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BRIDGING SMART CITY PRINCIPLES AND COMMUNITY-BASED TOURISM: A CASE STUDY OF DIGITAL TRANSFORMATION IN KAMPUNG TAJUR TOURISM VILLAGE

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Abstract

This study explores the potential of applying smart city and smart rural tourism frameworks to support the development of Kampung Tajur Village Tourism, a rural tourism village located in Purwakarta Regency, Indonesia. Despite its cultural richness and ecotourism potential, Kampung Tajur remains digitally underdeveloped and lacks integration into national tourism platforms. Using a qualitative descriptive case study approach, data were collected by way of interviews with local leadership and local person and supported by secondary literature. The findings reveal that the village faces critical challenges, including digital illiteracy, infrastructure gaps, weak stakeholder collaboration, and the absence of public-private partnerships. Nevertheless, strategic opportunities exist to revitalize Kampung Tajur through digital storytelling, youth-led social media management, and context-sensitive smart tourism governance. This study proposes a localized smart village tourism model grounded in four pillars: regulation, facilitation, collaboration, and socialization. The findings contribute to the discourse on rural digital transformation by offering a practical framework that aligns technology adoption with community empowerment and sustainable tourism principles in the Indonesian context.

Keywords: Kampung Tajur; Smart Rural Tourism; Smart City Integration; Digital Transformation; Community-Based Tourism

INTRODUCTION

The scope of this research is focused on Kampung Tajur as a case study to explore the localized adaptation of smart rural tourism. It includes analysis of infrastructure, community readiness, governance structures, and digital potentials. The findings of this study are expected to offer practical implications for policymakers and tourism planners seeking to replicate smart rural models in other regions. Key recommendations include investing in digital training, creating integrated stakeholder platforms, and aligning rural tourism strategies with national smart city goals.

A Smart City is a city that leverages digital technologies and data to enhance the efficiency, effectiveness, and sustainability of governance, public services, and urban infrastructure. The concept emphasizes the use of information and communication technologies (ICT) in order to manage resources intelligently, ensure better decision-making, and support city operations that aim to improve the quality of life for its residents (Widiyastuti et al., 2021). It represents a shift from traditional urban management to a data-driven, responsive approach tailored to the evolving demands of urbanization and technological advancement. At its core, a smart city is designed to identify problems early through data analysis and act preventively to address urban challenges. Smart cities use data not only to detect but also to collaboratively resolve issues across domains, facilitating innovation in public policy and urban development (Widiyastuti et al., 2021). This proactive nature of smart city management ensures that local governments are not merely reacting to problems but are strategically planning for the future.

Smart cities operate across multiple dimensions, including smart governance, smart economy, smart mobility, smart tourism, smart environment, smart people (society), smart living, and smart branding (Setiawan & Aindita, 2022; Susanto et al., 2023). These dimensions reflect the comprehensive nature of smart city development, where various sectors—government, private industry, academia, and civil society—work together using technological and social capital to transform urban areas into inclusive, innovative, and sustainable ecosystems. Each dimension plays a vital role in building a holistic urban strategy that is adaptive to local needs. Despite the fact technology plays a major role in enabling smart cities, it is not the sole driver. Successful smart city development must prioritize collaborative innovation, effective governance, regulatory frameworks, and citizen engagement (Susanto et al., 2023). Technology is a means, not an end; true smartness lies in how cities empower communities, ensure equity, and sustain progress through well-integrated planning and adaptive management.

In Indonesia, the implementation of smart cities has evolved to accommodate regional characteristics and capacities. Programs like the *Gerakan 100 Smart City* and frameworks such as the Smart Sustainable City Framework (SSCF) emphasize not only technological readiness but also the importance of local context in designing smart initiatives (Widiyastuti et al., 2021). By fostering cross-sector collaboration and aligning with strategic national goals, smart cities aim to ensure long-term competitiveness, resilience, and well-being for all generations.

