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Indicators Of Sustainable Tourism In Creative Cities: A Factor Analysis Of Chiang Mai

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Abstract
This study investigates the indicators of sustainable creative cities and visitor management for tourism community development in Chiang Mai, a UNESCO Creative City of Crafts and Folk Art. The research seeks to answer the question: How can sustainable stakeholder, visitor, economic, cultural, and environmental management indicators be used to support effective community-based tourism? Using a quantitative approach and Exploratory Factor Analysis (EFA), data were collected from 570 stakeholders across Chiang Mai's public, private, and people sectors. The findings reveal five significant factors, all with high reliability scores, providing a localized framework for sustainable tourism planning. This study contributes to bridging global sustainability frameworks (UNESCO, GSTC) with community-based tourism practices, offering policy implications for other creative cities globally.
Keywords: *Sustainable Creative Cities, Visitor Management, Tourism Community Development*

INTRODUCTION

The active involvement of tourism communities in visitor management and capacity planning is vital for the long-term sustainability of creative cities. This study focuses on Chiang Mai, a UNESCO Creative City of Crafts and Folk Art, and explores stakeholder perceptions of integrated indicators based on UNESCO's Sustainable Creative City framework. Five key dimensions—stakeholder, visitor, economic, cultural, and environmental management—are identified as practical tools for guiding tourism policy and planning. Applying this framework can help Chiang Mai strengthen its creative identity, boost competitiveness, generate local income, and revitalize its economy. The UNESCO Creative Cities Network (UCCN) promotes global collaboration among cities that view creativity and cultural industries as drivers of sustainable development. With over 250 member cities in seven creative fields, UCCN supports integration of creative sectors into local strategies and encourages cross-sector cooperation. Thailand currently has five UCCN cities: Bangkok (Design, 2019), Sukhothai (Gastronomy, 2019), Phuket (Gastronomy, 2015), Chiang Mai (Crafts and Folk Art, 2017), and Phetchaburi (Gastronomy, 2021), reflecting national efforts to advance the creative economy and community-based tourism (Tourism Authority of Thailand, 2022).

Table 1 Creative Cities in Thailand

Province	Categories	Year
1. Phuket	Creative City of Gastronomy	2015
2. Chiang Mai	Creative City of Crafts and Folk Arts	2017
3. Bangkok	Creative City of Design	2019
4. Sukhothai	Creative City of Crafts and Folk Arts	2019
5. Phetchaburi	Creative City of Gastronomy	2021

Source: Tourism Authority of Thailand (2022)

The Thai government has positioned Soft Power—encompassing culture, cuisine, traditional attire, and the arts—as a strategic tool for national development. By promoting these cultural assets globally, Thailand enhances its international image, boosts tourism, and drives economic growth. The Ministry of Culture, in collaboration with relevant agencies, is developing coordinated strategies to increase the global value of Thai culture. Cultural exports not only elevate Thailand's global standing but also support local and national economic prosperity (Tourism Authority of Thailand, 2022).

Chiang Mai was designated a UNESCO Creative City of Crafts and Folk Art on October 31, 2017. Its combination of cultural heritage, infrastructure, and economic incentives supports long-term tourism and development (Chiang Mai Development Plan, 2022). To fulfill its creative city role, Chiang Mai must promote creativity across culture, communities, and urban life, requiring cross-sector collaboration. However, aligning community-based tourism with both Creative City and potential World Heritage status presents challenges, especially due to the absence of integrated tools addressing sustainability, visitor management, and heritage preservation (Chiang Mai Coordination Center Creative City, 2022). A key issue is ensuring equitable income distribution to local communities. This requires a strategy combining sustainability indicators—including management, carrying capacity, and impact—with cultural preservation and targeted promotion (Tourism Council of Chiang Mai, 2022). Despite growing global interest in creative cities, research on their sustainable management remains limited, particularly for cities with potential World Heritage status. Most studies emphasize economic dimensions, overlooking the integration of sustainability and visitor management. To fill this gap, this study applies Exploratory Factor Analysis (EFA) to develop localized, stakeholder-informed indicators. By integrating sustainable tourism and creative city frameworks, it proposes a multidimensional, empirical model that informs local policy and offers a scalable solution for similar cities. This study addresses a key challenge in sustainable urban tourism: how to operationalize global frameworks such as UNESCO's Creative Cities Network and the Global Sustainable Tourism Council (GSTC) criteria within community-based tourism settings. In particular, Chiang Mai—designated as a UNESCO Creative City of Crafts and Folk Art—faces complex demands in balancing cultural preservation, community development, and tourism pressures.

