

WETLAND AND BIOCULTURAL HERITAGE REGENERATION THROUGH THEMATIC ECOLOGICAL TOURISM PRACTICE: THE CASE OF PATAN SUB-DISTRICT, KHUN TAN DISTRICT, CHIANG RAI, THAILAND

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Abstract: The tourism managed and operated by local communities has evidently been a significant phenomenon in the 21st century, and therefore it is one of the challenging units in the tourism value chain. This study investigates the initiative of community ecological tourism and proposes a framework of ecological tourism development. The inductive approach utilizes field survey, in-depth interviews, participatory observation, focus group discussion with key tourism partners. The concept of public private partnership (PPP) was applied. The analytic hierarchy process (AHP) was employed to rank the criteria for ecological tourism development. The structural equation modelling (SEM), as a quantitative approach, was used to foster the factors collected from the focus group. There are six criteria identified for sustainable ecological tourism development including: environmental, economic, sociocultural, visitor experiences, infrastructure and logistics, and sustainability. Other six factors enhance ecological tourism development namely: budget, knowledge, technological system, participation, community factors, and social factors. Stakeholders highlight environment and community participation for sustainable development. Still, the local residents lack knowledge on tourism management. Based on the findings, the sustainable ecological tourism development framework for Patan was constructed. Future success factors that should be essentially developed involve inventory of local data that will be useful for establishing identity and meaning making, local individuals' learning and understanding of their local knowledge, training and tourism interpretation and narratives for story-telling of its cultural landscape.

Keywords: wetland, cultural landscape, ecological tourism, bio-cultural heritage, rural tourism

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INTRODUCTION

There has been a realization of the importance of industries emerging in the post-industrial economy, that is the service (Bordoloi et al., 2023) and tourism industry and creativity being evidently one of the main economic drivers (Zhou and Sotiriadis, 2021; Tolkach et al., 2016) in many countries. In a problematic context, tourism development is used as a solution responding to the problems in situ; in many developed and developing countries, it has been used in a proactive and holistic way to integrate tourism in the town development plan as the management for socio-cultural well-being and economic development (Hacia, 2019; Wanitchakorn and Muangasame, 2021; Oktadiana et al., 2022).

The use of tourism and recreation as a regenerative approach in communities has been significant in the post-pandemic discourse (Surawattananon et al., 2021; Afifi, 2021; Skryl and Gregoric, 2022). In Thailand, its national policy has aimed for the country to leverage social and economic capabilities of rural communities in order that the local residents can maintain their self-reliance as the catalyst for community sustainable development.

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The critical aspects of community capability development encompass transfers or contribution of technological and innovation body of knowledge built by the academic and research institutions, and commercial body of knowledge from the private sector, to be adopted in strengthening communities' local business, economic, social and education development and environmental protection and rehabilitation (Surawattananon et al., 2021), for instance.

This paper is about a rural community, Patan Sub-District Municipality in Khun Tan District, Chiang Rai Province, Thailand. Its geophysical characteristics include 33 acres of "Pa Som Saeng" or Som Saeng Forest, which is roughly 300 years old along the Ing River. Som Saeng is a tree that can tolerate flooding during the monsoon season. It is the site of a large migratory fish population that lays its eggs, creating the ecology that supports the natural abundance of the Ing River basin. During the summer season, the forest is serene and full of various flora and fauna. It has been described as Thailand's and Southeast Asia's unique wetland forest. That is in the process of being proposed to UNESCO as a Ramsar Site (Ministry of Culture and National Electronics and Computer Technology Center, 2011). Nonetheless, Patan's scenery remains wilderness because the local government and people, which have ties to Buddhism, orchestrated a blessing tree ritual to avoid devastation. The activity harmonizes with the community ways of life while also allowing local inhabitants to benefit from the natural resources. The wilderness was emphasized by (Thomsen et al., 2023) the intricacy of its description in terms of biophysical, symbolic ideals, and experiential differences from other terrestrial settings. It is the natural system's unhindered state due to human interference, the positive experiences and recreation that come from within each individual, the ecological and geological significance for scientific, educational, scenic, and historical purposes. For these reasons, controlling tourist usage through conservation is essential to maintaining the natural resources.