One application of the smart city concept in rural areas is smart rural tourism. Smart rural tourism is an emerging concept that integrates advanced digital technologies—such as the Internet of Things (IoT), artificial intelligence, and big data analytics—into rural tourism development. This approach aims to enhance the quality of visitor experiences, optimize tourism services, and increase destination competitiveness through smart infrastructure and connectivity (Ye et al., 2025). Unlike conventional rural tourism, smart rural tourism involves the strategic use of technology to create personalized, data-driven services and to facilitate efficient management and marketing of rural destinations. These initiatives emphasize that technological innovation alone is not sufficient; effective smart rural tourism development must integrate local wisdom, cultural assets, and sustainable practices that are contextually grounded.

Beyond improving the tourist experience, smart rural tourism is a powerful tool for achieving rural revitalization. It empowers local communities economically and socially by creating new job opportunities, preserving cultural heritage, and supporting small and medium enterprises (SMEs) through digital platforms. Moreover, the implementation of smart technologies supports ecological sustainability through practices such as smart waste management, the use of renewable energy, and environmentally friendly transportation options.

This transformation is particularly evident in rural tourist destinations where ICT infrastructure is being harnessed not only for tourism promotion but also for enhancing local governance, MSME development, and environmental sustainability. The smart village strategy in places like Sukapura includes regulation, facilitation, collaboration, and socialization, ensuring that smart initiatives are inclusive and community-driven (Nurrahman, 2024). Local governments and village tourism managers play an increasingly active role in planning and executing smart tourism projects that are aligned with the values and needs of rural populations.

Furthermore, smart rural tourism in Indonesia is seen as a catalyst for digital transformation, creating inclusive opportunities for economic growth, especially through the development of digital-based micro-enterprises and eco-tourism services. The integration of smart systems allows rural areas to become more competitive while maintaining sustainability, particularly in waste management, renewable energy usage, and digital marketing. These advancements help rural destinations to attract tech-savvy travellers without compromising environmental or cultural integrity. Importantly, community involvement remains a core pillar of successful smart rural tourism. Incentivizing host communities through digital literacy training, infrastructure support, and capacity-building programs ensures local acceptance and long-term viability (Vinodan et.al., 2023).

Such inclusive approaches transform tourism into a participatory mechanism for rural revitalization, not only economically but also socially and environmentally.

The smart city concept emphasizes the integration of information and communication technology (ICT) to improve the efficiency of governance, service delivery, and quality of life, particularly through data-based decision-making and participatory planning (Widiyastuti et al., 2021). When implemented to rural contexts, this framework evolves into smart rural tourism—a convergence of digital infrastructure, local empowerment, and sustainable tourism practices. It fosters innovation by integrating digital tools such as online marketing, e-governance, mobile applications, and community engagement to address rural development challenges. In Indonesia, this model has inspired the rise of *desa cerdas* (smart villages), which aim to decentralize smart development beyond cities to areas with high cultural and ecological value, such as Kampung Tajur in Pasanggrahan Village, Purwakarta.

One such potential site for smart rural tourism is Kampung Tajur, a tourism village in Pasanggrahan Village, Purwakarta. Renowned for its natural beauty, cultural richness, and hospitality, Kampung Tajur offers homestays, eco-agricultural experiences, traditional culinary practices, homestays, and immersive cultural experiences, such as farming, cooking with *hawu* (traditional stoves), and participating in folk arts like *Tutunggalan* (Juliana & Sitorus, 2021). Nevertheless, despite its tourism potential, the village remains in the "developing" category based on the Ministry of Tourism's JADESTA index, which cites limited digital infrastructure, accessibility, and visitor readiness (Nurwahyuni et al., 2024). The introduction of smart tourism technologies—such as digital booking systems, geotagged maps, QR-based tour information, and multilingual digital signage—could greatly enhance the tourist experience and improve operational efficiency. Furthermore, existing initiatives like the YoLo (Youth-Based Local Tourism) platform serve as early attempts at integrating youth-driven digital strategies to boost tourism branding and visibility (Eriyang et al., 2018).