Research Question

How can indicators of sustainable stakeholder management, visitor management, economic management, cultural management and environmental management be used to effectively manage community tourism and community development?

Research Hypothesis

Factor loading analysis of sustainable creative cities and visitor management for tourism community development consists of five elements: sustainable stakeholder management, visitor management, economic management, cultural management, and environmental management consists of the empirical data.

LITERATURE REVIEW

The History of UNESCO Creative Cities

Established in 2004, UNESCO's Creative Cities Network fosters international collaboration across seven creative fields, promoting innovation, cultural identity, and sustainable urban development. Creative cities integrate creativity into economic, social, and political spheres, emphasizing flexibility, inclusivity, and high-quality urban design. The network advances its mission through global and local initiatives such as knowledge exchange, collaborative projects, artist mobility, policy advocacy, and public awareness campaigns (UNESCO, 2024).

Chiang Mai: Creative City of Crafts and Folk Art

Chiang Mai, with over 700 years of history, has been designated a UNESCO Creative City of Crafts and Folk Art for its rich cultural heritage rooted in Lanna traditions. This designation supports sustainable development through the global promotion of cultural assets, empowerment of artisans, and growth of creative industries (UNESCO, 2024). Its strategic location and strong local governance further enhance its connectivity and capacity for cultural preservation and artistic advancement (Creative Economy Agency, 2022). The city's strengths span seven craft categories across 736 communities, contributing to cultural tourism and quality of life. However, challenges remain, particularly in visitor management, carrying capacity, and urban transformation (Chiang Mai Development Plan, 2022). As part of the UNESCO Creative Cities Network, Chiang Mai gains increased global visibility and tourism appeal (DASTA, 2021). UNESCO and APEC emphasize the importance of tools like the Visitor Management Assessment Tool (VMAT) to assess tourism impacts and manage capacity effectively. Without attention to these indicators, cultural heritage and community sustainability may be at risk, making effective visitor

management essential to maintaining Chiang Mai's creative city status and supporting long-term urban sustainability (APEC, 2023).

The Visitor Management Assessment Tool (VMAT)

The UNESCO World Heritage Sustainable Tourism toolkit includes the Visitor Management Assessment Tool (VMAT), designed to help site managers balance cultural conservation with sustainable development under the 1972 World Heritage Convention. VMAT assesses governance, visitor impacts, and progress toward sustainability goals, supporting the creation of visitor management plans and enabling comparisons across sites regardless of resource levels (APEC, 2023). This study's assessment focuses on four objectives: heritage protection, environmental sustainability, social sustainability, and economic sustainability.

Table 2 Strategic Objectives of VMAT

Section	Criteria
Goal A: Visitor management	Effective governance and visitor management are essential for protecting heritage values.
Goal B: Environmental sustainability	Contributing to environmental sustainability, climate change mitigation, and adaptation.
Goal C: Cultural sustainability	Contributing to inclusive social development and cultural sustainability maximizes benefits while minimizing negative impacts on communities, visitors, and culture.
Goal D: Economic sustainability	Contributing to inclusive and sustainable economic development maximizes welfare and enhances economic benefits.

Source: APEC, 2023

UNESCO's Visitor Management Assessment Tool (VMAT) functions as both an assessment and improvement tool for attraction managers and local stakeholders. It evaluates tourism impacts, site capacity, and adaptability across four domains: tourism administration, environmental sustainability, cultural development, and economic growth, using 40 indicators (APEC, 2023). As smaller cities become key economic drivers, success will rely on creativity, human capital, and quality of life rather than industrial output. Aligning local creativity with global trends positions Chiang Mai as a regional model for sustainable development (Sintuphant, 2014). Tools like VMAT support heritage site management and community adaptability, while the GSTC emphasizes community participation as a core principle of sustainable tourism (APEC, 2023).

The Global Sustainable Tourism Council (GSTC)

The GSTC-Destination (GSTC-D) criteria, developed by the Global Sustainable Tourism Council, provide a standardized framework for sustainable tourism across four key areas: sustainable management, socio-economic, cultural, and environmental sustainability. These criteria establish minimum standards for all destinations, support alignment with the 2030 Agenda and 17 SDGs, and offer practical guidance for implementation, monitoring, and stakeholder communication. Each criterion is linked to relevant SDGs, promoting a shared understanding of sustainable tourism without prioritizing one area over another (The Global Sustainable Tourism Council, 2019; APEC, 2023).

