummeted from a negative curve. An important event on July 1, 2021, Thailand began opening the economic recovery model with the "Phuket Sandbox" for foreign tourists who received the vaccine. Complete according to the regulations set for travel without having to quarantine and the promotion of vaccines in the country has caused the government to relax some measures. As the situation has eased for some time, tourist attractions have returned to being the focus of attention for Thai tourists who want to travel within the country. Nevertheless, people in the community still need to manage such resources to be available to tourists, which still has care to prevent the tourist attractions from deteriorating or build confidence in safety prevention of disease within tourist attractions and managing conflicts that occur in some communities where there is still fear and not welcoming tourists or foreigners into the community as this increases the risk of the spread of the disease.

Managing, conserving, and restoring tourism resources in community-based tourism in Upper Northern Thailand during the pandemic, it consists of 6 strategies. Including 1) strategies for managing, conserving, and restoring tourism resources in tourist communities 2) Strategies for managing tourism

infrastructure and services in tourism communities 3) Strategies for promoting tourism leadership in tourism communities 4) Strategies for public participation in tourism communities 5) Strategies for promoting marketing and tour services in tourism communities and 6) Strategies for preventing epidemics in tourism communities. Each strategy was presented using the Plan-Do-Check-Act (PDCA) cycle as an analytical framework to guide the discussion and demonstrate a structured approach to implementation.

Table 4: Strategy 1 A detailed roadmap for managing, conserving, and restoring tourism resources in Community-based tourism

PDCA cycles	Strategy	Description
Planning (P)	Committee Formation	Establish a community committee dedicated to conservation and restoration of tourism resources.
	Systematic Planning	Develop a comprehensive plan for managing, conserving, and restoring resources.
	Goal Setting	Define clear objectives for conservation efforts, focusing on preserving the environment and cultural heritage.
	Budget Allocation	Allocate funds for conservation activities, with community members contributing.
	Expert Consultation	Seek guidance from tourism experts and government agencies.
Doing (D)	Implementation	Execute the conservation plan as outlined.
Checking (C)	Monitoring and Evaluation	Regularly monitor the committee's activities and progress.
	Budget Oversight	Ensure that funds are used as planned.
Acting (A)	Improvement	Review past performance, identify areas for improvement, and adjust the plan accordingly.

Table 5: Strategy 2 A detailed roadmap for managing tourism infrastructure and services in tourism communities

PDCA cycles	Strategy	Description
Planning (P)	Collaborative Development	Plan and develop tourist attractions in collaboration with the community, focusing on creating accessible facilities and infrastructure
	Committee Formation	Establish a community committee dedicated to managing infrastructure and tourism services.
	Systematic Planning	Develop a detailed and systematic plan for managing infrastructure and tourism services.
	Role Definition	Clearly define the roles and responsibilities of community members in maintaining infrastructure and tourism services.
	Budget Allocation	Allocate a budget for infrastructure development and tourism service management.
Doing (D)	Plan Implementation	Implement the approved plan for managing infrastructure and tourism services.
	Environmental Consideration	Ensure that infrastructure development is environmentally friendly and minimizes negative impacts on the tourist area.
Checking (C)	Progress Monitoring	Regularly monitor the progress of infrastructure management and tourism service activities.
	Financial Oversight	Oversee the committee's budget and ensure transparency in financial management.

PDCA cycles	Strategy	Description
Acting (A)	Evaluation and Improvement	Evaluate the overall performance of the plan and identify areas for improvement.
	Future Planning	Develop a plan for the next year based on the evaluation results.

Table 6: Strategy 3 A detailed roadmap for promoting tourism leadership in tourism communities

PDCA cycles	Strategy	Description
Planning (P)	Educate Tourists	Act as a medium for educating tourists about natural resources and fostering a sense of conservation.
	Establish a committee	Form a committee to promote leadership in community-based resource management and conservation.
	Develop a Leadership Plan	Develop a plan to enhance the skills and knowledge of local leaders and communicators in natural resource conservation.
	Allocate Budget	Allocate a budget to support leadership development.
Doing (D)	Provide Tourist Information	Provide tourists with information about conserving natural resources before their visit.
	Implement Development Plans	Community leaders implement their personal development plans.
Checking (C)	Monitor Progress	Monitor the progress of leadership development activities and budget utilization.
Acting (A)	Evaluation and Improvement	Evaluate the overall performance and make necessary adjustments to the leadership development plan for the following year.

Table 7: Strategy 4 A detailed roadmap for public participation in tourism communities

PDCA cycles	Strategy	Description
Planning (P)	Community Involvement	Encourage community members to participate in the tourism committee and join meetings to plan tourism management.
	Collaborative Planning	Work together to plan tourism management, including conservation and restoration of tourism resources.
Doing (D)	Implementation	Community members actively participate in implementing the agreed-upon tourism management plan.
Checking (C)	Monitoring and Evaluation	Allow community members to participate in monitoring and evaluating the committee's work to ensure transparency.
Acting (A)	Improvement	Facilitate community discussions to find solutions and improve tourism operations.

Table 8: Strategy 5 A detailed roadmap for promoting marketing and tour services in tourism communities

PDCA cycles	Strategy	Description
Planning (P)	Technology Integration	Develop a plan to utilize technology for efficient marketing, booking, and tourism management.
	Committee Formation	Establish a committee to promote tourism marketing and services based on conservation and restoration of natural resources.
	Systematic Planning	Create a systematic plan for marketing and tourism services that aligns with conservation efforts.