Rural tourism in Kampung Tajur relies heavily as well on community participation and capacity building. At present, participation is dominated by manual labour—such as maintaining homestays and guiding school tours—while contributions in the form of ideas, creative innovation, and technology use remain underleveraged (Nurwahyuni et al., 2024). In the direction of transition into a smart tourism village, the community must be equipped with relevant digital skills. For example, PKM English training programs have empowered locals to engage with international tourists more confidently, opening new revenue opportunities from global tourism (Rahayu et al., 2024). Moreover, youth can be mobilized not only as tour facilitators but also as digital ambassadors who create and manage online content to market local attractions via platforms like Instagram, TikTok, or Google Maps.

An equally crucial component is multi-stakeholder collaboration. The existing synergies among tourism stakeholders in Kampung Tajur—including local government, homestay owners, and tourism managers—need to be strengthened to enable smart infrastructure deployment (Sari and Sitorus, 2021). This includes partnerships with digital platforms for travel booking (e.g., Traveloka), mobile payment systems, and interactive visitor feedback tools. Moreover, infrastructure development (such as improving road access and signage) must be synchronized with digital service innovation. Stakeholder engagement should also prioritize inclusive governance, ensuring that tourism growth does not compromise cultural authenticity or environmental sustainability (Juliana & Sitorus, 2021).

Despite national movements toward digital transformation, rural tourism villages in the vein of Kampung Tajur remain excluded from broader smart city ecosystems. Most smart city initiatives still target urban environments, while the adaptation of smart tourism frameworks to rural settings has not been empirically or contextually explored. Issues such as fragmented stakeholder collaboration, limited digital literacy, and absence of localized governance frameworks hinder the transition to smart rural tourism (Vinodan et al., 2023; Escobar & Hall, 2025).

In spite of the growing popularity of smart cities in Indonesia, most initiatives remain concentrated in urban areas, leaving rural regions underrepresented in national digital

transformation efforts. Programs such as *Gerakan 100 Smart City* and the Smart Sustainable City Framework (SSCF) have laid the groundwork for integrating ICT into urban governance and services (Widiyastuti et al., 2021). Nonetheless, their practical implementation in rural tourism villages like Kampung Tajur is still limited (Juliana & Sitorus, 2021). This urban-centric focus creates a research gap in understanding how smart city elements—such as data-driven governance, digital platforms, and participatory management—can be adapted to the realities of rural tourism contexts where cultural wisdom and social capital are central to development.

Moreover, the concept of smart rural tourism is relatively underexplored in Indonesian academic discourse and rural development policy. In spite the fact that studies in developed regions such as China's Yangtze River Delta show how smart rural tourism can support economic revitalization and cultural sustainability (Ye et al., 2025), little empirical research has been conducted in developing contexts where infrastructural and human resource limitations are more pronounced. Post-pandemic rural tourism offers fertile ground for smart innovation, yet the adaptation of such models in Indonesia remains largely unstudied (Cvar et.al., 2024) Therefore, there is a pressing need to investigate the barriers and opportunities of implementing smart tourism strategies in rural destinations with complex socio-cultural dynamics.

A further issue lies in the limited digital literacy and engagement of local communities in tourism villages such as Kampung Tajur. While initiatives like YoLo (Youth-Based Local Tourism) have introduced digital elements for youth empowerment (Eriyang et al., 2018), most residents still engage in tourism primarily through manual labour rather than innovation, digital content creation, or managerial roles (Nurwahyuni et al., 2024). Furthermore, challenges such as limited English proficiency constrain the village's ability to attract and serve international tourists (Rahayu et al., 2024). Without broad-based digital training and inclusive capacity-building, the community risks being marginalized in the transition to smart tourism, undermining the very goal of empowering local actors.

Another critical challenge is the lack of coordinated stakeholder collaboration and governance mechanisms to support Kampung Tajur's digital transformation. Despite the fact that informal partnerships exist among tourism managers, homestay providers, and local government, these efforts remain disconnected from national smart development frameworks and private sector platforms (Sari & Sitorus, 2021). As a result, innovation is fragmented, and resource allocation is inefficient. Moreover, collaboration with tech companies, digital travel platforms, and ICT service providers remains minimal, further limiting the potential for digital upgrades in marketing, service delivery, and tourist engagement.