Based on Patan's natural and cultural landscape narratives that is still under study (Csurgó and Smith, 2021) specifically the wetland in developing countries (Khoshkam et al., 2016), this study suggests a regeneration approach for the community's heritage assets in the rural ecological tourism context in responding to urbanization and a post-pandemic resiliency, and to promote social strength at the local level. Patan, therefore, has been selected to carry out the ecological-cultural tourism development project. Its aim to increase the number of tourists which stimulating the grassroots economy, creating jobs, and distributing income within the area. However, tourism development in the past years has been linear resulting in a less sustainable practice. A more sustainable and inclusive tourism development in tune with the issues of environmental and socio-cultural resources is needed to shift to a more circular development; as a result, it conduces to a regenerative tourism system. Therefore, this study aims to propose a model of innovative community ecological tourism development and its operation by (1) investigating criteria of wetland and biocultural tourism in Patan; and (2) examining the factor enhancing tourism development initiative.

LITERATURE REVIEW

Biocultural heritage and cultural landscape

Cultural landscape originated from social and ecological processes that co-integrated overtime creating a significant value system (Schmitz and Herrero-Jauregui, 2021). Historically, the cultural landscape was constructed by a group of people representing different cultures depending on the diversity of climate and landscape (García-Ruiz et al., 2020). Though, cultural authenticity correlates how people engage with their landscapes (Stephenson, 2007). Consequently, the landscape is acknowledged and valued as a symbol of culture. It is the combination of natural and human efforts, as well as the dissemination of human society's evolution and settlement across time. The cultural landscape represents a living organism of people physically, socially, culturally (Assandri et al., 2018), spiritually and economically (Gordon, 2018). Addedly, cultural landscapes represent the intricate and dynamic interaction of culture, environment, and society. It is, where, the inseparable correlational of society and nature tied. That bridged the cultural tangible and intangible heritage with the biological sphere (Aktürk and Dastgerdi, 2021). Remarkably, Fenitra et al., 2022 highlighted the biospheric value that inherited in individuals influencing the environmental concern. Inasmuch as the key elements are also including its symbolic values and society (Csurgó and Smith, 2021). Yet, the notion of biocultural heritage (Ekblom et al., 2019) originated from the confluence of local resource management with conventional ecological wisdom. The ecosystem that spans human culture and the natural environment intersects with knowledge, innovation, and habits.

The framework has been developed by (Ekblom et al., 2019) aiming for natural preservation, landscape planning and development etc. It comprises five elements, namely: ecosystem memories, landscape memories, place-based memories, integrated landscape analysis and stewardship and change. Even if the descriptions of biocultural heritage and cultural landscape overlap, both notably serve the economic output through tourism, from individual level to national level.

The cultural heritage and tourism development are necessary for sustainability, since social and economic growth are acknowledged as unfolding beneath the built environment or heritage (Cai et al., 2021). However (Ekblom et al., 2019), it is critical to foster equality and the inclusive creation of regional traditions with the goal to support biodiversity innovation and continuity in local community sustainably, and cooperation in landscape management and preservation. Hence, the concept of ecological tourism or slow tourism was proposed (Kropinova et al., 2023) specifically in protected areas. The scholars (Kropinova et al., 2023) found significant resources as such historical and cultural landscapes, and natural resources generating tourism products raising awareness and educate on environmental issues, while the slow tourism is about knowing one tiny landscape well in the true pace of life. Highlighting the cultural ecosystem services (Assandri et al., 2018), the value of cultural heritage (Chaigasem and Kumboon, 2024) and aesthetics were quantified and assessed. Other major concerns include landscapes that provide a feeling of place for recreation and development of tourism (Csurgó and Smith, 2021), as (Schulp et al., 2019) underlined that landscape features and cultural heritage are valuable qualities of

cultural landscapes inherently. On the other hand, the new holistic concept as creative tourism for sustainability was proposed (Singtuen and Galka, 2024) by the well-prepared combination of natural, cultural, and lifestyle tourist attractions.

At the same time, local communities shall recognize the value of their culture along with the effort to conserve environment. Hence, the planning and development of the untapped site or protected area shall consider the resources mentioned, since tourism has become recognized as a source of environmental problems (Fenitra et al., 2022).

The aim of community ecological tourism development project is to promote an increased number of tourists, which contributes to the local economic benefits by job creation and income distribution within the area, and promotes social strength at the local level (Khoshkam et al., 2016). To achieve these goals, there is still much debate of how to operate tourism sustainably especially in the community level in Thailand.