PDCA cycles	Strategy	Description
	Capacity Assessment	Plan marketing and tourism services that match the area's carrying capacity to avoid over tourism and protect sensitive ecosystems.
	Budget Allocation	Allocate funds for marketing and tourism service initiatives.
Doing (D)	Implementation	Implement the marketing and tourism plan with a focus on conservation and restoration.
Checking (C)	Monitoring and Evaluation	Regularly monitor the progress of marketing and tourism activities and evaluate the budget usage.
Acting (A)	Improvement	Conduct meetings to identify areas for improvement and develop plans for the following year.

Table 9: Strategy 6 A detailed roadmap for preventing epidemics in tourism communities

PDCA cycles	Strategy	Description
Planning (P)	Committee Formation	Establish a committee to prepare for and prevent disease outbreaks in the tourist area.
	Emergency Preparedness Plan	Develop a comprehensive plan to prevent disease outbreaks.
	Training	Conduct training programs to improve community health and prevent disease spread.
	Budget Allocation	Allocate funds for disease prevention initiatives.
Doing (D)	Implementation	Implement the disease prevention plan.
Checking (C)	Monitoring and Evaluation	Monitor the implementation of the plan and track the budget.
Acting (A)	Improvement	Evaluate the effectiveness of the plan and make necessary adjustments.

Looking ahead, these six strategies offer a comprehensive approach to building a resilient and sustainable tourism future for Upper Northern Thailand's communities. By focusing on responsible resource management through eco-friendly practices and community involvement, enhancing sustainable infrastructure and digital services, cultivating strong local tourism leadership, ensuring active community participation, developing effective marketing and authentic tour experiences, and prioritizing health and safety, these communities can attract conscious travelers, protect their natural and cultural heritage, and thrive in the evolving tourism landscape. Successful implementation requires collaboration among all stakeholders to tailor these strategies to each community's unique context and build a truly sustainable and prosperous future for tourism in the region.

Discuss and Conclusion

The research findings indicate that the educational background of community leaders, the level of tourism support received, and the extent of tourism resource utilization were significant predictors of the effectiveness of tourism resource management, conservation, and restoration efforts in northern communities during the pandemic, accounting for 36.90% of the variance. These results align

with the importance of developing community leaders' capacity in knowledge and skills for sustainable tourism management, as well as their understanding of community identity, which are crucial elements in strategic planning for tourism communities in the upper northern region. This is similar to the work of Muanglue & Tiyapiphat (2024), which proposed promoting and fostering community participation in creative tourism development at the provincial level, emphasizing the need for preparedness through training and the development of integrated plans involving communities, agencies, and tourism networks. These aspects of the study aim to develop a framework for enhancing community leaders' capacity in managing creative tourism based on local identity in secondary cities of lower northern Thailand. Tanno et al. (2023) also presented research findings indicating that this is seen as a crucial mechanism to drive the sustainable development of creative tourism, with a particular focus on empowering all community members involved in creative activities to effectively manage local identity, apply skills to contemporary contexts, and transmit knowledge, skills, and positive attitudes.

Strategies for managing, conserving, and restoring tourism resources in northern communities during the pandemic must continue to adapt to the evolving landscape of the modern economy. Different mechanisms and operational structures may exist among government, private sector, and community sectors, as noted by Deming (2000). This research identified six key strategies: 1) resource management, conservation, and restoration; 2) infrastructure and service management; 3) leadership development; 4) community engagement; 5) marketing and tour guiding; and 6) disease prevention. These align with the findings of Thepprasit et al. (2019) on the development of ecosystem-based community management strategies in Bang Kra Chao, identifying nine dimensions: community lifestyle, corporate social responsibility, community research unit management, conservationism, regulations, conservation tourism, sustainable production and consumption, ecosystem management, and threat management. While these dimensions have some overlap, they all aim for environmental sustainability. Additionally, Lakkhasuwanno (Khamsaen) et al. (2021) emphasized in their research the importance of tourist safety measures and promoting low-impact conservation activities to preserve tourism resources. Furthermore, studies have shown that marketing strategies should include messages or media that demonstrate safety for tourists and natural resources, and emphasize cooperation in sustainable tourism development policies, as supported by Gai et al. (2024), who advocate for genuine and continuous integrated efforts from the government, private sector, and local communities to pass on natural resources and cultural heritage to future generations.

The research findings underscore that Strategy 1: Management, Conservation, and Restoration of Tourism Resources constitutes a fundamental pillar for the sustainable development of community-based tourism. The degradation or neglect of a community's natural and cultural resources would impede long-term tourism viability. Therefore, prioritizing sustainable management and resource restoration is crucial to preserving the inherent appeal and potential of these communities to attract future tourists. Furthermore, Strategy 5: Promotion of Marketing and Tour Services is deemed essential

for effectively drawing tourists to the communities and ensuring positive visitor experiences. Even with compelling resources, a lack of effective promotion or underwhelming tour services would hinder tourism success. Consequently, the development of targeted marketing strategies and the enhancement of tour service quality to meet the evolving needs of tourists are of paramount importance. In light of these conclusions, a concerted policy push and rigorous implementation are strongly recommended.

Body of Knowledge

Factors that together can explain management variation, conservation and restoration of tourism resources of tourist communities in the upper northern can be used as information for decision-making in policy planning in terms of the educational level of leaders. It can be explained that human potential is an important mechanism that drives effective sustainable tourism policies and strategies. Both in terms of having a leader's vision operation or receiving tourism support through the creation of networks between agencies outside the area, other tourism communities, or tourism support business. The upper northern of Thailand has natural resources and is being exploited to generate income in the form of goods and services. Therefore, there must be a strategy that is consistent with the area in the context of managing, conserving, and restoring tourism resources in community-based tourism.

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