Lastly, there is a strong need to contextualize smart tourism frameworks to Indonesia's rural realities. Many smart tourism initiatives are designed based on urban or foreign models, which often ignore local wisdom, ecological constraints, and informal economic practices that shape rural life (Vinodan et al., 2023; Escobar & Hall, 2025). Implementing such models without adaptation may result in digital tourism systems that are technologically sound but socially disconnected. Hence, this research aims to fill this critical gap by exploring how smart city and rural smart tourism frameworks can be synergized and localized to develop Kampung Tajur into a sustainable, community-led tourism village.

Therefore, the integration of smart city principles into Kampung Tajur's rural tourism framework offers a transformative path toward sustainable development. Smart rural tourism can empower communities, improve service quality, boost digital visibility, and diversify revenue streams, all while preserving local heritage. Nevertheless, realizing this vision requires continuous investment in human capital, cross-sector collaboration, and adaptive technology aligned with Kampung Tajur's unique cultural landscape. As Kampung Tajur continues to evolve, its success may serve as a replicable model for other rural tourism villages across Indonesia seeking to bridge tradition and innovation in the digital age.

The objectives of this study are threefold. First, it aims to analyse the current conditions and key challenges faced by Kampung Tajur as a developing tourism village, particularly in relation to its

digital infrastructure, community engagement, and service readiness. Second, the study seeks to examine how smart city and rural smart tourism principles—such as data-driven governance, ICT integration, and participatory planning—can be effectively implemented to the rural tourism context of Kampung Tajur. Third, the research intends to propose a contextualized framework that blends digital innovation with community empowerment and sustainable tourism practices, thereby offering a localized and adaptable model for smart rural tourism development in Indonesia.

This research contributes both theoretically and practically to the field of smart tourism and rural development. Theoretically, it bridges the gap between smart city frameworks and rural tourism development, particularly within the Indonesian context, by expanding the discourse on smart rural tourism through an empirically grounded and localized model for digital transformation in rural areas. Practically, the study offers actionable insights for local governments, tourism managers, and digital platform providers on how to integrate ICT effectively into rural tourism planning. It as well emphasizes the importance of capacity-building and collaborative strategies to ensure that digital innovation is inclusive, participatory, and community-driven.

Building upon the existing discourse on smart cities and smart rural tourism, it becomes essential to investigate how these two frameworks can be synergistically implemented to real-world contexts, particularly in underdeveloped or developing rural tourism areas. Kampung Tajur, with its rich cultural heritage and ecological assets, presents a compelling case for examining this integration. While previous studies have explored the theoretical benefits of digital transformation in tourism, few have addressed how smart governance, ICT-based infrastructure, and community-based innovation can be tailored to the unique socio-economic and environmental conditions of Indonesian tourism villages. Therefore, this study seeks to answer the following research question: **How can smart city and smart rural tourism help develop Kampung Tajur tourism village?**

LITERATURE REVIEW

The concept of a smart city has emerged as a response to increasing urban challenges and opportunities for technological innovation. Smart cities aim to optimize governance, infrastructure, and service delivery using information and communication technology (ICT) to improve the quality of life (Widiyastuti et al., 2021). A mature smart city is typically built on six pillars: smart governance, economy, environment, mobility, living, and people (Susanto et al., 2023). The Indonesian government, through initiatives like *Gerakan 100 Smart City*, has encouraged regional governments to adopt data-driven strategies. In spite of this, numerous local governments still face challenges related to infrastructure readiness, digital maturity, and the integration of local wisdom into technological frameworks (Setiawan & Aindita, 2022).

Recent discourse has extended the smart city paradigm into rural contexts, giving rise to the concept of smart rural tourism. This approach applies digital tools, community empowerment, and sustainable tourism practices to support rural revitalization (Ye et al., 2025). In China's Yangtze River Delta, smart rural tourism has been instrumental in driving economic growth, reducing urban-rural gaps, and preserving cultural identity. Key technological components include the Internet of Things (IoT), big data analytics, and digital platforms that enhance tourist experiences and destination management. These tools are not only improving operational efficiency but also strengthening community participation and rural branding (Cvar et al., 2024).