Wetland

Wetlands can be permanent or seasonal floating locations (Let and Pal, 2023), such as lakes, reservoirs, ponds, and rice fields. The wetland or Ramsar is considered as crucial resources to the country's economic, cultural and aesthetic values, environmental biodiversity (Ye and Sun, 2021) and social development (Zhang et al., 2024). Similarly, the IUCN (2008) reported that the Siphandone Ramsar in Lao PDR has a substantial impact on local economies, fisheries, areas of high biodiversity, and vital ecotourism destination. Regarding tourism, wetlands has markedly endowed opportunities results to socio-economic for both government and local residents (Aazami and Shanazi, 2020).

Despite this, little attention is drawn to the importance of tourism for local people and communities in developing countries' wetland sites. Conversely, the growth of tourism in developing countries may have detrimental effects on the environment, sociocultural aspects, and economy (Khoshkam et al., 2016). As a consequence, the review of Let and Pal (2023) pointed out the wetland loss 4.81 percent yearly specifically in developing countries. While, tourism is one of the primary key drivers of the loss. On the other hand, Xu and He (2022) revealed that overdevelopment of infrastructure and large numbers of visitors could diminish wetlands' ecological and recreational value. On top of that, the pristine wetlands sites become more demanding among tourists for recreation. In the meantime, they are the highest endangered habitats on the globe. For this reason, the wise use of wetlands is recommended i.e. provide habitats, (Stojanović et al., 2018) water purification (Milanović-Pešić et al., 2023). Because the damp habitat is crucial for diverse ecosystems (Trišić et al., 2024), and fresh water is an essential component of life (Milanović-Pešić et al., 2023). As an example (Perdana et al., 2020) Bali, Indonesia is confronted with water utilization disproportionately and wastewater that destroys the environment.

Researchers (Khoshkam et al., 2016) recommended creating the attitude of local residents perceiving tourism impact by underlining the economic, social and cultural aspects in wetland tourism development. Thence, the local residents partaken in the development process through the strategical planning and implementation. Aside from that, the empowerment (Aghazamani et al., 2020) that allows participants decide and make choices would elevate the pride in local traditions and increase willingness to be educated in the tourism development process. This related to the study of Let and Pal (2023) found socio-ecological well-being alike human development, economic status has a positive impact in wetlands preservation. Besides, the natural resources should be logically developed along with socio-cultural in recognition of social value (Ye and Sun, 2021).

Not only that, but also the government entities must establish criteria and verify compliance (Mahar et al., 2023). At the same time, tour operators must ensure that information is distributed and the tourism operations have a minimal detrimental impact on wildlife (Marasinghe et al., 2021). Addedly, Stojanovic et al (2018) highlighted the conformity of nature protection and tourism development. Thereby, the recognition of both ecological and social values, as well as the formation of the roles of all issues of tourism development, has been recognized (Trisic et al., 2024). To this end (Aazami and Shanazi, 2020) specified the management implications that require robust public private partnership (PPP) as well as the involvement from local residents in Patan's wetland. There should also exist sufficient funds striving to conversation success.

Public Private Partnership – PPP

Public-private partnership (PPP) is the agreement on cooperation between public organizations and private enterprises for services typically provided by the government. It aims to synergistically attain results by integrating people and resources, sharing goals, risks, and financial capacities between public and private enterprises. It is generally an accepted tool for rural development especially in developing countries because of the lack of managerial expertise in public organizations (Xiao and Lam, 2019; Osei-Kyei and Chan, 2017). PPP assisted efficiently in issue solutions and is considered legitimate in terms of involvement and accountability in rural governance. PPP contributed to the sustainable development practices, and was applied in various policies as such education, environment, healthcare, energy, and infrastructure (Björstig and Sandström, 2017; Wang et al., 2017; Tamošaitienė et al., 2021). As Dupont et al. (2015) stated in their study on PPP supporting smart city, it anticipated to create holistic values in the local area, including economic, knowledge, ecological, and social aspects. Currently, PPP has gained higher attention in academic sphere due to its effectiveness in achieving sustainable development goals. Furthermore, UNWTO underlined PPP in its manual on accessibility tourism for all that allow underprivileged individuals enjoy the design for all of tourism services.

