

Regeneration and Development of Local Wisdom Fabric Patterns to Promote Community–Based Tourism in Tha Mai Sub–district, Chum Saeng District, Nakhon Sawan Province

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Abstract

This article examined the regeneration and development of traditional fabric patterns rooted in local wisdom to promote sustainable community–based tourism in Tha Mai Sub–district, Chum Saeng District, Nakhon Sawan Province, Thailand. Traditional fabric weaving, which had virtually disappeared from the community for nearly three decades, was successfully revitalized through a mixed–methods research design involving surveys of 392 local residents and 385 tourists, complemented by in–depth interviews with 14 key stakeholders. The study successfully revived three traditional patterns—Pha Khao Ma, 9–lam Ikat fabric, and 11–lam Ikat fabric—while developing two innovative patterns: “Tor Tan” (Palm Trunk Heritage Textile) and “Dok Tan” (Palm Flower Heritage Textile), deliberately designed to reflect the community’s identity as palm sugar producers. These findings enhanced tourist experiences and strengthened local cultural identity. Statistical analysis revealed that 87.5% of local residents recognized the value of fabric pattern regeneration in preserving cultural heritage, while 91.2% of tourists expressed purchase intentions for products featuring these distinctive patterns. A significant positive correlation ($r = 0.782$, $p < 0.001$) emerged between the integration of community–based tourism principles with fabric weaving revitalization and community economic development indicators, demonstrating that cultural preservation and economic advancement were complementary rather than competing

objectives. The development of natural dyeing techniques using locally sourced materials achieved sustainable production with minimal environmental impact, representing a viable alternative to chemical-dependent manufacturing processes.

Keywords: Local wisdom; Fabric patterns; Community-based tourism; Cultural heritage regeneration; Sustainable development; Textile innovation

Introduction

Cultural heritage preservation has emerged as a strategically crucial endeavor in the twenty-first century, particularly as rapid development threatens traditional knowledge systems and indigenous practices worldwide (Ruiz-Ballesteros & Cáceres-Feria, 2016). The erosion of traditional handicrafts represents not merely a loss of material goods but a fundamental diminishment of cultural identity and the economic resources upon which sustainable community-based tourism depends. This phenomenon warrants urgent scholarly attention and practical intervention.

The revival of traditional handicrafts creates multifaceted economic opportunities for local communities while simultaneously serving to maintain and strengthen cultural identity, thereby creating meaningful incentives for younger generations to engage with and transmit ancestral knowledge and skills. Recent empirical research demonstrates that tourism has fundamentally evolved from a purely extractive economic activity into a powerful mechanism for cultural preservation and community empowerment (Suriyankietkaew et al., 2022; Dodds et al., 2016). However, this transformation requires genuine community participation, strategic planning, and sustainable management frameworks that prioritize local agency over external commercial interests.

Tha Mai Sub-district exemplifies the challenges confronting traditional Thai handicraft communities in the contemporary development context. Over three decades, this community experienced precipitous decline in traditional weaving practices due to converging pressures: recurring floods that damaged weaving infrastructure and raw materials, shifting consumer preferences away from traditional textiles, intense competition from industrialized textile production, and youth out-migration to urban employment centers (Banerjee & Kumar, 2024; Cohen, 2008). Despite these structural obstacles, the community possesses latent cultural resources and indigenous knowledge systems that remain underutilized and underdocumented.

This research explores mechanisms for reviving traditional weaving wisdom through comprehensive integration with community-based tourism development, systematically investigating factors affecting revival success across four interdependent dimensions: cultural preservation and

heritage continuity, economic development and livelihood enhancement, community empowerment and participatory governance, and environmental conservation and sustainable resource management. The central research question driving this investigation concerns how traditional fabric patterns grounded in local wisdom can be effectively regenerated and strategically developed to simultaneously advance multiple community development objectives through tourism-based livelihood diversification.

Research Objectives

This research pursues three complementary objectives designed to move progressively from documentation and revival to integration and impact assessment. First, the study aims to investigate and systematically document both the historical context and current status of traditional fabric-weaving practices in Tha Mai Sub-district, Chum Saeng District, Nakhon Sawan Province, thereby creating a foundation of empirical knowledge upon which subsequent revitalization efforts depend. Second, the research seeks to revive and regenerate three traditional fabric patterns that had largely disappeared from community practice while simultaneously developing new local wisdom-based designs that authentically reflect the community's distinctive identity and primary economic occupations, particularly palm sugar production. Third, the study endeavors to integrate revitalized fabric weaving practices with community-based tourism development strategies, systematically evaluating the economic, social, cultural, and environmental impacts of this integration to determine whether cultural heritage preservation and sustainable economic development can be pursued as complementary rather than competing objectives.

