

Frugal Innovation as a Strategy for MSME Resilience in Community-Based Tourism: A Conceptual Review

Faridah Shariyah binti Sharuddin, Rohayu binti Roddin

Faculty of Technical and Vocational Education, University Tun Hussein Onn Malaysia

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ABSTRACT

Frugal innovation has emerged as a viable strategy for Micro, Small, and Medium Enterprises (MSMEs) operating within community-based tourism (CBT), particularly in rural and resource-constrained environments. The COVID-19 pandemic has further highlighted the vulnerability of these enterprises, reinforcing the need for resilience strategies that are cost-effective, sustainable, and contextually relevant. This conceptual paper explores the potential of frugal innovation in enhancing the resilience of MSMEs in CBT. Drawing on the Resource-Based View (RBV) as a theoretical framework, the paper proposes a conceptual model that links internal capabilities, such as local knowledge, creativity, and social capital, with adaptive and affordable innovation practices that support enterprise sustainability. This study provides a foundation for future empirical research and offers practical insights for policymakers and development agencies interested in empowering grassroots tourism enterprises through innovation.

Keywords: Frugal Innovation, MSMEs, Community-Based Tourism, RBV, Resilience

INTRODUCTION

Micro, Small, and Medium Enterprises (MSMEs) have long been acknowledged as vital contributors to socio-economic development, particularly in developing countries [1], [2]. In the context of community-based tourism (CBT), MSMEs play a central role by offering culturally rich and locally embedded tourism experiences such as homestays, traditional cuisine, handicrafts, and guided cultural tours [3], [4]. These offerings not only support economic livelihoods but also help preserve local heritage and promote inclusive growth within communities. [5], [6]

However, the operational environment for MSMEs in rural CBT settings remains fragile. These enterprises face numerous constraints including limited access to financial capital, inadequate infrastructure, low digital literacy and minimal institutional support [7], [8]. These vulnerabilities were exacerbated during the COVID-19 pandemic, which disrupted travel, closed borders, and decimated tourist arrivals globally [5], [8], [9], [10]. In Malaysia alone, the tourism sector recorded a significant decline in revenue, with rural-based enterprises among the hardest hit [11]. This has heightened the urgency to explore strategies for enhancing the resilience and adaptive capacity of MSMEs in CBT.

While mainstream innovation often relies on high-tech solutions and substantial investment, such approaches are frequently impractical for grassroots enterprises. In contrast, frugal innovation offers a promising alternative. Defined as the process of developing low-cost, resource-efficient solutions that deliver value under conditions of scarcity, frugal innovation aligns well with the realities of MSMEs in rural CBT contexts. It emphasizes simplicity, affordability, and adaptability factors critical for ensuring the continuity and competitiveness of small enterprises operating on limited means ([7], [12]).

This paper is motivated by two key observations. First, there is a growing recognition of the need for resilient tourism systems that can withstand economic, environmental, and social shocks [13]. Second, despite the increasing discourse on frugal innovation, its application within the CBT sector remains underexplored, particularly from a theoretical standpoint that links internal enterprise resources with innovative practices.

To address this gap, this conceptual paper draws upon the Resource-Based View (RBV) theory, which posits that sustainable competitive advantage is rooted in the firm's unique internal resources and capabilities [14], [15], [16]. In the context of MSMEs, resources such as local knowledge, creative problem-solving, and community networks can serve as critical enablers of frugal innovation. By synthesizing literature across MSME resilience, frugal innovation, and CBT, this paper aims to:

1. Theoretically frame frugal innovation as a resilience strategy for MSMEs in CBT.
2. Identify key internal capabilities that enable MSMEs to innovate under resource constraints.
3. Propose a conceptual model that links frugal innovation processes with enterprise-level resilience outcomes.

Through this lens, the paper contributes to ongoing scholarly conversations on tourism resilience and inclusive innovation while offering practical implications for policymakers, development practitioners, and grassroots entrepreneurs.