As of a policy and governance perspective, integrating tourism systems within smart city strategies remains a critical challenge. Escobar and Hall (2025) argue that while tourism contributes to local economies, it is often excluded from formal smart city frameworks due to bureaucratic fragmentation and limited understanding of tourism's systemic impacts. This disconnect can lead to inefficient resource use and overlooked opportunities for synergy. Their study calls for participatory governance models that embed tourism into broader urban and rural development agendas. Furthermore, incentives for community participation—such as digital skills training and inclusive planning—are essential for sustainable smart tourism systems (Vinodan et al., 2023).

Despite the growing body of literature on smart cities and smart rural tourism, there is still a lack of localized research exploring how these two frameworks can be practically integrated to develop tourism villages in the Indonesian context. Most existing studies focus on either urban smart city initiatives or rural tourism separately, often using developed regions like the Yangtze River Delta or European rural areas as case studies (Ye et al., 2025; Cvar et al., 2024). There is limited empirical investigation that implements the smart city framework to a real-life rural tourism destination in Indonesia, particularly one with unique cultural and ecological characteristics like Kampung Tajur Tourism Village.

The case of Kampung Tajur Tourism Village offers a relevant example of how these theoretical frameworks can be contextualized. Located in Pasanggrahan Village, Purwakarta, Kampung Tajur boasts natural and cultural tourism assets including agricultural landscapes, traditional cooking, and eco-homestays (Juliana & Sitorus, 2021). Nonetheless, challenges such as limited English proficiency, low digital engagement, and infrastructure deficits hinder its progress. Programs like English language training and youth-led initiatives (e.g., YoLo) have shown promise in promoting community involvement and digital promotion (Rahayu et al., 2024; Eriyang et al., 2018). These localized efforts align with smart rural tourism principles by leveraging digital tools and human capital to enhance rural attractiveness.

In summary, the integration of smart city and rural smart tourism concepts can serve as a strategic blueprint for the development of tourism villages like Kampung Tajur. While digital tools are necessary enablers, their success depends on participatory governance, community readiness, and the incorporation of local identity. This study addresses that gap by examining how smart city and rural smart tourism concepts can be adapted and combined to support the sustainable development of Kampung Tajur. The novelty of this research lies in its contextualized approach, linking national digital transformation goals with grassroots community empowerment, and proposing a hybrid model of smart tourism that is both inclusive and locally grounded.

RESEARCH METHODS

This study employs a qualitative research approach using a descriptive case study design to explore how smart city and rural smart tourism frameworks can be implemented to develop rural tourism in Kampung Tajur Tourism Village, located in Pasanggrahan Village, Bojong District, Purwakarta Regency, Indonesia. The case study method enables an in-depth contextual analysis of local challenges, infrastructure readiness, and stakeholder dynamics in implementing digital tourism innovations (Yin, 2018).

The case study design was selected due to its suitability for investigating complex, real-life phenomena within specific contexts. In this research, the unit of analysis is the tourism village of Kampung Tajur, which is currently in the “developing” category based on JADESTA’s classification (Nurwahyuni et al., 2024). This design allows for a detailed examination of smart rural tourism implementation barriers, community engagement, and digital infrastructure gaps, in alignment with contextual smart city frameworks (Widiyastuti et al., 2021; Vinodan et al., 2023).

The fieldwork was conducted in RT 10, which represents the geographic and administrative core of Kampung Tajur as a designated tourism village. The research took place over two weeks in June 2025, with the researcher present on-site to conduct interviews, participate in observations, and assess the digital and tourism infrastructure. The primary key informant was the Ketua RT 10, selected through purposive sampling due to his leadership role and detailed knowledge of community tourism practices and digital engagement (Sari & Sitorus, 2021), and a staff from Tajur Katineung.

Primary data were collected through semi-structured, in-depth interviews with the Ketua RT 10 and a staff from Tajur Katineung. The interview protocol included open-ended questions covering digital infrastructure, stakeholder participation, tourism marketing, and governance practices. This method allowed the researcher to obtain both factual data and subjective perspectives. All

interviews were recorded, transcribed, and translated as necessary. Secondary data were obtained from relevant academic literature, national policy frameworks such as the *Gerakan 100 Smart City* and the Smart Sustainable City Framework (SSCF), as well as empirical studies on smart rural tourism in both Indonesia and abroad (Lee et al., 2020; Rudwiarti et al., 2021; Ye et al., 2025). These secondary sources were used to contextualize findings and identify theoretical alignments or divergences.

