

## Digital Transformation Strategy for Village-Based Tourism SMEs to Strengthen Sustainable Competitive Advantage

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### Abstract

*This study examines how village-based tourism Micro, Small, and Medium Enterprises (MSMEs) strengthen sustainable competitive advantage through digital transformation. Using a qualitative case study approach in Desa Wisata Baturraden, Indonesia, the research integrates Resource-Based View (RBV), Technology Acceptance Model (TAM), and sustainable competitiveness theory. Findings indicate that digital adoption—through smart tourism platforms, financial technology integration, and sustainability-driven branding—significantly enhances operational efficiency, global visibility, and environmental accountability. However, long-term competitiveness depends on ecosystem-level governance, innovation labs, and continuous digital capability development. The study contributes to the literature on digital transformation in tourism SMEs by proposing a Village Tourism Digital Hub model to accelerate sustainable digital maturity.*

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### INTRODUCTION

Tourism remains a critical driver of inclusive economic development, particularly in emerging economies where small enterprises dominate the sector. However, the rapid evolution of digital technologies has fundamentally transformed competitive dynamics. Digital transformation is no longer optional for SMEs but constitutes a strategic imperative for survival and long-term growth (Fatma et al., 2025; Siswanti et al., 2024).

Recent studies emphasize that digital capability enhances resilience, innovation performance, and global market access among SMEs (Merín-rodriq & Alegre, 2024). In the tourism sector specifically, digitalization improves customer engagement, operational coordination, and sustainability communication (Fatma et al., 2025). Moreover, smart

tourism technologies—including AI-based analytics, digital booking systems, and platform integration—enable resource optimization and environmental efficiency (Ferreira et al., 2022; Hokmabadi & Rezvani, 2024)

Village-based tourism SMEs face structural limitations, including restricted access to capital, limited digital literacy, and fragmented marketing systems. Nevertheless, integrating digital solutions with sustainability-oriented strategies significantly strengthens long-term competitiveness (Mandviwalla & Flanagan, 2021). Empirical research confirms that digital maturity positively correlates with sustainable performance indicators, including environmental responsibility and community empowerment (Pereira et al., 2022; Yu et al., 2025).

From a strategic perspective, sustainable competitive advantage emerges when firms effectively leverage unique local resources and combine them with technological innovation (Merín-rodrig & Alegre, 2024). In this context, Desa Wisata Baturraden provides an appropriate setting to explore how cultural authenticity, environmental uniqueness, and community-based tourism assets are integrated with digital transformation strategies.

This study aims to analyze how digital transformation—supported by ecosystem collaboration and sustainability orientation—strengthens global competitiveness among village-based tourism SMEs.

## **METHODOLOGY**

### **Research Design**

This study adopts a qualitative descriptive case study approach to explore how village-based tourism SMEs implement digital transformation strategies to achieve sustainable competitive advantage. A qualitative approach is appropriate because digital transformation is not merely a technological shift but a socio-organizational process shaped by managerial perception, contextual adaptation, cultural identity, and ecosystem dynamics. These dimensions require interpretive depth rather than numerical generalization.

The case study strategy enables an intensive investigation of real-world practices within their natural setting. Rather than testing predefined hypotheses, this research seeks to understand meaning-making processes, strategic reasoning, and pathways of capability development among SME actors. The focus is on explanation and interpretation, aiming to reveal how digitalization interacts with sustainability and local identity within a specific tourism ecosystem.

### **Research Context and Unit of Analysis**

The research was conducted in Desa Wisata Baturraden, Indonesia, a village-based tourism destination characterized by natural attractions, cultural assets, and community-driven enterprises. The site was selected purposively based on three considerations: active tourism operations, observable digital adoption among SMEs, and institutional collaboration involving local government and academic actors.

The unit of analysis consists of tourism SMEs operating within the village ecosystem, including homestay providers, culinary businesses, tour operators, and creative economy actors. Each SME is treated as an embedded case within a broader governance structure. This embedded case design allows examination of both intra-organizational digital practices and inter-organizational collaboration within the tourism ecosystem.

### **Data Collection**

Data collection relied on multiple qualitative techniques to ensure depth and contextual richness. First, semi-structured interviews were conducted with SME owners and tourism stakeholders. Interview questions explored digital adoption experiences, perceived challenges, sustainability initiatives, collaboration practices, and long-term strategic orientation. The semi-structured format allowed flexibility while maintaining thematic consistency across respondents.

Second, non-participant observations were conducted to document how digital tools were used in daily operations, including customer interactions, payment systems, marketing platforms, and sustainability communication. Observational data provided insights beyond verbal accounts, particularly regarding actual implementation practices. Third, document analysis was conducted of digital content (social media pages and online booking platforms), promotional materials, policy documents, and relevant institutional records. This triangulation of interviews, observations, and documents strengthens the credibility of findings and reduces reliance on single-source narratives.