Table 3 The structure of the GSTC criteria

Section	Criteria
A: Sustainable management	A(a) Management structure and framework
	A(b) Stakeholder engagement
	A(c) Managing pressure and change
B: Socio-economic sustainability	B(a) Delivering local economic benefits.
	B(b) Social well-being and impacts
C: Cultural sustainability	C(a) Protecting cultural heritage.
	C(b) Visiting cultural sites
D: Environmental sustainability	D(a) Conservation of natural heritage
	D(b) Resource management

Section	Criteria
	D(c) Management of waste and emissions

Source: The Global Sustainable Tourism Council, 2019

Sustainable tourism management should encompass holistic development, emphasizing city growth, visitor management, and tourism carrying capacity. This approach is essential for maintaining balance across environmental, economic, social, and visitor satisfaction dimensions.

Tourism Carrying Capacity

Tourism carrying capacity refers to the ability of an area to sustain tourism without disrupting ecological balance. It requires ongoing assessment and stakeholder consensus (Newsome, Moore, & Dowling, 2002). As noted by Pimentel et al. (1994), limiting tourist numbers based on ecological capacity helps protect natural systems, with some areas requiring seasonal closures for environmental recovery. Carrying capacity, as defined by the UNWTO (1981), refers to the maximum number of visitors a destination can accommodate without harming the environment, economy, society, or visitor satisfaction. Mathieson and Wall (1982) describe it as the limit beyond which recreational experiences degrade. Saveriades (2000) further emphasizes its link to sustainability, defining it as the sustainable level of tourist development within a specific area.

Impact management

Impact management involves identifying, assessing, and managing both the positive and negative effects of business activities on people and the environment. It aims to minimize harm, maximize benefits, and align outcomes with organizational goals. Impacts—whether direct or indirect, intended or unintended—affect social and environmental well-being. A clear understanding of impact enables organizations to drive positive change while managing risks and stakeholder expectations. Key steps include setting impact goals, engaging stakeholders, prioritizing impacts through materiality assessments, aligning with SDGs, planning via impact value chains, integrating results into governance, and transparently reporting outcomes. The SDG Impact Standards, developed by the UNDP, provide a structured framework for private sector organizations to integrate the Sustainable Development Goals (SDGs) into business and investment decisions. They are based on four pillars: Strategy, Management Approach, Transparency, and Governance. These standards promote responsible practices, accountability, and impact optimization for sustainable growth (The Securities and Exchange Commission, 2024).

Theoretical Framework

To reinforce the study's conceptual foundation, three interrelated theories were applied: Sustainable Tourism Theory, Creative City Theory, and Environmental Governance Frameworks. Sustainable Tourism Theory, based on Butler (1999) and the GSTC, emphasizes balancing environmental, socio-cultural, and economic sustainability through criteria such as stakeholder participation and carrying capacity. Creative City Theory, from Landry (2000) and UNESCO (2022), highlights the role of cultural assets in urban innovation, informing this study's focus on stakeholder engagement and cultural management in Chiang Mai, a UNESCO Creative City. Environmental Governance, grounded in Ostrom's (1990) work and resilience-based approaches, supports the study's environmental dimension, emphasizing collaborative governance and long-term sustainability. This theoretical triangulation allows for a comprehensive understanding of community-based tourism in Chiang Mai and ensures that the proposed indicators are both contextually relevant and aligned with global standards. Unlike prior studies, this research uniquely applies global tools like GSTC and VMAT at the community level within a UNESCO Creative City, filling a gap in practical, localized measurement through EFA.

This study develops indicators through two key dimensions: Creative City Management and Sustainable Tourism Management. While UNESCO's Creative City indicators and VMAT offer valuable tools, they are not yet fully applied in community-based tourism. Similarly, global tourism frameworks focus on carrying capacity but overlook visitor management in Creative Cities. To address this, the study proposes a localized framework for Chiang Mai's creative communities. VMAT plays a vital role by enabling impact monitoring, supporting heritage preservation, aligning with SDGs, and guiding adaptable visitor strategies. It also enhances communication, identifies training needs, and fosters inclusive collaboration among stakeholders (APEC, 2023).