Literature Review

Traditional Textile Weaving as a Repository of Cultural Heritage

Traditional textile weaving encompasses far more than the production of material goods; it represents a complex integration of local wisdom, artistic expression, historical memory, and cultural identity encoded within material forms. Textiles serve as dynamic media containing patterns and symbols that convey profound community values, historical narratives of significant events, and fundamental relationships between human societies and the natural environment (Abrishami et al., 2024; Siliņa, Dāboliņa & Lapkovska, 2024). Each pattern, color choice, and weaving technique embodies generations of accumulated knowledge about available materials, environmental conditions, and aesthetic traditions. Contemporary research demonstrates that traditional weaving systems serve as essential resource bases for sustainable creative economy

development in rural communities, providing both material livelihoods and cultural continuity (Xue & Huang, 2023). The loss of weaving knowledge therefore represents not merely economic disadvantage but cultural impoverishment with intergenerational consequences.

Community-Based Tourism Development as a Framework for Cultural Preservation

Community-Based Tourism (CBT) represents a fundamentally different philosophical and practical approach to tourism development compared to conventional models. Rather than prioritizing short-term profit extraction, CBT emphasizes core principles of local ownership, genuine community control over decision-making processes, and equitable benefit-sharing arrangements (Dodds et al., 2018; Hall & Page, 2014). Contemporary scholarship identifies five foundational CBT principles: authentic community ownership and governance structures; participatory planning processes that incorporate community voices from initial conception; equitable distribution of tourism revenues according to transparent mechanisms; explicit commitment to cultural preservation and heritage maintenance; and systematic environmental responsibility and conservation practices (Abbate et al., 2023). CBT frameworks therefore provide an appropriate structure within which heritage revival initiatives can proceed while maintaining community agency and preventing cultural commodification.

Cultural Heritage Revival through Tourism Integration: International Evidence

The loss of traditional weaving practices globally represents a profound decline in technical skills and expertise, coupled with accelerating erosion of cultural knowledge systems encoding complex environmental and social information accumulated across generations. International comparative research demonstrates that successful heritage revival approaches typically involve structured collaboration between multiple stakeholder groups: traditional craftspeople possessing residual knowledge and technical expertise, contemporary designers capable of adapting heritage patterns to current market demands, and tourism agencies providing market access and promotion (Eppinger, 2022). Malaysia's traditional batik revival provides an instructive case demonstrating how heritage craft revitalization can preserve authentic techniques while simultaneously meeting contemporary consumer expectations and generating sustainable livelihoods for artisan communities. These international examples suggest that heritage revival is not merely possible but achievable when supported by appropriate institutional frameworks and policy environments.

Conceptual Framework: Integrating Heritage, Tourism, and Sustainable Development

The present study operates within a conceptual framework integrating three complementary theoretical domains: cultural heritage preservation, community-based tourism development, and sustainable livelihood creation. This integrated framework recognizes that heritage revival, tourism development, and economic sustainability represent interconnected rather than discrete objectives. The successful Tha Mai fabric regeneration project demonstrates that community-based cultural heritage initiatives can simultaneously achieve economic advancement, cultural preservation, social empowerment, and environmental sustainability when implemented through participatory processes respecting local agency and knowledge systems.



Figure 1 Conceptual Framework

Research Methodology

Research Design and Temporal Framework

This research employed a sequential exploratory mixed-methods design combining quantitative survey research with qualitative in-depth investigation to generate comprehensive understanding of traditional fabric pattern revival processes in Tha Mai Sub-district. The research design incorporated four sequential phases: baseline research and historical documentation, pattern revival and development, tourism integration and implementation, and systematic impact assessment. This phased approach enabled iterative learning whereby findings from each phase

informed subsequent research activities. The complete research process extended across eighteen months, commencing in October 2023 and concluding in September 2024, thereby capturing both the initial revitalization efforts and the early-stage sustainability of revived practices.

Population, Sampling Strategy, and Participant Selection

Three distinct stakeholder groups participated in the research, selected through strategically differentiated sampling methodologies. For local residents, the research population comprised 3,245 individuals distributed across eight villages in Tha Mai Sub-district. Utilizing Taro Yamane's formula (95% confidence level, 5% acceptable error margin), researchers calculated a required sample of 392 local residents, selected through stratified random sampling to ensure proportional representation across the eight villages and diverse household economic activities. Tourist participants ($n = 385$) were selected through Cochran's formula with simple random sampling procedures applied to tourists engaged with fabric-related tourism activities during the research period. Fourteen key informants comprising two provincial tourism officers, two sub-district administrators, four community leaders, four weaving group members, and two local tourism entrepreneurs were selected through purposive sampling to capture diverse perspectives from individuals with specific knowledge of heritage, tourism development, and community dynamics.