LITERATURE REVIEW

MSMEs and Community-Based Tourism (CBT)

MSMEs are widely acknowledged as the backbone of community-based tourism, often credited for stimulating local economic development and safeguarding cultural heritage [17], [18]. These enterprises contribute a diverse array of services ranging from accommodation (e.g., homestays) and food and beverage (e.g., local delicacies) to transportation, traditional performances, and artisanal crafts [5], [17]. However, while existing literature often celebrates this diversity, it tends to idealize the MSMEs' embeddedness in the local community without critically examining the operational tensions that arise from balancing authenticity with economic sustainability [5], [17], [18], [19].

The evolution of CBT as a counter-model to mass tourism has further magnified the strategic importance of MSMEs, particularly in localizing tourism benefits and preventing economic leakages [17], [19]. CBT is theoretically grounded in participatory development, equity, sustainability, and cultural sensitivity principles that implicitly place significant demands on MSMEs to function not only as businesses but also as custodians of socio-cultural values. Yet, this dual role is rarely problematized. Despite their central role, MSMEs are often situated within fragile institutional ecosystems, characterized by policy fragmentation, fluctuating market demand, and infrastructural deficits [7]. These vulnerabilities are not just operational constraints; they signal a deeper structural imbalance that undermines the very ideals of CBT unless deliberate resilience-building interventions are put in place.

Resilience in MSMEs

Resilience, within the MSME context, is commonly defined as the enterprise's capacity to anticipate, absorb, recover from, and adapt to various internal and external disruptions [17], [18], [19]. While this definition appears comprehensive, it often lacks contextual nuance when applied to tourism-based MSMEs, whose vulnerabilities are compounded by seasonality, informality, and resource scarcity. Crises such as economic downturns, environmental degradation, technological shifts, and health emergencies like the COVID-19 pandemic further expose the structural fragilities embedded within these enterprises. Yet, prevailing literature tends to generalize resilience frameworks without sufficiently considering the sector-specific and place-based dimensions of MSMEs in tourism [20], [21].

In this context, resilience must be viewed not merely as a firm's ability to withstand crisis but as a dynamic process of transformation that allows it to remain viable and competitive in post-crisis environments. Traits commonly associated with resilient MSMEs such as adaptive leadership, product diversification, strong community ties, and proactive risk governance are crucial, but they are not equally accessible across all enterprise contexts [19], [20], [21]. CBT-based MSMEs exhibit considerable heterogeneity in terms of digital literacy, financial capacity, entrepreneurial experience, and access to institutional support. For example, while some operators may actively use social media for marketing or collaborate with tourism boards, others rely solely

on word-of-mouth or have minimal exposure to formal training opportunities [17]

This disparity stems from intersecting factors such as age, education, gender roles, and location-specific infrastructure, which often determine whether MSMEs can pivot or innovate effectively during disruptions. Acknowledging this uneven playing field is essential to ensure that resilience frameworks do not marginalize less-equipped entrepreneurs, especially in resource-scarce rural environments. Existing studies highlight that MSMEs with higher adaptive capabilities, such as the agility to reconfigure resources or exploit new revenue streams, are better positioned to recover [19], [22]. However, such capabilities are often contingent upon embedded social capital, which itself is shaped by local trust networks, informal institutions, and collective norms [19], [23].

Unfortunately, many resilience narratives treat social capital as a given, rather than a construct that must be nurtured thereby underestimating the systemic efforts required to build enterprise resilience from the ground up. Social capital, in this context, refers to the networks of relationships, trust, norms, and reciprocity that exist within a community and facilitate coordinated action among MSME actors [17]. It plays a crucial role in enhancing resilience by enabling information-sharing, resource pooling, and collective responses to disruptions. In CBT settings, social capital manifests through community-led tourism associations, informal support groups, or intergenerational knowledge exchange all of which contribute to a more cohesive and responsive enterprise ecosystem.