It is also ensuring the preservation of culture, environment, and social resources availability to provide for the tourist especially in protected area (Matteis et al., 2021). Howbeit, PPP in tourism is still a limited number of studies in the tourism sector (Azazz et al., 2021). To implement PPP, researchers spotlight on uniform goals between parties (Thorpe, 2018), since the aims of public and private entities driven by different economies (Asplund et al., 2021). The continuous

monitoring and exploring the previous success factors (Osei-Kyei and Chan, 2017) as a lesson learned is critical. Yet, in the tourism sector (Matteis et al., 2021) the proper attention to governance issues, mutual trust and commitment, and leadership are recommended. The interest of stakeholders both internal and external must be emplaced in the early stage of the planning to engage and decrease resistance which may occur (Azazz et al., 2021). The tourism industry, in Thailand (Potjanajaruwit et al., 2024) relies heavily on partners' agreements.

As well as, the unskilled human resources in the industry standards. Hence, the collaboration among stakeholders is essential for the tourism planning and sustainable development. Thence, in this study, we applied PPP to public, private, and people partnership in co-operating to the development of tourism on the planet sustainably.

Ecological Tourism in Rural Condition

The term ecological tourism or ecotourism has been found relating to other terms such as natural tourism, rural tourism, wilderness tourism, alternative tourism, cultural tourism, green tourism, soft-adventure tourism, low-impact tourism and even the term bio-tourism. A bunch of these terms concern with responsible, honest and respectful tourism activity in outer rural area (Quintana, 2020; Cucari et al., 2019). Rural tourism is not a new concept in tourism development but it represents one of the alternative ways of local community development and community wellbeing (Li et al., 2020; Campón-Cerro et al., 2017). Rural tourism associates with rural landscape (An and Alarcon, 2021) and local communities with distinct ways of life and culture (Chen et al., 2022). Creating rural tourism value design successfully utilizes both the values of rural content or culture and rural context or place, aiming to valuing, create unique experiences, and safeguarding rural villages along with their associated landscapes, knowledge systems, biological and cultural diversity, local values and agriculture-related activities, and gastronomy (UNWTO, 2020; Chen et al., 2022; Su et al., 2019).

The well-planned and development of rural tourism is greatly important, since tourism posits on both positive and negative results, i.e. the economic improvement and the derailment of local ecosystem (Cucari et al., 2019; Li et al., 2020; Dinis et al., 2019). Besides, the tourism trend is changing to be more attached to nature, green, clean, fresh air landscape (Skryl and Gregoric, 2022), uniqueness, personalized experiences, and looking for opportunity to learn new cultures and places (Cucari et al., 2019). Then, we can infer that rural settings and tourism entrepreneurial businesses require aid in formulating management strategies together with technical assistance (Campón-Cerro et al., 2017).

In parallel to the strategy, Su et al. (2019) cited the adoption of local knowledge, traditional life skills can engage and deliver tourist experience favorably. Yet, the remembrance of the past or nostalgia (Christou et al., 2018) is another tourism trend that captivates tourists travelling to the rural settings, savoring the retro and returning to historical memories, in spite of the fact that each rural settings are different in socio-economic, resources, needs, and characteristics. Such that the process of suitability analysis for tourism development is prominent within its environmental sphere (Ayhan et al., 2020).

Other researchers (Gao and Cheng, 2020) spotlight the role of government agencies in the sustainable development of rural settings by progressively applying managerial tools and engaging with the stakeholders. More importantly in rural landscape for tourism, the local life span scenery (Wu et al., 2022) and a broad interaction between local residents and visitors play a critical role in tourism quality (An and Alarcon, 2021). Regarding the ecological system, the extensive public relations on environmental protection, greater investment in environmental preservation and solid mechanism especially on wetland protection should be implemented (Zhang et al., 2023). Certainly, the rural tourism and ecotourism enhances the biodiversity conservation and well-being of local people (Agius et al., 2021; Mileti et al., 2022). Somehow, the implementation of the protected area for ecological tourism in rural areas must take into account the influence on local residents' livelihoods, notably economic activities (Agius et al., 2021). Mileti et al. (2022) proposed the EcoSmarTour, which motivates community stakeholders such as farmers, tourism entrepreneurs, and the general public to implement sustainable policies.

For the reason that (Raina et al., 2024) the negative impact of tourism on natural resources are including water scarcity, strain on local resources, land degradation, and pollution particularly in sensitive rural areas. Mahar et al (2024), then, suggested another type of tourism namely community managed nature-based tourism. The strategies accented on fostering and establishing community-based local institutions, implementing mechanism to minimize benefit leakage, raising awareness among local people and engage them in tourism and tourists, using media promoting nature-based tourism, rigorous on rules and regulations enforcement for wildlife habitats, evaluate carrying capacity, and limited zone for tourism activity.