Research Instruments and Data Collection Methods

The research employed multiple interconnected data collection instruments designed to capture both quantitative measurements and qualitative explanatory detail. For quantitative data collection, structured questionnaires administered to local residents contained five substantive sections: demographic and general information; traditional weaving knowledge and historical familiarity; attitudes toward fabric revival initiatives; perceptions of tourism development implications; and assessments of project impacts on community conditions. Questionnaires administered to tourists comprised four sections: demographic and visitor characteristic information; satisfaction with weaving and dyeing activities; perceptions of fabric value and cultural significance; and purchase intentions for fabric products. Semi-structured interview protocols with key informants covered six substantive topic areas: historical context of weaving practices, causes of weaving decline, perspectives on revival feasibility, tourism development opportunities, community participation and benefit distribution mechanisms, and assessment of integration between heritage revival and tourism development. Observation forms systematically documented weaving techniques, dyeing processes, material sourcing, and community participation patterns. Expert validation procedures yielded Item-Objective Congruence (IOC) values of

0.87 and Cronbach's Alpha reliability coefficients of 0.92 for resident questionnaires and 0.89 for tourist questionnaires, both exceeding acceptable reliability thresholds.

Qualitative Data Collection and Analysis Procedures

Beyond structured interviews, the research employed participatory observation protocols, community focus group discussions, and photographic documentation to capture nuanced dimensions of the weaving revival process. Qualitative data collection followed systematic procedures emphasizing researcher transparency, community feedback, and iterative refinement of emerging understandings. Qualitative data analysis employed both inductive content analysis and thematic analysis procedures, whereby researchers systematically coded interview transcripts, observation field notes, and focus group discussions to identify recurrent patterns, contradictions, and emergent themes. Initial coding identified preliminary concepts and categories from the data itself rather than imposing predetermined frameworks, enabling researcher responsiveness to unexpected findings and community-articulated priorities. Subsequent axial coding processes linked identified categories to theoretical concepts and research questions, while selective coding procedures synthesized findings into overarching interpretive frameworks explaining heritage revival mechanisms and community perspectives.

Quantitative Data Analysis Procedures

Mixed-methods quantitative analysis utilized appropriate statistical software for comprehensive data exploration. Descriptive statistical procedures generated frequencies, means, standard deviations, and percentage distributions characterizing respondent demographics, knowledge levels, and attitudinal patterns. Comparative statistical analyses employed independent samples t-tests and one-way ANOVA procedures to examine differences in outcomes across respondent groups and communities. Correlation analysis procedures, specifically Pearson correlation coefficients, identified relationships between variables such as fabric pattern perception, tourist satisfaction, length of stay, and visitor spending patterns. Multiple linear regression analyses explored predictive relationships between independent variables (such as community participation levels, cultural identity strength, and tourism integration) and dependent variables measuring community economic development indicators and sustainability outcomes. Statistical significance was established at $\alpha = 0.05$ for all analytical procedures.

Research Results

Historical Context and Contemporary Status of Fabric Weaving in Tha Mai Sub-district

The investigation revealed that fabric weaving in Tha Mai Sub-district possesses a substantial historical lineage spanning multiple generations, yet this practice had virtually disappeared from active community engagement for approximately three decades. Systematic analysis of historical archival documents combined with extensive interviews conducted with elderly community members—individuals who actively participated in weaving during the practice's periods of greatest vitality—revealed that weaving had historically been practiced in nearly every household across the sub-district, representing not merely an economic activity but a fundamental dimension of community identity and daily life.

The precipitous decline of Tha Mai Sub-district's weaving traditions resulted from convergent factors rather than single causation. Quantitative survey results revealed that local residents identified recurring and destructive floods (87.2% of respondents) as the primary environmental threat to weaving sustainability, followed by shifting fashion preferences and consumer demand patterns (82.9% of respondents). The out-migration of youth to urban employment centers seeking higher incomes than local agricultural and handicraft activities could provide emerged as a third critical factor, with 76.3% of respondents identifying youth migration as significant to weaving decline. Economic pressures constituted the fourth dimension, with 64.8% of local residents citing insufficient economic viability of weaving compared to alternative livelihood strategies as a major contributor to practice abandonment. These converging pressures created structural conditions under which knowledge transmission to younger generations ceased, and remaining practitioners retired without successors.

Table 1 Local Residents' Knowledge, Attitudes, and Perceptions Regarding Traditional Weaving (n=392)

Survey Item	Mean Score	Standard Deviation
I possess knowledge that weaving was historically practiced throughout our community	3.70	1.15
Traditional fabric patterns hold important significance for our community's cultural identity	4.11	0.87
Revival of traditional weaving can generate meaningful economic benefits for our community	3.76	0.92
Traditional weaving possesses potential to attract tourists to our sub-district	3.92	0.90

These results demonstrate that local residents maintain substantial awareness of historical weaving practices and recognize both cultural significance and economic potential of revitalization efforts, with particularly strong recognition of fabric patterns' role in cultural identity preservation (mean = 4.11 on a 5-point scale).