### **Data Analysis**

Data analysis followed an iterative and inductive thematic approach. All interview transcripts and field notes were transcribed verbatim and coded using open coding techniques to identify emerging themes related to digital transformation, sustainability practices, ecosystem collaboration, and competitive positioning. Following open coding, axial coding was conducted to establish relationships among categories.

Themes were then organized within broader conceptual lenses: Resource-Based View (local strategic assets), digital transformation processes, sustainability orientation, and innovation ecosystem dynamics. This step does not impose rigid theoretical testing but allows theoretical dialogue between empirical findings and existing literature. Selective coding was subsequently employed to refine central narratives and construct an integrated explanation of how digital transformation contributes to sustainable competitive advantage. The analytical process was recursive, involving continuous comparison between field data and theoretical insights to ensure conceptual coherence.

### **Trustworthiness and Rigor**

To ensure credibility, methodological triangulation was applied through the integration of interviews, observations, and document analysis. Member validation was conducted by sharing summary interpretations with selected participants to confirm accuracy and minimize misinterpretation. Dependability was maintained through systematic documentation of research procedures, coding decisions, and analytical reflections. An audit trail was preserved to enhance transparency. Peer consultation with academic colleagues further strengthened analytical rigor by challenging assumptions and refining thematic interpretations. Confirmability was supported by maintaining reflexive notes to acknowledge the researcher's positionality and minimize bias. Transferability is addressed through thick description of context, enabling readers to assess applicability to similar tourism ecosystems.

### **Ethical Considerations**

Ethical standards were upheld throughout the research process. Participants provided informed consent prior to interviews, and confidentiality was strictly maintained through anonymization of identities and organizational details. Given the community-based nature of village tourism ecosystems, sensitivity toward reputational implications was prioritized. Findings are presented objectively and constructively, focusing on structural and strategic dimensions rather than personal evaluation.

## **RESULT AND DISCUSSION**

### **Result**

#### *1. Optimization of Local Strategic Resources*

Tourism SMEs in Desa Wisata Baturraden strategically anchor their business models in locally embedded resources, including cultural traditions, natural landscapes, and communal hospitality norms. These elements function as foundational assets that shape service design and customer experience. Interview data reveal that business owners perceive authenticity not only as a branding element but as a moral obligation to preserve local heritage while participating in the tourism economy.

The embeddedness of local resources influences decision-making processes. For example, culinary entrepreneurs prioritize sourcing ingredients from local farmers, not solely for economic efficiency but to maintain relational trust within the village network. Similarly, homestay operators emphasize cultural immersion experiences rather than standardized hospitality services. These practices reinforce social cohesion and generate reputational capital within the community.

Digital platforms amplify the strategic value of these resources. Through curated storytelling, SMEs frame local identity within global tourism narratives. Visual content showcasing traditional ceremonies, artisanal production processes, and natural scenery transforms cultural capital into digitally mediated value propositions. This process demonstrates that digital transformation enhances, rather than replaces, locally grounded competitive advantages.

#### *2. Gradual Digital Adoption*

Digital adoption in Baturraden reflects an evolutionary rather than revolutionary trajectory. SMEs typically begin with basic communication technologies before transitioning to more integrated systems. This staged progression aligns with experiential learning, in which practical benefits gradually reshape managerial attitudes toward technology.

Respondents frequently described digitalization as initially intimidating due to limited technical literacy. However, observable improvements in booking management and customer engagement gradually reduced uncertainty. The presence of peer support within the tourism community further normalized digital experimentation, fostering collective confidence in technological adoption.

Importantly, digital adoption reshapes organizational identity. As SMEs integrate online platforms, they begin to view themselves not merely as local service providers but as participants in broader digital marketplaces. This cognitive shift expands strategic horizons and encourages long-term thinking beyond seasonal tourism cycles.

#### *3. Smart Tourism Integration*

The integration of smart tourism elements enhances coordination across service providers. Real-time booking updates and digital mapping improve operational planning and reduce overlapping service offerings. This coordination strengthens ecosystem-level efficiency.

Smart systems also facilitate adaptive capacity. When fluctuations in tourist demand occur, SMEs can quickly adjust pricing strategies, promotional campaigns, and service bundles. Such responsiveness increases resilience in uncertain tourism environments.

Furthermore, smart tourism generates digital footprints that function as informal performance metrics. Online reviews and engagement statistics serve as qualitative feedback loops. SMEs actively interpret these signals to refine service delivery, indicating an emerging culture of data-informed decision-making within the village ecosystem.

#### *4. Sustainability-Oriented Digital Branding*

Sustainability is deeply integrated into branding narratives. SMEs consistently highlight eco-friendly packaging, local sourcing, and environmental stewardship in digital communications. These narratives resonate with tourists seeking ethical consumption experiences.

Beyond promotional messaging, sustainability practices influence operational routines. Waste management initiatives and energy-saving practices are embedded into daily activities. These practices are not externally imposed but arise from community norms emphasizing environmental preservation.