MATERIALS AND METHODS

This research uses an interpretative approach as in the qualitative methodology for contextual understanding and gaining insights about the case. The analytic hierarchy process (AHP) was employed to weight the factor value (Wang et al., 2021). AHP facilitates decision-making and judgement on both qualitative and quantitative aspects (Fang et al., 2021) which are widely used in various businesses (Ren et al., 2016). The AHP is composed of four steps including: assessing the issue and creating hierarchical structures, establishing the multidimensional choice links by pairwise comparisons of the factors, and providing the decision values of the options in regard to each criterion, using the multiplicative preference relations to determine the criteria's priorities, and ranking all alternatives after aggregating their comprehensive values (Ren et al., 2016). Besides, the structural equation modelling (SEM) was administered to assess the identified-factors in rural tourism initiative from the focus group.

The public private partnership – PPP has been adopted along with people (local residents) and planet (environment). In consequence, the primary data was collected by utilizing field survey, in-depth interview, participatory observation, focus group discussion and participatory rural appraisal (PRA) with all key tourism partners including representatives

from the governmental and private sectors, local academic experts, and local communities. The secondary data retrieval was based on academic literature such as related research papers, including official documents provided by the related governmental and private agencies from both online and offline sources. The sample groups were selected for the primary data collection, categorized into the following 4 groups of 12 person including: (1) 2 people from Provincial Office of Tourism and Sport, and Tourism Authority of Thailand representing the governmental sector; (2) 4 people from local tourism and service businesses such as tour and transport companies and accommodation representing the private sector; (3) 2 people from local government organization and (4) 4 people from local communities.

The 400 questionnaires were exploited for quantitative data collection among villagers, tourism entrepreneurial businesses, and public entity. Conceptualizing, Figure 1 explains that the qualitative approach employs the PRA, in-depth interview and focus group based on the notion of PPP. This stage generates the concerned-criteria for wetland and biocultural tourism in Patan and factors enhancing tourism development. The AHP approach, then, was applied to compare and rank the importance of criteria consensually in the tourism development initiative. Concurrently, the quantitative approach uses SEM to examine the factor enriching ecological tourism development in Patan.

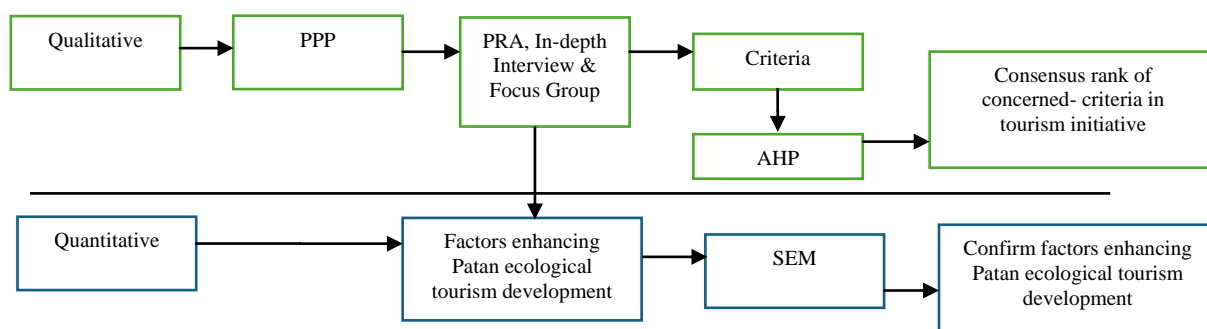


Figure 1. Flow chart of methodology

RESULTS AND DISCUSSION

Cultural Landscape and Heritage Values

Geographically, the community is rich in the natural resources as it is a plain with mountain and river landscape. The area includes villages, rice fields, plantations, reservoirs, rivers, brooks, community forests and others, while most part of the land is for rice farming. The local residents have lived on the primary sector mainly working in farms especially in rice fields. The community heritage is embedded in the social, agricultural, spiritual and aesthetic values. The legendary belief, community forest, temple heritage and living culture here are the main ingredients for the regeneration of the community's cultural landscape ecosystem. These present the historical value and foster the community's collective and communal spiritual value, which plays a significant role in the daily life of local people here, and that has been transformed in the alternative form of eco-cultural activities to offer to visitors. The spiritual value is supported by the beautiful natural landscapes; this enhances the attractiveness of the site environment and creates tourism value. With this holistic ecosystem, the regenerative sustainability of its social and ecological systems can be enabled to continuously regenerate and evolve.