Data were analysed using a thematic content analysis method. Transcribed interviews were coded and organized into key categories such as: (1) digital inactivity; (2) community capacity and empowerment; (3) stakeholder collaboration; and (4) tourism potential. These themes were then cross-compared with existing smart rural tourism models (e.g., post-smart village concepts, participatory governance frameworks) to evaluate alignment or deviations (Kusumastuti et al., 2024; Escobar & Hall, 2025). To ensure credibility and validity, methodological triangulation was applied by comparing primary data from interviews with secondary literature and policy analysis. This process allowed for the verification of insights and enhanced the robustness of interpretations (Creswell, 2014).

RESULTS AND DISCUSSION

Kampung Tajur Tourism Village, situated in RT 10 of Pasanggrahan Village, Bojong, is officially designated as a tourism village and is recognized for its agricultural landscape, cultural heritage, and immersive homestay experiences. Despite this rich tourism potential, the village currently demonstrates a significant lack of digital infrastructure essential to modern tourism management. Based on field interviews, it was found that no functioning website exists to promote or facilitate bookings for Kampung Tajur. Moreover, digital channels like Instagram and TikTok—once initiated by local youth—have become inactive due to the absence of personnel trained in digital content management. The absence from major travel applications along the lines of Traveloka or Agoda further indicates Kampung Tajur's exclusion from the broader tourism ecosystem.

The village's reliance on traditional promotional methods such as word-of-mouth and local news coverage is a major disadvantage in an era when travel decisions are heavily influenced by online visibility and reviews. This disconnection from digital platforms reduces the village's competitiveness, particularly among younger, tech-savvy tourists who prioritize destinations that are easily discoverable and bookable online. In contrast, comparable tourism villages that maintain active digital campaigns benefit from consistent tourist flows and higher destination awareness. Thus, Kampung Tajur's low digital footprint directly limits its market reach and tourism revenue potential, a pattern also observed in other under-digitalized rural destinations (Cvar et al., 2024).

The situation in Kampung Tajur reflects a broader challenge faced by many rural areas in Indonesia—namely, the implementation gap between smart tourism strategies and their execution on the ground. While national smart village programs exist, many are hampered by inconsistent ICT access and unequal digital literacy across communities (Muhtar et al., 2023). Digital initiatives are often donor-driven or externally initiated without sufficient local ownership or sustainability plans. In Kampung Tajur's case, previous digital initiatives such as social media branding were not maintained due to human resource constraints, pointing to the need for systematic and locally led digital literacy training programs.

Moreover, Kampung Tajur's lack of digital engagement reflects a disconnect between the village's tourism potential, its managerial capacity, and its level of preparedness. In spite of the fact that the village possesses physical and cultural assets suitable for tourism, the absence of a digital foundation hinders not only promotion but also data collection, visitor engagement, and service innovation (Rudwiarti et al., 2021). The village does not currently use digital tools such as e-ticketing, QR-coded maps, or online visitor feedback—technologies that are now considered basic components of smart tourism ecosystems (Ye et al., 2025). This indicates a pressing need to integrate on a par the most foundational ICT tools into the village's tourism operations.

Addressing this digital inactivity will require more than the provision of infrastructure; it demands a community-centred strategy that includes digital upskilling, stakeholder coordination, and consistent content creation. Potential partnerships with local universities or digital marketing communities can help build internal capacity while creating ownership among Kampung Tajur's youth and homestay operators. Shorn of such efforts, the village risks remaining in a state of underdevelopment despite its tourism potential. As smart rural tourism increasingly becomes the norm rather than the exception, bridging this digital divide is critical—not only for visibility and competitiveness but for long-term sustainability and inclusive economic growth in Kampung Tajur.