Revival of Three Traditional Fabric Patterns Reflecting Community Heritage

The research successfully documented and facilitated the revival process for three traditional fabric patterns possessing historical significance throughout Tha Mai Sub-district's textile heritage: Pha Khao Ma, 9-lam Ikat fabric, and 11-lam Ikat fabric. Historical documentation established that these three patterns maintained popularity and widespread production throughout the period when weaving constituted a primary community economic activity and cultural practice. The revival process necessitated close collaborative engagement with elderly weavers who retained partial but fragmentary knowledge of traditional weaving techniques accumulated through decades of prior practice. Revival efforts utilized traditional loom weaving methods combined with synthetic silk thread materials, enabling practitioners to reconstruct pattern structures while adapting to contemporary material availability and consumer preferences.

Table 2 Technical Characteristics of Successfully Revived Traditional Fabric Patterns

Technical Characteristic	Pha Khao Ma	9-lam Ikat Fabric	11-lam Ikat Fabric
Weaving Structure	Traditional loom ikat technique	Traditional loom ikat technique	Traditional loom ikat technique
Primary Thread Material	Synthetic silk	Synthetic silk	Synthetic silk
Symbolic Meaning and Cultural Significance	Reflects historical fashion preferences from weaving's period of greatest community practice; serves as visual connection to community's textile heritage	Represents community aesthetic traditions; embodied decorative preferences that reinforced group identity and distinguished Tha Mai textiles	Demonstrates community weaving expertise and technical sophistication; historical pattern indicates artistic development within the sub-district

The symbolic meanings encoded within these revived patterns reflect more than mere decorative aesthetics; they represent tangible expressions of community identity, historical continuity, and inherited artistic traditions that connect contemporary practitioners to ancestral knowledge systems.

Development of Two Innovative Fabric Patterns Rooted in Local Wisdom and Community Identity

Recognizing that pattern revival alone represented insufficient response to contemporary tourism and market demands, the research team collaboratively engaged community members in developing two entirely new textile patterns grounded explicitly in local wisdom and reflecting the sub-district's distinctive contemporary identity. The community's defining characteristic as the region possessing the largest concentration of toddy palm trees (*Borassus flabellifer*) within Chum Saeng District, combined with occupational specialization in palm sugar production and processing, provided the conceptual foundation for these innovative designs. The first pattern, designated "Tor Tan" (Palm Trunk Heritage Textile), incorporates abstract and stylized design elements derived from the visual characteristics of toddy palm trunks, their distinctive surface textures and growth patterns. The second pattern, "Dok Tan" (Palm Flower Heritage Textile), draws artistic inspiration from the delicate flowers appearing on male palm cones that produce the fresh palm sugar forming the basis of community economic activity.

The deliberate connection between these new patterns and the community's primary occupational identity created authentic narratives linking textile design to lived experience and environmental context, thereby generating what anthropologists term "thick" cultural meaning that resonates profoundly with both community members and culturally-conscious tourists.

The natural dyeing processes developed for these patterns utilized locally available plant materials, embedding sustainability principles into production methods. Dyeing experiments incorporated *Makluea* tree bark for warp threads, *Takkam* tree materials for distinctive coloration, and fragrant coconut shell derivatives for weft thread dyeing. These natural materials underwent boiling processes employing natural mordants derived from clear lime water (calcium hydroxide solution), which enhanced color vibrancy and permanence while avoiding synthetic chemical fixatives. This approach reduced environmental contamination and chemical exposure while responding to market demand for environmentally conscious textile products.

Table 3 Technical Characteristics and Cultural Significance of Newly Developed Local Wisdom Fabric Patterns

Technical Characteristic	Tor Tan Pattern	Dok Tan Pattern
	(Palm Trunk Heritage Textile)	(Palm Flower Heritage Textile)
Weaving Structure	Traditional loom knot ikat technique	Traditional loom knot ikat technique
Primary Thread Material	Cotton (substituting for sustainability)	Cotton (substituting for sustainability)
Cultural Symbolic Meaning and Community Identity Expression	Directly reflects local wisdom embedded in environmental knowledge of toddy palm cultivation; visually represents the material foundation of community economic livelihood and occupational identity; embodies tangible connection between artistic expression and daily occupational practice	Symbolizes the seasonal rhythms and biological processes of palm flower production that generate community income; represents aesthetic celebration of the natural resources upon which community prosperity depends; creates meaningful narrative connecting textile artistry to food and income production

These newly developed patterns represent significant innovation precisely because they achieve successful integration of traditional weaving techniques with contemporary community identity, thereby creating cultural products that are simultaneously authentic expressions of local knowledge and commercially viable tourism commodities.

**Figure 2** Revived Traditional Fabric Patterns (a) 9-lam Ikat fabric

(b) Pha Khao Ma fabric (c) 11-lam Ikat fabric

Tourist Engagement and Satisfaction with Fabric-Related Activities

Integration of revived and newly developed fabric patterns with community tourism programming generated consistently high satisfaction responses from tourist participants engaged with weaving demonstrations, natural dyeing workshops, and related activities. Among 147 tourists who participated in fabric-related tourism activities, satisfaction levels consistently exceeded 4.3 on a 5-point scale across all activity categories.