The final output of a regenerative heritage approach should be the creation of a space that is able to revitalize the surroundings and the context where it is placed. The genius loci of the ecological community places on natural and physical environmental of the community. Mostly, the attractions or important places of the community such as temples and man-made attractions for tourism purposes are ready for visitors, with facilities such as toilet and parking area, art, culture and living heritage resource showcasing local handicrafts (i.e., bamboo basket, weaving, products from coconut shells and wood carving), folk songs, music and dance, and religious festivals. Spiritual rituals are still practiced in the community, and the locals have strong beliefs in the wisdoms of folk philosophers connected with traditional and alternative practices of physical and spiritual wellness and protection. Also, the community offers a variety of preventive health programs with food, herbs and medicine. From the focus group, we came up with 6 criteria for tourism development initiative to consider in the area, comprising: (1) environmental; (2) economic benefits; (3) sociocultural; (4) visitor experiences; (5) infrastructure and logistic; (6) sustainability as shown in Table 1.

Table 1. Criteria for Wetland and Biocultural Tourism in Patan

Criteria	Sub-criteria
1. Environmental (Env.)	- pollution (water); - Flora and Fauna; - waste generation and management
2. Economic (Econ)	- job creation and income of individuals; - revenue generation to local businesses; - contribution to general economic
3. Sociocultural (Socio)	- local customs and traditions; - promotion of cultural heritage; - community participation and empowerment
4. Visitor Experiences (Visit Exp.)	- educational value; - level of satisfaction; - authenticity of experience
5. Infrastructure and Logistics (Infra.)	- Accessibility (easy to access the site); - visitor facilities (adequate restrooms, information signage); - Carrying capacity management (ticket system, designated routes)
6. Sustainability (Sust.)	- resource management (water, energy, local materials); - community participation and engagement; - adaptability of tourism practices according to environmental conditions

For appropriate planning, the AHP process was implemented for consensus agreement on the criteria importance. Firstly, the pair-wise comparison was conducted as shown in Table 2. The results exposed that the environmental impact is most important with high values comparing to other elements. It is five times more important not only than economic, but also the infrastructure and logistics. Over and above, it is six times important than visitor experience.

Whereas, the sustainability, sociocultural, and environment were seen equally important. One interesting finding in these results illustrated sociocultural was less than economic factors. At the same time, it was five times more important than visitor experience, and four times more important than infrastructure and logistic. It is notably that infrastructure and logistic was likely less important compared to other factors.

Table 2. Pair-wise Comparison Matrix

Criteria	1 Env.	2 Econ	3 Socio	4 Visit Exp	5 Infra	6 Sust.
1 Env.	1	5	1	6	5	1
2 Econ	0.20	1	4	4	3	1
3 Socio	1.00	0.25	1	5	4	1
4 Visit Exp	0.17	0.25	0.20	1	4	4
5 Infra	0.20	0.33	0.25	0.25	1	4
6 Sust.	1.00	1.00	1.00	0.25	0.25	1
Total score	3.57	7.83	7.45	16.50	17.25	12.00

The normalized pair wise comparison was conducted, as well as the criteria weight was assessed as in Table 3. It is observable that the environment is paramount factor with 30 percent weighted. The second element emerged is the economic with 20 percent. It is followed by sociocultural, 18 percent, visitor experience, 12 percent, sustainability, 11 percent, and infrastructure and logistic 9 percent. It is astonishingly that the initiative development scenario of tourism shall prioritize the environment, while considering the weighing of social, economic, and tourism-related aspects strategically.