Frugal Innovation

Frugal innovation has emerged as a counter-narrative to the conventional view that equates innovation with high-cost technology and intensive R&D [17], [18], [19]. While it promotes ideals of simplicity, accessibility, and affordability, current literature often presents it as a universal solution without interrogating the contextual limitations or trade-offs involved. Rooted in grassroots practices such as India's *jugaad* system, frugal innovation involves the development of low-cost solutions using limited resources, frequently relying on locally sourced materials and non-traditional methods [12], [19], [20], [21]. However, this resource improvisation, while laudable, may sometimes be mistaken for makeshift or short-term fixes rather than strategic business practices raising questions about its scalability and long-term sustainability.

In the tourism sector, frugal innovation is frequently illustrated through examples such as the reuse of vernacular materials for eco-lodging, leveraging open-source digital platforms for marketing, and integrating indigenous knowledge into product offerings [22], [23], [24], [25]. Although these practices reflect creativity under constraint, few studies critically examine how such approaches impact perceived value or competitiveness in an increasingly experience-driven tourism market. Moreover, the celebrated informality of frugal innovation might inadvertently perpetuate the marginalization of MSMEs from formal innovation ecosystems, limiting their access to funding or technical support.

The relevance of frugal innovation is most pronounced among MSMEs in rural and semi-urban areas, where financial and infrastructural barriers are prominent. While it is often portrayed as a panacea for structural disadvantage, there is limited discussion on the risks of over-reliance on frugality, particularly when it compromises quality or limits scalability [7], [18]. Its grassroots nature and cultural embeddedness certainly make it attractive for CBT contexts, where inclusivity and local ownership are core values. However, without mechanisms to formalize or support these innovations, their transformative potential may remain underutilized. Institutional constraints remain a major challenge to the scalability of frugal innovations in community-based tourism. In many rural regions, MSMEs operate without structured support systems, clear regulatory guidelines, or long-term development policies that recognize frugal practices as legitimate forms of innovation. This absence of formal recognition limits their access to funding, mentorship, and technical assistance [18], [19].

Additionally, growth potential is often stunted by fragmented policy environments and the lack of coordination between tourism authorities, local councils, and development agencies. For example, despite the proven success of informal digital marketing via WhatsApp or TikTok, few government programs provide tailored capacity-building modules that align with these grassroots realities. Without deliberate institutional engagement, many frugal innovations risk being dismissed as temporary stopgaps rather than viable long-term solutions [18].

Therefore, it is essential to position frugal innovation within a more supportive ecosystem—one that encourages experimentation, offers technical validation, and integrates local practices into formal tourism development plans. Therefore, a more nuanced approach is needed one that situates frugal innovation within broader systems of capability development and institutional support [18].

Research Gap

Despite increasing recognition of both frugal innovation and CBT, there is a clear lack of integrative frameworks that explore the nexus between frugal innovation, MSME resilience, and tourism development [20], [21]. Most existing studies tend to treat these constructs in isolation, failing to provide a cohesive explanation of how frugal innovation contributes to the long-term sustainability of community tourism enterprises. Moreover, empirical research that applies RBV to MSMEs in tourism remains limited, especially in non-Western contexts such as Southeast Asia [12], [20], [22], [23]. This suggests the need for more context-specific theoretical explorations that highlight indigenous capabilities and locally driven innovation.

THEORETICAL FRAMEWORK: RESOURCE-BASED VIEW (RBV)

The Resource-Based View (RBV) has long served as a foundational theory in strategic management, positing that sustainable competitive advantage stems from a firm's ability to harness internal resources that are valuable, rare, inimitable, and non-substitutable (VRIN) [16], [21]. While traditionally applied to large corporations, recent scholarship has attempted to reposition the RBV within the context of micro and small enterprises (MSEs), especially in emerging economies [22], [23], [24], [25]. However, this transposition is not without contention. The RBV's original formulation assumes a level of organizational stability and resource maturity often absent in MSMEs, particularly those operating in volatile tourism environments.