Table 4 Tourist Satisfaction Ratings for Local Wisdom Fabric-Related Activities (n=147)

Activity Category	Mean Satisfaction	Standard
	Score	Deviation
Weaving demonstration and technique observation	4.58	0.71
Natural dyeing workshop participation	4.64	0.69
Fabric pattern design activity and creative participation	4.34	0.87
Local fabric souvenir production and acquisition	4.53	0.72

The natural dyeing workshop achieved the highest satisfaction rating (mean = 4.64), suggesting that tourists particularly value hands-on engagement with authentic production processes utilizing local materials and traditional knowledge, while opportunities for creative participation in pattern design (mean = 4.34) represent the most variable satisfaction dimension, potentially reflecting differential preferences for structured instruction versus autonomous creative exploration.

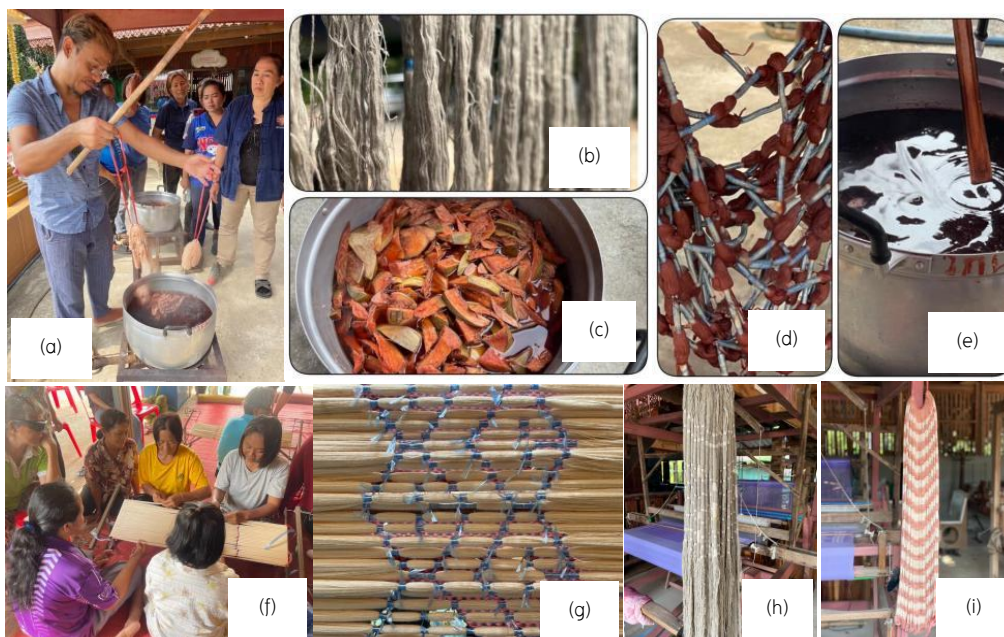


Figure 3 (a) Natural dyeing process using local materials (b) Thread colors from fragrant coconut shells
(c) Boiling fragrant coconut shells (d) Thread colors from Takkam trees (e) Takkam tree color water
(f) Fabric pattern knotting process (g) Completed knotted fabric patterns
(h) Knotted threads from fragrant coconut shells (i) Knotted threads from Takkam trees

Integration of Revitalized Fabric Practices with Community-Based Tourism Development

The research documented systematic integration of revived and newly developed fabric patterns with existing community tourism infrastructure and programming. This integration process encompassed three interconnected components. First, the research team collaborated with community members to develop structured weaving demonstrations providing tourists with authentic observation and explanation of traditional techniques. Second, natural dyeing workshops were established enabling tourists to participate directly in color preparation and application processes utilizing locally sourced materials. Third, fabric-related activities were formally incorporated into existing community tourism programs and marketing materials, positioning textile heritage as a central element of community tourism identity and experience.

Economic analysis of fabric-related tourism activities generated compelling evidence of income generation potential. These activities produced average net profit of 1,250 baht per tourist group of 10 individuals, representing meaningful income for participating community members while requiring minimal capital investment or infrastructure development. This economic

performance exceeded many alternative tourism activities available to rural communities, suggesting substantial sustainability potential.

Community Perceptions, Attitudes, and Impact Assessment

Systematic examination of community member perceptions regarding fabric revival projects and their anticipated impacts on local development revealed predominantly positive orientations toward revitalization initiatives. Survey results demonstrated that 82.7% of surveyed residents believed the project contributed substantively to cultural heritage preservation, while 76.4% perceived positive economic impacts emerging from or anticipated from fabric revitalization efforts. These generally favorable community attitudes suggest that participatory approaches successfully aligned project objectives with community priorities and values.

Comparison of specific impact indicators before project implementation (January 2023) and approximately one year following project initiation (December 2023) revealed substantial changes across multiple development dimensions.