Table 3. Normalized Pair-wise Comparison Matrix

Criteria	1 Env.	2 Econ	3 Socio	4 Visit Exp	5 Infra	6 Sust.	Criteria weight
1 Env.	0.28	0.64	0.13	0.36	0.29	0.08	0.30
2 Econ	0.06	0.13	0.54	0.24	0.17	0.08	0.20
3 Socio	0.28	0.03	0.13	0.30	0.23	0.08	0.18
4 Visit Exp	0.05	0.03	0.03	0.06	0.23	0.33	0.12
5 Infra	0.06	0.04	0.03	0.02	0.06	0.33	0.09
6 Sust.	0.28	0.13	0.13	0.02	0.01	0.08	0.11

Over and above, the six factors enhancing tourism development were identified in the focus group. It is composed of the (1) financial support or budget (BG) from government, private sector, local government and cash flow within community; (2) the knowledge (KL) of local residents in tourism management; (3) the application of technological (TN) system in tourism including internet access and social media; (4) community participation (PT) in developing tourism; (5) community factors (CF) (i.e. leadership, creativity, awareness of local value), and (6) social factor relates to the network in tourism, market, funding access etc... Thereafter, the simple mean statistic was adopted to rank these factors contributing to tourism development in Patan (FACCBT). The results point on participation with mean score 3.30, community value 3.25, social factor and budget relatively equal at mean score 3.21 and 3.20. The knowledge of local people in tourism management and technology mean score are 3.18 and 3.15 respectively as shown in Figure 2 below.

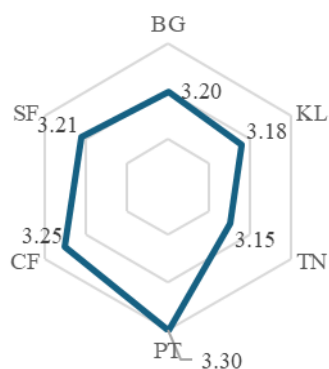


Figure 2. Factor enhancing tourism development initiative in Patan

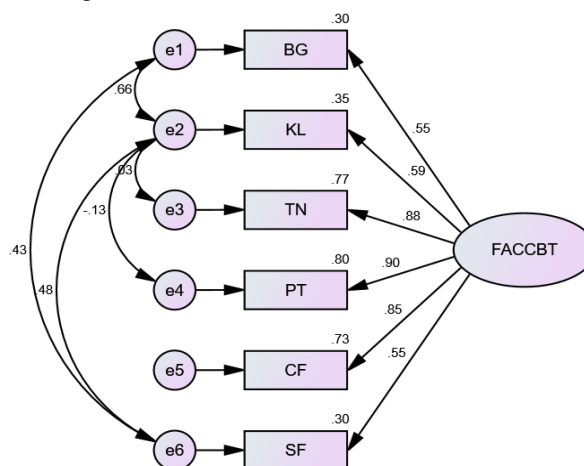


Figure 3. SEM results of factors enhancing Patan rural Tourism development

Further, the SEM was conducted to pinpoint the factors flourishing tourism development in Patan district. The fitness indices were tested consisting of Chi-squares = 3.378, df = 4, p=.497, Chi-square/df= .844, CFI = 1.00, GFI= .997,

AGFI= .985, RMSEA=.000. As Figure 3 shows, the highest factor loading enhancing ecological tourism development is local participation at 0.90. The technological, community factor, and knowledge in tourism management are the second, third, and fourth with loading factor 0.88, 0.85, and 0.59. The last two factors are budget and social, having the same loading weight at 0.55. According to these data, we can infer that the development of ecological tourism requires participation from all stakeholders, specifically local residents. In general, therefore, it seems that the technological along with leadership, creativity and the awareness of local value as community factors are crucial. The initial results are also suggestive of a link between six factors in Patan tourism development.

CONCLUSION

This project was undertaken to determine the criteria for wetland and biocultural regeneration for ecological tourism development and assess the factor flourishing tourism development in Patan. Overall, this study strengthens the idea by far that people are aware of the environment. Referring to the AHP results, it mirrors a strong commitment to ecological responsibility and sustainability. Henceforth, any development of tourism should primarily be environmentally concerned with both protection and conservation. In the second place, the economic benefit shall equally partake among stakeholders, especially local residents and environmental protection fund. Another high ranking is sociocultural, underlines the prominence of community's cultural value preservation. This recommends that the tourism development project should adhere to social and promote cultural heritage. In a holistic view, the visitor experience, infrastructure and logistic, and sustainability are not weighted in high score. Logically, as respondents cited the preservation and maintaining of environment and cultural heritage are delivering the traveler's unique experience and tie with sustainable practices itself. The simple existing infrastructure and logistic accessing to the site is rather fine.