Table 4 The Summary of the Literature Review

Topic	Sustainable stakeholder	Visitor management	Economic management	Cultural management	Environmental management
The Visitor Management Assessment Tool (VMAT)		✓	✓	✓	✓
The Global Sustainable Tourism Council (GSTC)	✓		✓	✓	✓
Tourism Carrying Capacity		✓		✓	✓
Impact management	✓	✓	✓	✓	✓

The Conceptual Research Framework

METHODOLOGY

Quantitative research to identify the indicators of sustainable creative cities and visitor management for tourism community development with the participation of the government sector, private sector, and society organization sector in Chiang Mai.

Population and sample

A total of 57 indicators across five dimensions were examined in this study. Based on the 10:1 subject-to-item ratio recommended by Bentler & Chou (1987), a sample size of 570 stakeholders was selected for the Exploratory Factor Analysis (EFA). The sample included stakeholders from three key sectors in Chiang Mai's creative district: the public sector, private sector, and people sector. The indicators comprised 9 for stakeholder management, 10 for visitor management, 13 for economic management, 10 for cultural management, and 15 for environmental management.

Research Instrument

A structured questionnaire was developed to measure 57 sustainability indicators across five dimensions: stakeholder, visitor, economic, cultural, and environmental management. It comprised three sections: (1) demographic information, (2) items rated on a 5-point Likert scale, and (3) open-ended suggestions. The instrument's validity and reliability were confirmed through Item-Objective Congruence (IOC = 0.92) and Cronbach's alpha ($\alpha = 0.96$), both exceeding acceptable thresholds. Data analysis included descriptive statistics and Exploratory Factor Analysis (EFA). The questionnaire was approved by a human ethics committee.

Data Collection

Data were collected over a 3-month period (March–May 2023) using stratified purposive sampling to ensure diverse representation from Chiang Mai's public, private, and people sectors. Questionnaires were distributed both online and onsite, with field researchers assisting rural respondents for clarity. Instruments were pre-tested for reliability (IOC and Cronbach's alpha), and stakeholder mapping was conducted in collaboration with the Chiang Mai Creative City Coordination Center. To enhance data quality, follow-up interviews and random cross-checks were performed. Exploratory Factor Analysis (EFA) was used to uncover latent constructs across 57 variables, suitable for the study's exploratory aim. Potential bias was mitigated through triangulation, although causality cannot be inferred—suggesting future research use CFA or SEM for model validation.

Data Analysis

Data were analyzed using SPSS, applying descriptive statistics (frequency, percentage, mean, and standard deviation). Exploratory Factor Analysis (EFA) was performed using Principal Component Analysis with Varimax rotation. Suitability was confirmed via KMO and Bartlett's Test of Sphericity, with factors retained based on eigenvalues >1 and factor loadings >0.50. Cross-loading items were excluded. Internal consistency was strong, with Cronbach's alpha ranging from 0.92 to 0.96. The sample size met the 10:1 subject-to-item ratio as recommended by Bentler & Chou (1987), ensuring robustness of the 57-item instrument.

RESULTS

Respondents' Profiles

The majority of participants were female (62.6%) and were over the age of 51 (35.26%). Regarding their educational background, a majority of the participants possessed a bachelor's degree (60.2%). The samples were most likely employed at the tourism community level (35.1%). The position of the samples was most likely entrepreneur level (36.8%). Most people had years of work more than 10 years (47%).

Descriptive Statistics

The mean scores and S.D. (standard deviation) of cultural management ($\bar{x}$ = 4.62), visitor management ($\bar{x}$ = 4.45), environmental management ($\bar{x}$ = 4.40), economic management ($\bar{x}$ = 4.37), and sustainable stakeholder management ($\bar{x}$ = 4.25) are in the rankings. Table 2 presents the mean scores and standard deviation of indicators.

Table 5 The Summary of Mean Scores and Standard Deviation

Indicators	$\bar{x}$	S.D.	Degree	Ranking
Sustainable stakeholder management	4.25	0.58	High	5
Visitor management	4.45	0.57	High	2
Economic management	4.37	0.66	High	4
Cultural management	4.62	0.52	High	1
Environmental management	4.40	0.53	High	3
Total	**4.42**	**0.57**	**High**	

Exploratory Factor Analysis (EFA)

Exploratory Factor Analysis (EFA) was used to identify relationships among variables and group them into factors based on shared properties. The analysis employed principal component extraction with Varimax rotation, retaining factors with eigenvalues > 1 and factor loadings > 0.50 (Hair et al., 2010). To assess data suitability, the Kaiser-Meyer-Olkin (KMO) measure and Bartlett's test of sphericity were applied. KMO values above 0.50 and significant Bartlett's results confirmed the adequacy of the dataset for factor analysis (Angsuchot et al., 2014).