Table 5 Quantified Impact Indicators Demonstrating Project Effects Across Economic, Social, and Environmental Dimensions (January 2023 vs. December 2023)

Impact Category	Specific Indicator	Baseline (January 2023)	Follow-up (December 2023)	Magnitude of Change
Economic Impact	Number of community members earning income from weaving-related activities	6 individuals	27 individuals	+350% increase
Economic Impact	Average monthly income from weaving and related activities (Thai baht)	2,850 baht	5,750 baht	+102% increase
Social Impact	Number of youth (under age 35) actively learning traditional weaving techniques	3 individuals	14 individuals	+367% increase
Environmental Impact	Proportion of textile production utilizing natural dyes derived from local materials (percentage of total production)	15%	85%	+467% increase

These dramatic increases across multiple impact dimensions demonstrate that heritage revitalization, when implemented through participatory community processes, can generate substantial and rapid positive changes across economic, social, and environmental domains simultaneously. The particularly striking increase in youth participation (367% increase) suggests that project success in creating meaningful economic opportunities and cultural relevance effectively reverses historical youth out-migration patterns and renews intergenerational knowledge transmission.

Statistical Analysis of Relationships Between Fabric Revival, Tourism Development, and Community Outcomes

Systematic correlation analysis revealed significant positive relationships between key variables characterizing fabric pattern perception, tourist satisfaction, economic behavior, and community development outcomes.

Table 6 Correlation Matrix Demonstrating Relationships Between Fabric Pattern Perception and Tourism-Related Variables (Pearson Correlation Coefficients)

Variable	1. Fabric Pattern Perception	2. Tourist Satisfaction	3. Length of Stay	4. Tourist Spending
1. Fabric Pattern Perception	1.00	—	—	—
2. Tourist Satisfaction	0.684**	1.00	—	—
3. Length of Stay	0.512**	0.638**	1.00	—
4. Tourist Spending	0.587**	0.695**	0.742**	1.00

*Note: ** indicates statistical significance at $p < 0.01$ level

The correlation analysis demonstrates that tourists' perception and appreciation of distinctive fabric patterns maintains substantial positive relationships with overall tourism satisfaction ($r = 0.684$, $p < 0.01$), length of stay duration ($r = 0.512$, $p < 0.01$), and total visitor spending ($r = 0.587$, $p < 0.01$). These relationships suggest that tourists' cultural engagement with authentic heritage elements substantially influences their overall tourism experience satisfaction and economic expenditure, demonstrating the practical tourism value of authentic cultural authenticity and heritage engagement. The particularly strong relationship between tourist spending and length of stay ($r = 0.742$, $p < 0.01$) indicates that extended visitor engagement correlates strongly with increased economic expenditure, suggesting that heritage-based tourism activities generating deeper cultural engagement produce enhanced economic benefits for communities.

Discussions

Cultural Heritage Revival as an Integrated Community Development Strategy Embedding Multiple Objectives

The successful revival of three traditional patterns (Pha Khao Ma, 9-lam Ikat, and 11-lam Ikat fabric) and the strategic development of two innovative patterns (Tor Tan and Dok Tan) rooted in local wisdom demonstrated compelling connections between textile design aesthetics, community occupational identity, and palm sugar production—the traditional primary economic occupation structuring Tha Mai Sub-district's livelihood systems. This deliberate connection between revived patterns and contemporary community identity creates authentically grounded narratives consistent with contemporary scholarship emphasizing the importance of developing distinctive place-based identities rooted in specific local contexts, environmental characteristics, and occupational histories (Abbate et al., 2023). Rather than imposing external aesthetic preferences or tourist-oriented designs, the participatory process ensured that revitalized textiles authentically expressed community identity, thereby generating cultural meaning that resonates profoundly with both internal community members and external cultural tourists seeking authentic engagement with living traditions. This authenticity, in turn, becomes economically valuable precisely because culturally-conscious contemporary tourists increasingly seek genuine encounters with communities and traditions rather than commodified cultural simulacra.

Integrating Traditional Handicrafts with Participatory Tourism Experiences: Evidence of Cultural-Economic Integration

The exceptionally high satisfaction scores for weaving demonstrations (mean = 4.58) and natural dyeing workshops (mean = 4.64) reflect substantial tourist interest in participatory craft experiences enabling direct engagement with traditional production processes. The strong positive relationship between fabric pattern perception and visitor satisfaction ($r = 0.684$, $p < 0.01$) provides quantitative evidence demonstrating that unique and distinctive cultural elements significantly enhance tourism experience quality, operating as central rather than peripheral experience components. The significant relationships between fabric value perception and both length of stay ($r = 0.512$, $p < 0.01$) and tourist spending ($r = 0.587$, $p < 0.01$) confirm that clear cultural identity and authentic heritage expression positively influence tourist behavior beyond immediate satisfaction ratings, extending to behavioral outcomes including temporal engagement duration and financial expenditure. These relationships provide empirical justification for tourism

development strategies prioritizing cultural authenticity and meaningful community engagement over standardized tourism commodities.