Nevertheless, within the realm of community-based tourism (CBT), the RBV offers a compelling, albeit underutilized, lens to analyze how MSMEs can convert indigenous and localized knowledge into strategic assets. Capabilities such as intimate familiarity with local culture and terrain, strong community linkages, artisanal skills, and creative improvisation are often dismissed in mainstream economic models for their lack of formal measurability [1], [7], [25], [26]. Yet, when assessed through the RBV, these informal and non-financial assets emerge as core differentiators especially in resource-constrained settings where conventional forms of capital are either inaccessible or misaligned with local realities.

Crucially, when frugal innovation is interpreted through the RBV perspective, it is repositioned from a survival mechanism to a strategic orientation. These reframing challenges deficit-based narratives that frame MSMEs as inherently disadvantaged and instead highlights their ability to convert constraints into opportunities through inventive use of internal resources [12], [25], [27], [28]. For instance, a rural homestay that integrates recycled materials and indigenous architectural styles is not merely engaging in cost-saving practices but is activating a form of value creation that is deeply embedded, difficult to imitate, and contextually unique hallmarks of the RBV's VRIN criteria.

Therefore, the RBV is not only theoretically relevant but also practically resonant for conceptualizing frugal innovation in tourism-based MSMEs. It moves the discourse beyond structural victimhood and repositions these enterprises as agile, knowledge-rich actors capable of sustaining cultural identity while driving economic participation. This perspective not only advances RBV's theoretical adaptability but also contributes to a more nuanced understanding of resilience and innovation at the community level.

CONCEPTUAL DISCUSSION

Frugal Innovation as a Capability-Building Strategy

Frugal innovation is not merely a reaction to scarcity or a utilitarian approach to “doing more with less”; rather, it constitutes a deliberate strategic mindset rooted in efficiency, contextual intelligence, and creative problem-solving [21], [22]. This perspective moves beyond romanticized notions of grassroots ingenuity and positions frugal innovation as a conscious, value-driven business orientation. In the context of community-based tourism

(CBT), such innovation manifests in diverse ways transforming discarded materials into marketable souvenirs, leveraging low-cost communication platforms like WhatsApp for service coordination, or converting underutilized village spaces into multifunctional tourism venues [3], [23], [24], [25], [26].

For instance, in Malaysia, frugal innovation has been observed among community-based tourism operators in rural districts such as Tangkak and Kundasang. Homestay entrepreneurs in Kuching, Sarawak, have creatively transformed aging wooden structures into low-cost eco-lodges using recycled materials and local craftsmanship. Meanwhile, CBT groups in Kundasang, Sabah, have adopted low-cost digital tools such as WhatsApp and Facebook to organize eco-tours, offer personalized culinary experiences, and communicate with guests effectively despite infrastructure limitations [24], [25]

These real-world practices illustrate how frugal innovation is already being operationalized at the grassroots level, validating the proposed conceptual framework. They also demonstrate the capacity of MSMEs to mobilize internal capabilities such as local knowledge, informal networks, and resourcefulness to generate value, reduce costs, and maintain resilience under resource constraints. These innovations challenge the dominant assumption that financial capital is the primary driver of innovation, instead revealing the critical role of resource recombination and environmental embeddedness.

For MSMEs, these practices do more than lower operational costs, they cultivate unique value propositions anchored in locality, authenticity, and environmental consciousness. As tourist preferences shift towards sustainable and experiential travel, frugal innovation becomes not just an operational necessity but a competitive differentiator [21], [27]. However, while such innovations are often celebrated for their creativity, there is limited discourse on the challenges of institutionalizing these practices within formal business structures, which could hinder scalability or long-term growth.