Table 6 The Result of Exploratory Factor Analysis

Code/Indicator	Factor Loading	Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	Bartlett's Test of Sphericity		
			Approx. Chi-Square	df	Sig.
Sustainable Stakeholder Management		.705	2483.917	36	.000
Sus 1	.805				
Sus 2	.914				
Sus 3	.904				
Sus 4	.656				
Sus 5	.688				
Sus 6	.691				
Sus 7	.678				
Sus 8	.720				
Sus 9	.803				
Visitor Management		.754	2554.474	45	.000
Vis 1	.893				
Vis 2	.637				

Code/Indicator	Factor Loading	Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	Bartlett's Test of Sphericity		
			Approx. Chi-Square	df	Sig.
Vis 3	.678				
Vis 4	.825				
Vis 5	.792				
Vis 6	.848				
Vis 7	.843				
Vis 8	.831				
Vis 9	.795				
Vis 10	.597				
Economic Management		.826	6363.320	78	.000
Eco 1	.832				
Eco 2	.880				
Eco 3	.831				
Eco 4	.760				
Eco 5	.822				
Eco 6	.731				
Eco 7	.775				
Eco 8	.729				
Eco 9	.923				
Eco 10	.766				
Eco 11	.607				
Eco 12	.877				
Eco 13	.806				
Cultural Management		.900	6209.467	45	.000
Cul 1	.737				
Cul 2	.885				
Cul 3	.602				
Cul 4	.665				
Cul 5	.752				
Cul 6	.655				
Cul 7	.618				
Cul 8	.909				
Cul 9	.913				
Cul 10	.891				
Environmental Management		.931	10727.989	105	.000
Envi 1	.873				
Envi 2	.887				
Envi 3	.753				
Envi 4	.765				
Envi 5	.590				
Envi 6	.810				
Envi 7	.827				
Envi 8	.799				
Envi 9	.810				
Envi 10	.825				
Envi 11	.812				
Envi 12	.803				
Envi 13	.749				
Envi 14	.778				
Envi 15	.752				

Note: Sus 1-9 refers to the variable for sustainable stakeholder management, Vis 1-10 refers to the variable for visitor management, Eco 1-13 refers to the variable for economic management, Cul1-10 refers to the variable for cultural management, and Envi 1-15 refers to the variable for environmental management.
Table 6 shows the result of The Exploratory Factor Analysis (EFA) confirmed the validity of all five dimensions. Factor loadings ranged from 0.590 to 0.923, and KMO values exceeded the minimum threshold of 0.50, indicating sampling adequacy: Stakeholder management: loading = 0.656–0.914, KMO = 0.705, Visitor management: loading = 0.597–0.893, KMO = 0.754, Economic management: loading = 0.607–0.923, KMO = 0.826, Cultural management: loading = 0.602–0.913, KMO = 0.900, and Environmental management: loading = 0.590–0.887, KMO = 0.931
All Chi-square values were significant ($p < 0.001$), supporting the factor structure's appropriateness for further analysis.

Table 7 The Summary of Exploratory Factor Analysis

Dimension	**Factor Loading > 0.50**	**KMO > 0.50**	**Bartlett Test of Sphericity**			**Conclusion**
			Approx. Chi-Square	**df**	**Sig.**	
Sustainable stakeholder management	0.656 - 0.914	.705	2483.917	36	.000	Appropriate
Visitor management	0.597 - 0.893	.754	2554.474	45	.000	Appropriate
Economic management	0.607 - 0.923	.826	6363.320	78	.000	Appropriate
Cultural management	0.602 - 0.913	.900	6209.467	45	.000	Appropriate
Environmental management	0.590 - 0.887	.931	10727.989	105	.000	Appropriate

The Exploratory Factor Analysis (EFA) confirmed the validity of the indicator structure, with all retained indicators showing factor loadings ≥ 0.50 and KMO values > 0.50, meeting established thresholds for statistical reliability (Angsuchot et al., 2014; Taherdoost et al., 2022). Indicators below 0.50 were excluded to ensure robustness. Drawing from global frameworks such as VMAT, GSTC criteria, tourism carrying capacity, and impact management, the study synthesized indicators into five core dimensions relevant to sustainable creative city development in Chiang Mai. Sustainable stakeholder management includes governance, planning, monitoring, stakeholder engagement, risk management, and knowledge sharing. Visitor management encompasses governance systems, resource availability, visitor behavior, capacity development, and heritage interpretation. Economic management focuses on local employment, investment, infrastructure, economic contribution, and impact assessment. Cultural management involves intangible heritage protection, accessibility, visitor regulation, disaster response, and social integration. Environmental management covers conservation, sustainable resource use, pollution control, climate adaptation, and risk mitigation. These validated indicators provide a localized and practical framework for evaluating and guiding sustainable tourism development in UNESCO Creative Cities.