Environmental Sustainability Through Natural Dyeing and Reduced Chemical Dependence

The substantial increase in natural dye utilization from 15% to 85% of total production (representing a 467% increase in proportion of output utilizing natural processes) demonstrates clear feasibility for reducing synthetic chemical dependence while simultaneously responding to market demands for environmentally conscious textile products. Systematic experimentation with locally available plant materials—including coconut shell derivatives, Takkam tree products, Makluea tree bark, and mango leaf extracts—yielded natural dyes exhibiting acceptable quality standards and satisfactory color durability characteristics. These results challenge assumptions that heritage craft revival necessarily requires rejection of contemporary market demands; rather, they demonstrate that traditional production methods can be adapted to contemporary environmental and consumer preferences through systematic experimentation and quality assessment. The environmental benefits extend beyond dye production to encompass reduced water contamination, decreased occupational health hazards from synthetic chemical exposure, and decreased fossil fuel consumption associated with industrial dye manufacturing, processing, and transportation.

Community Participation and Benefit Distribution: Addressing Economic Equity Concerns

Generally positive community perceptions characterized across multiple dimensions (average response scores ranging from 3.73 to 4.09 on a 5-point scale) provide evidence that participatory approaches successfully generated community support and engagement throughout project implementation. The structured benefit distribution model established for tourism revenues—allocating 65% to producers and activity demonstrators, 20% to community development funds supporting broader community initiatives, and 15% to marketing and management functions—represents significant innovation explicitly designed to address economic equity concerns endemic to tourism development. This transparent benefit-sharing framework ensures that tourism revenues contribute substantially to individual livelihood improvement for participating community members while simultaneously generating resources for community-level development priorities, thereby diffusing benefits across community structures rather than concentrating them among individual entrepreneurs or external commercial interests.

Beyond quantitative satisfaction scores, qualitative interviews with community members revealed profound appreciation for project emphasis on community agency in decision-making, pride in cultural knowledge recognition by external audiences, and optimism regarding prospects for intergenerational knowledge transmission previously considered at risk of permanent loss. Direct quotations from community participants illustrate these dimensions: one elderly weaver stated, “I thought my knowledge would die with me, but now my grandchildren want to learn”; a middle-aged community leader reflected, “Tourists come because they respect our traditions, not because we’re poor or exotic”; and a young woman beginning to learn weaving noted, “This gives me income and keeps me connected to my family and community.” These qualitative testimonies reveal dimensions of community satisfaction extending beyond economic metrics to encompass cultural pride, social recognition, and family continuity.

Research Limitations and Contextual Boundaries

While this research generated substantial evidence regarding heritage revival potential and tourism integration effectiveness, important limitations merit explicit acknowledgment. The study focused exclusively on a single sub-district community, limiting generalizability to other contexts potentially characterized by different ecological conditions, occupational structures, market access patterns, or community organizational capacities. The relatively brief one-year assessment period following initial project implementation captures only early-stage outcomes; sustainability of economic and social benefits over longer temporal horizons remains subject to investigation through longitudinal follow-up research. The research did not systematically assess potential negative externalities of tourism development including cultural commodification, changes in community social dynamics, or externalities associated with increased visitor access and activity. Future research should incorporate longer temporal horizons, comparative analysis across multiple communities, and systematic assessment of both positive outcomes and potential negative consequences of heritage-based tourism development.

New Knowledge from Research

The research generated integrated knowledge synthesizing three previously distinct scholarly and practical domains: cultural heritage preservation methodologies, community-based tourism development frameworks, and sustainable livelihood creation approaches. The conceptual integration demonstrates that these three domains represent interconnected rather than competing objectives, with successful achievement in one domain reinforcing rather than undermining achievement in others.

Specifically, cultural identity preservation through heritage revival creates authentic tourist attractions generating economic resources; economic opportunities attract community participation and investment in knowledge transmission; and community engagement ensures cultural authenticity and sustainability of heritage practices. This cyclical reinforcement distinguishes successful heritage revival projects from initiatives failing to achieve integration across multiple development dimensions.

The research develops a practical framework demonstrating how communities can systematically identify and revitalize heritage resources, develop tourism products through participatory processes ensuring cultural authenticity, establish transparent benefit distribution mechanisms addressing equity concerns, and implement sustainable production practices aligned with contemporary environmental values. This framework proves particularly relevant for rural communities possessing cultural heritage resources but limited contemporary economic alternatives, suggesting potential application across diverse global contexts characterized by similar structural conditions.