Rural MSMEs face layers of volatility from inconsistent tourist flows and supply chain disruptions to infrastructural deficits such as poor internet connectivity or limited skilled labor pools [28], [29]. In this landscape, frugal innovation operates as both a coping mechanism and a strategic pivot, offering agility in times of crisis. The COVID-19 pandemic offered a salient example: certain Malaysian homestay operators quickly adapted by offering virtual cultural experiences, developing online cooking classes, or shifting towards agritourism, initiatives that emerged not from surplus, but from necessity and ingenuity [21], [24], [30], [31].

Adaptive capacity is defined as the ability of an enterprise to adjust, reorganize, and evolve in response to external stressors while maintaining its core functions [26]. In rural MSME contexts, this may include actions such as shifting to agritourism, experimenting with new business models, or integrating digital tools for customer engagement despite minimal formal training. Frugal innovation often serves as a mechanism through which this capacity is activated especially under uncertain or unstable conditions.

These adaptive strategies underscore the dual role of frugal innovation as both innovation and resilience. They reveal how MSMEs actively mobilize embedded resources such as social capital, indigenous knowledge, and informal labor networks to maintain market relevance amidst turbulence [21], [32], [33], [34]. Yet, such agility is frequently under-theorized in tourism literature, which often overlooks the institutional and systemic support required to sustain these innovations beyond the crisis window. Thus, while frugal innovation enables operational survival, its full potential as a transformative force in CBT will depend on deeper structural integration and policy recognition.

A. Alignment with Community Values and Sustainability

Frugal innovation is inherently compatible with the values of CBT namely, environmental conservation, cultural preservation, and community participation [20], [27], [28], [29]. By utilizing local materials, minimizing waste, and relying on traditional knowledge, frugal innovation supports sustainability goals without requiring large-scale infrastructure or external intervention.

Moreover, because these innovations are often co-created with the community, they foster local ownership, skill development, and intergenerational knowledge transfer [27], [29], [30], [31], [32]. This not only strengthens the

social fabric but also builds long-term economic resilience within the community. Unlike externally imposed solutions, frugal innovations are more likely to be accepted, maintained, and adapted over time.

B. Social Creativity as a Driver of Innovation

In many rural and indigenous communities, social creativity defined as the collective ability to generate new ideas in response to shared challenges is a powerful driver of innovation [30], [33], [34], [35]. This is particularly true for women and youth, who often play pivotal roles in shaping tourism experiences that are inclusive, safe, and culturally sensitive [36], [37].

Social creativity can manifest in simple but impactful ways: a village youth group designing eco-tour packages, women organizing local food fairs, or elders curating oral history sessions for visitors. These initiatives may not involve advanced technology, but they represent context-driven innovations that respond to real community needs while enhancing visitor satisfaction [20], [21], [38], [39].

Proposed Conceptual Framework

Based on the literature synthesis and theoretical foundation of the RBV, this paper proposes a conceptual framework that positions frugal innovation as a key driver of MSME resilience within community-based tourism. The framework highlights the interaction between internal capabilities (e.g., cultural knowledge, creativity, social capital), external constraints (e.g., lack of infrastructure, limited access to funding), and innovation outcomes.