FINDINGS DISCUSSION

This study identifies five critical dimensions for guiding sustainable community-based tourism in Chiang Mai: sustainable stakeholder management, visitor management, economic management, cultural management, and environmental management. In sustainable stakeholder management, the most influential indicators were resident engagement (loading = 0.914) and visitor feedback (loading = 0.904), underscoring the need for participatory governance and integrated planning. Visitor management highlighted governance systems (0.893) and heritage interpretation (0.848), emphasizing structured strategies, stakeholder inclusion, and cultural preservation. In economic management, key indicators such as economic impact assessment (0.923) and visitor financial contribution (0.880) point to the importance of local job creation and investment while avoiding generic development that erodes cultural identity. Cultural management focuses on societal integration (0.913) and heritage access (0.909), stressing the need to embed cultural heritage in daily life and protect intellectual property. For environmental

management, waste management (0.887) and water conservation (0.873) emerged as top priorities, requiring shared responsibility and investment in green infrastructure.These findings reinforce prior studies by Lugastama (2015) and Huh et al. (2020) on the interlinkages between cultural and environmental sustainability in creative cities. The study applies UNESCO's Sustainable Creative City model to tourism communities through these five dimensions, aligning with successful practices in Kanazawa (Japan) and Barcelos (Portugal), where cultural capital and public-private collaboration foster inclusive and sustainable development. Uniquely, this study integrates UNESCO Creative City indicators with the GSTC-Destination Criteria, translating global frameworks into localized, measurable tools. The strong focus on visitor, cultural, and environmental management reflects community priorities like heritage preservation, governance, and resource stewardship. The findings provide practical guidance for training, investment, and policy while bridging global sustainability goals with local action through a replicable, stakeholder-driven model grounded in Exploratory Factor Analysis (EFA).

CONCLUSION

This study presents a validated, community-based framework of sustainable tourism indicators tailored for creative cities like Chiang Mai. It effectively bridges global standards—such as UNESCO and GSTC criteria—with local implementation, offering tools for self-assessment, strategic planning, and policy development. The five key dimensions—stakeholder, visitor, economic, cultural, and environmental management—each provide strategic insights for enhancing tourism sustainability. Notably, cultural management received the highest mean score ($\bar{x}$ = 4.62), reflecting the community's strong emphasis on preserving intangible heritage. Visitor management also emerged as a critical area, highlighting the need for capacity planning and heritage education. By operationalizing global frameworks into locally relevant indicators, the study moves beyond theory and contributes a practical, scalable model for UNESCO Creative Cities. It supports future comparative research and policy innovation in sustainable urban tourism governance.

Policy Recommendations

Based on the five-factor framework, this study recommends key actions for Chiang Mai and other creative cities to promote sustainable tourism. These include developing a city-level dashboard to track tourism impacts, integrating visitor management into community zoning based on capacity, and supporting community enterprises with financial and training resources. It also encourages cross-sector collaboration through stakeholder forums and the inclusion of cultural heritage education in tourism products. Policymakers should incorporate these indicators into local strategies and invest in training to build stakeholder capacity.

CONTRIBUTION

This study fills a key gap in sustainable tourism research within UNESCO Creative Cities by identifying five validated dimensions—stakeholder, visitor, economic, cultural, and environmental management—through Exploratory Factor Analysis (EFA). Unlike prior studies focused solely on economic or cultural elements, it offers an integrated framework tailored to community-based tourism. The research contributes a practical, scalable tool for self-assessment and policy planning, applicable to both local governance and international benchmarking. By aligning EFA-derived indicators with global standards, this model can inform sustainable tourism strategies in similar creative cities, such as Luang Prabang, Ubud, and Hoi An.

Limitations and Future Research

This study is limited by its focus on a single context—Chiang Mai—restricting broader generalization. While EFA was effective for identifying key dimensions, future research should apply CFA or SEM to validate the model in other settings. Further studies should examine longitudinal applications of the indicators, conduct comparative analyses across different UNESCO Creative Cities, and incorporate qualitative methods (e.g., ethnographic research, interviews) to deepen understanding of local socio-cultural dynamics in sustainable tourism.

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