The following conclusions can be drawn from the SEM assessment that the factors interconnected to the ecological tourism development. It disseminates that participation from stakeholders is highest vital, especially the local residents. In consonance with (Björstig and Sandström, 2017; Wang et al., 2018; Tamošaitienė et al., 2021), participation leads to sustainable development practices and safeguarding the culture, environment, and social resources (Matteis et al., 2021).

It is undeniable, in the post-modern world, the importance of technology that infuses in our daily life. The technology comes second important on the use of social media promoting the site as well as the internet access. It is followed by the community factors as the mutual goals among stakeholders (Thorpe, 2018), continuous monitoring and investigating of lesson learned (Osei-Kyei and Chan, 2017), trust, commitment and leadership are critical (Matteis et al., 2021). The data conjointly suggest that the tourism development can be achieved through the local community knowledge on tourism management. The current data also highlights the importance of tourism networking, market, and the accessibility to funding as social factors and budget.

Implication of this is the possibility that, the holistic approach utilizing natural and living heritage of communities to diversify the socio-cultural and economic benefits is suggested in this study. The key findings highlight strategic practices that act as success catalyst driving innovation for community ecological tourism development for the case study area. The identified sets of indicators encompass five criteria and six dimensions, where participation interplays in both criteria and dimension as shown in Figure 4.

The participation focuses on formation of community co-operation with village members who co-operate in order to create and promote tourism and local products of the community. This establishment facilitates and mobilizes works across different groups of community members who have different duties and abilities. This study is set out to understand better PPP in tourism development. That includes public, private, and people partnership. The missions of the community co-operation cover: (1) planning for linking tourist attractions into routes which are eco-tourism route, agrotourism route, health tourism route and cultural tourism route; (2) building partnership and networking with governmental, private and civil sectors; and (3) developing product models from local resources, especially food product.

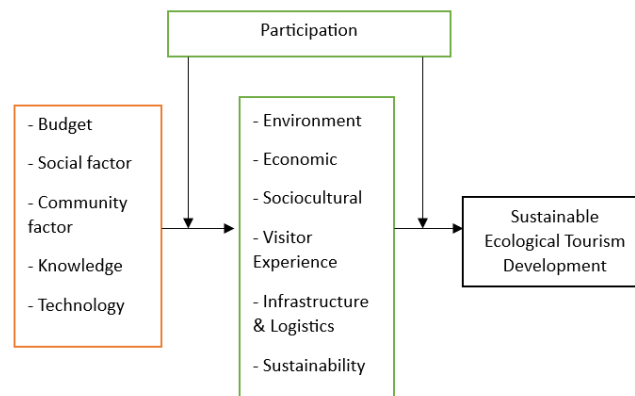


Figure 4. Sustainable Ecological Tourism Development Framework in Patan

Future success factors that should be essentially developed involves inventory of local data that will be useful for concreting identity and meaning making, local individuals' learning and understanding of their local knowledge, training

and tourism interpretation and narratives for story-telling of its cultural landscape, which should incorporate interpretation of local material culture from process to products. Moreover, a limitation of the community co-operative is that the community lacks knowledge and skills in business operation aspect, thereafter capacity building on this shall be enhanced. Thus, educational institutes should hand in to cooperate and assist the community in trainings. The tourism run by local communities today has been felt to be a necessary approach for local development. Also, as a consequence of more communities getting started their community tourism and the fact that tourists seek for more diverse, innovative and meaningful experience from tourism activities run by local communities, to an extent it implies the question of how to create differentiation and outstanding tourism activities to attract first-time and repeated tourists. Local communities should think how to integrate cultural, natural or environmental properties, and even local technology or wisdoms into social and economic capital for long-term sustainable development amongst unexpected threats to come. Also, it is necessary today that a community aiming to mobilize local resources and its people with tourism initiatives needs business networking in order to build its marketing and communication and to increase its market accessibility through networking with and acquiring the facilitation of private sector; this can also include groups of tourism social entrepreneurs recently emerging.

Limitations of the study

This study highlights specifically on Patan Sub-District, Chiang Rai, Thailand. That might limit the generalizability of findings to other regions with different ecological, cultural, and socio-economic background.

The degree of engagement and cooperation from stakeholders in other geographical aspects can vary, which could potentially lead to incomplete insights. The existing policies and practices may not support the ecological tourism regeneration, since the ecosystem and biodiversity are rather complex and vulnerable.

Thence, in future research the awareness of these issues would enhance smooth study.

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