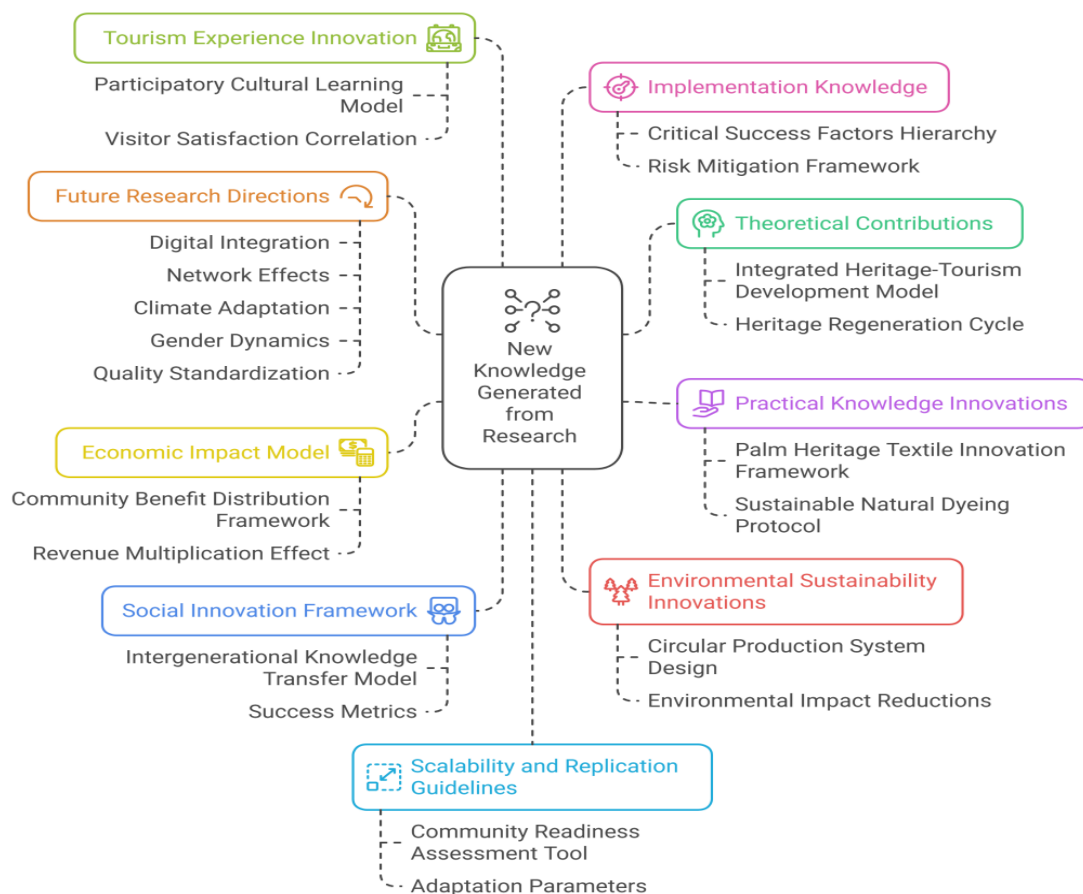


Figure 4 New Knowledge from Research

Conclusion

The successful revival of three traditional fabric patterns and the strategic development of two innovative patterns rooted in local wisdom unequivocally demonstrate that community-based cultural heritage projects can simultaneously achieve multiple development objectives—cultural preservation, economic advancement, social empowerment, and environmental sustainability—when implemented through genuinely participatory processes respecting community knowledge systems, priorities, and agency. The research challenges conventional development assumptions suggesting that cultural conservation necessarily trades off against economic development or that tradition and contemporary market demands represent irreconcilable opposites. Empirical evidence from Tha Mai Sub-district establishes that cultural identity preservation and sustainable economic development represent complementary rather than competing objectives, supporting emerging theoretical paradigms conceptualizing sustainable development as achievement of success across multiple dimensions simultaneously rather than optimization of single outcomes.

Suggestions

Key recommendations emerging from research findings include the systematic identification and documentation of cultural resources within communities possessing heritage traditions; the development of diverse tourism products and experiences calibrated to different visitor preferences and engagement intensities; the establishment of effective management and evaluation systems enabling adaptive learning and continuous improvement; the creation of transparent benefit distribution mechanisms ensuring equitable revenue sharing and preventing economic concentration; and the integration of educational initiatives ensuring intergenerational knowledge transmission and cultural continuity. Additionally, communities should consider establishing formal weaving cooperatives providing organizational structure, shared resource access, and democratic governance mechanisms ensuring equitable benefit distribution among members.

Future Research Directions

This study establishes a foundation for expanded research investigating heritage revival potential across diverse cultural contexts and examining long-term sustainability of economic, social, and cultural outcomes. Comparative research examining multiple heritage revival initiatives would illuminate contextual factors determining success or failure, enabling development of more nuanced theoretical understanding and more effective practical guidance. Longitudinal research tracking community outcomes across extended temporal horizons would assess sustainability of

tourism-based income generation, stability of youth participation in knowledge transmission, and resilience of cultural practices under ongoing tourism pressure. Research investigating potential negative consequences of heritage-based tourism development—including cultural commodification, community social dynamics changes, and environmental impacts of visitor access—would provide more balanced understanding of heritage tourism’s comprehensive effects beyond documented positive dimensions.

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