A. Core Components of the Framework

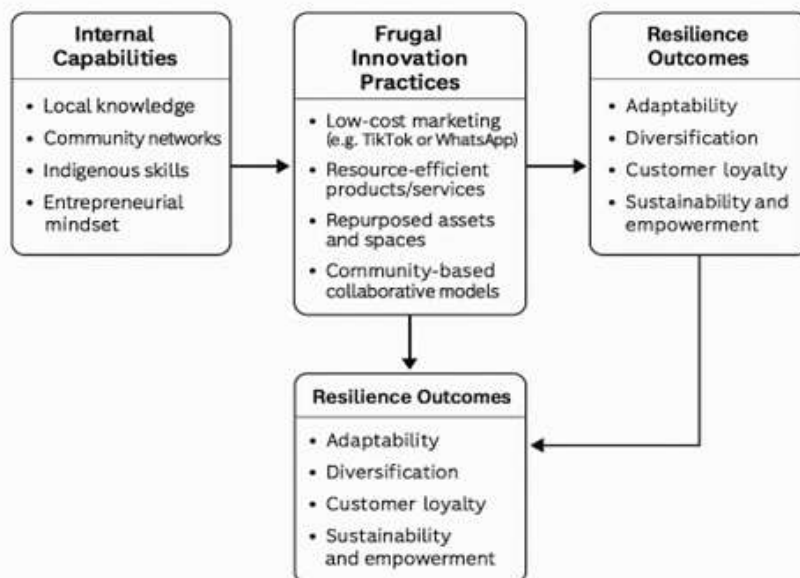


Figure 1: Proposed Conceptual Framework of Frugal Innovation for MSME Resilience in Community-Based Tourism

This conceptual framework offers a refined understanding of how MSMEs can strategically transform limitations into innovative capabilities. It underscores that resourcefulness, rather than resource abundance, serves as a critical foundation for achieving enterprise longevity, resilience, and sustainability—particularly in resource-constrained tourism environments.

Implications for Research and Practice

A. Academic Implications

This conceptual review contributes to theoretical scholarship in three main ways. First, it extends the application

of RBV to the domain of rural tourism, highlighting how non-conventional resources such as social capital and cultural knowledge can be sources of innovation. Second, it positions frugal innovation as a strategic rather than reactive process, thereby reframing how MSME capabilities are theorized. Third, it proposes an integrative model that links innovation to resilience in a way that is contextually grounded and highly relevant to developing economies.

Future empirical studies may test this framework across various tourism settings to validate its applicability and adaptability. Longitudinal studies could also examine how frugal innovations evolve and what contextual factors sustain or hinder their success.

B. Practical Implications

For practitioners, this paper suggests that frugal innovation should be incorporated into training, policy, and funding mechanisms. Development agencies, local governments, and tourism boards can support MSMEs by:

- Facilitating innovation labs or incubators that focus on low-cost, locally grounded solutions.
- Encouraging digital upskilling programs tailored to CBT entrepreneurs.
- Designing micro-financing schemes that reward frugal and sustainable practices.
- Promoting knowledge-sharing platforms among MSMEs to foster peer learning and creativity.

These initiatives can be further strengthened by integrating them into national or state-level policy instruments. For instance, the Rural Tourism Master Plan (RTMP) 2020–2030 under Malaysia's Ministry of Tourism, Arts and Culture outlines several programs that could be aligned with frugal innovation goals, such as Geran Galakan Melancong (GAMELAN) for CBT operators. Additionally, the SME Corp's Micro Connector Programme and Technology Commercialization Platform (TCP) can be repositioned to support low-tech, community-led tourism innovations that are currently overlooked. Specific training modules on digital frugal marketing or low-cost service innovation can also be embedded into existing Pelan Jana Semula Ekonomi Negara (PENJANA) initiatives for MSME recovery post-COVID-19 [40], [41]

Such alignment ensures that the transformative potential of frugal innovation is not only theorized but actively resourced and scaled through concrete, policy-driven mechanisms. By recognizing and nurturing the frugal innovation capabilities of MSMEs, stakeholders can help build a more inclusive, resilient, and sustainable tourism ecosystem.

CONCLUSION

In conclusion, this conceptual paper highlights the untapped potential of frugal innovation as a resilience mechanism for msme operating in the domain of community-based tourism. In the face of limited resources and constant uncertainty, frugal innovation offers msme a way forward one that aligns with community values, builds upon internal strengths, and fosters sustainability from the ground up.

By employing the resource-based view as a theoretical lens, the paper shifts the discourse from vulnerability to strategic resourcefulness, offering new insights into how rural enterprises can innovate, adapt, and thrive. This paper serves as both a scholarly contribution and a practical call to action for researchers, policymakers, and tourism practitioners who aim to empower the grassroots tourism economy through sustainable innovation.

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