Digital storytelling strengthens legitimacy. By transparently communicating sustainability commitments, SMEs build trust with environmentally conscious travelers. This trust translates into repeat visits and positive word of mouth within digital communities.

#### *5. Ecosystem Collaboration and Innovation Support*

Collaboration among SMEs, academic institutions, and local authorities plays a critical role in enabling. Training workshops enhance digital literacy and encourage experimentation with new platforms. Participants emphasize that institutional mentorship reduces fear of technological failure.

Peer-to-peer learning within the village ecosystem fosters collective innovation. Informal discussions about marketing tactics, pricing models, and sustainability practices create a shared knowledge pool that strengthens overall competitiveness.

Institutional partnerships also enhance credibility. Being associated with recognized academic or governmental programs signals reliability to tourists and investors. This legitimacy strengthens long-term sustainability beyond immediate digital gains.

## **Discussion**

### *1. Digital Transformation as Resource Amplifier*

The findings suggest that digital transformation operates as a resource amplifier rather than a substitute for local assets. From an RBV perspective, digital platforms enhance the visibility and scalability of VRIN resources embedded within the village

context. Rather than standardizing offerings, digital tools contextualize authenticity within global consumption patterns (A & B, 2024).

This amplification process demonstrates the complementarity between tangible and intangible assets. Technology alone does not create advantage; instead, it magnifies pre-existing cultural and environmental uniqueness. This dynamic aligns with contemporary strategic management scholarship emphasizing capability integration.

Moreover, digital amplification supports intergenerational sustainability. Younger entrepreneurs often lead digital initiatives, while older community members safeguard cultural practices. This intergenerational synergy strengthens adaptive resilience.

## 2. *Sustainability as Strategic Differentiation*

Sustainability in Baturraden functions as a strategic differentiator rather than a compliance requirement. Digital communication transforms sustainability from internal practice into externally recognized brand value.

The integration of eco-friendly practices with digital branding reflects a shift toward value-based competition. Tourists increasingly interpret sustainability commitments as indicators of authenticity and ethical responsibility. This alignment enhances destination attractiveness (Cosa, 2026).

Additionally, sustainability-oriented digitalization fosters systemic resilience. By reinforcing local supply chains and environmental stewardship, SMEs reduce dependency on volatile external markets. This resilience is crucial in the context of post-pandemic tourism recovery.

## 3. *Innovation Ecosystem and Governance Dynamics*

Digital transformation is embedded within a collaborative governance structure. Innovation labs and institutional partnerships provide structural scaffolding for experimentation and skill development. The ecosystem perspective reveals that competitive advantage emerges from collective capability rather than isolated firm performance. Shared learning processes accelerate digital maturity across the village network (Mandviwalla & Flanagan, 2021).

Governance support also mitigates risk. Institutional endorsement reduces perceived uncertainty associated with technology investment. This collective risk-sharing mechanism strengthens the sustainability of long-term transformation.

## 4. *Digital Maturity and Adaptive Capacity*

Digital maturity develops through iterative learning cycles. SMEs refine digital practices based on feedback and contextual constraints rather than rigid strategic planning. This adaptive capacity enhances resilience to market volatility. When demand patterns shift, digitally enabled SMEs respond more effectively than those relying solely on traditional methods (Agustian et al., 2023).

Furthermore, digital maturity fosters strategic reflexivity. Entrepreneurs increasingly evaluate long-term positioning within digital tourism ecosystems, indicating cognitive transformation alongside technological adoption.

## 5. *Toward a Village Tourism Digital Hub Model*

The findings support the development of a structured Village Tourism Digital

Hub. Such a model integrates training, innovation incubation, sustainability certification, and analytics support. This integrated framework strengthens ecosystem-level coordination while preserving local identity. It formalizes knowledge-sharing processes without undermining community autonomy (Joel et al., 2024).

Ultimately, sustainable competitive advantage in village tourism emerges from the synergy among local resources, digital capability, sustainability orientation, and collaborative governance. The Baturraden case demonstrates how qualitative, context-sensitive digital transformation can generate globally relevant competitiveness while maintaining cultural integrity.

## CONCLUSION

This study demonstrates that digital transformation in village-based tourism SMEs is a contextual and socially embedded process rather than a purely technological shift. Based on qualitative evidence from Desa Wisata Baturraden, the findings show that sustainable competitive advantage emerges when digitalization is strategically aligned with local cultural identity, natural resources, and community-based values. Digital tools function as amplifiers of local strategic resources by enhancing visibility, operational coordination, and sustainability communication without undermining authenticity. Furthermore, the study highlights that effective digital transformation depends on collaborative ecosystems involving universities, local governments, and tourism institutions, where adaptive learning and collective innovation support continuous digital maturity and long-term competitiveness in village-based tourism destinations.

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## CONFLICT OF INTEREST

The author declares that there is no conflict of interest regarding the research, authorship, or publication of this article.

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