Kampung Tajur's limited progress in tourism development is deeply tied to its misalignment with the broader principles of smart cities and smart villages. Smart city frameworks, such as the Smart Sustainable City Framework (SSCF), emphasize six core dimensions—smart governance, smart economy, smart people, smart environment, smart mobility, and smart living. These are supported by essential enablers such as ICT infrastructure, digital governance, and stakeholder collaboration (Widiyastuti et al., 2021). In the case of Kampung Tajur, on the other hand, there is an evident absence of these components. The village lacks digital governance tools, e-government platforms, and policy alignment with regional digital transformation agendas, leaving it isolated from smart development ecosystems.

This disconnect is particularly evident in the governance and economic dimensions of the smart city model. While local actors such as the Ketua RT and homestay owners are active in day-to-day tourism operations, there are no strategic efforts to digitize planning, budgeting, or visitor services. Smart governance entails transparency, data-informed decision-making, and multi-actor coordination (Setiawan & Aindita, 2022), all of which are missing in Kampung Tajur's current approach. Likewise, smart economy initiatives, such as integrating micro, small, and medium enterprises (MSMEs) into digital marketplaces, are still unrealized due to infrastructural and skill-based barriers. The digital economy is a core pillar in national tourism competitiveness, and Kampung Tajur's exclusion from it hampers not only visibility but also long-term revenue generation and scalability.

The failure to embed these smart dimensions locally is not unique to Kampung Tajur. Ji et al. (2024) conducted a study across smart cities in China and found a 17.2% increase in tourist arrivals and a 24.3% increase in tourism revenue following the implementation of smart city principles. These improvements were largely driven by enhancements in digital infrastructure, online engagement, and automated tourism services. In spite of this, such benefits are rarely transferred to nearby rural areas unless there are deliberate policies enabling urban-rural spillover. Kampung Tajur currently lacks such mechanisms. The digital divide between urban smart cities and rural tourism villages along the lines of Kampung Tajur is therefore not only technological but also structural and policy-based.

This urban-rural digital gap is further exacerbated by the lack of institutional support and inter-regional collaboration. Unlike some rural destinations in East Java or Bali that are actively linked to urban digital initiatives and regional tourism boards, Kampung Tajur remains administratively and digitally disconnected. There is no platform that links village tourism offerings with Purwakarta's smart city infrastructure or West Java's digital economy initiatives. This fragmentation leads to duplicated efforts, inefficiencies, and missed opportunities for integration into broader smart tourism networks. The absence of digital inclusion policies at the sub-district level prevents Kampung Tajur from accessing both funding and technical assistance that could help close this gap.

In order to overcome this disconnection, Kampung Tajur must be repositioned not as a passive recipient of development but as a strategic partner in regional smart city planning. This requires the formalization of digital tourism policies at the village level, supported by the district government and aligned with West Java's digital transformation roadmap. Cross-sector partnerships should be built between the tourism office, ICT agencies, universities, and local digital entrepreneurs to co-develop scalable solutions such as integrated booking systems, smart signage, and e-governance tools. Shorn of deliberate inclusion in the smart city narrative, Kampung Tajur risks being left behind in Indonesia's national agenda for digital equity and sustainable tourism innovation.

Despite its tourism potential, Kampung Tajur faces persistent structural barriers that hinder its transformation into a smart tourism village. Based on field observations and interviews, three critical barriers were identified: (1) the lack of human resources trained in digital technologies, (2) the absence of basic ICT infrastructure such as websites or e-booking systems, and (3) weak stakeholder coordination between tourism actors, village authorities, and regional government bodies. These deficits are interconnected and compound each other—limiting the village's ability to adopt and sustain digital innovation.

The most immediate issue is the lack of digital skills and continued capacity-building among residents. Youth and homestay operators are not adequately equipped to manage social media, booking platforms, or digital branding. According to the Ketua RT, the last formal workshop for Kampung Tajur was held in 2017, with a focus on hospitality, homestay management, and basic language learning. Notably, the language training was only made possible through the presence of KKN (Kuliah Kerja Nyata) university students. Since then, no follow-up training has occurred. This gap has left the community stagnant in terms of innovation, with little room to build or expand on past learning. The ongoing digital literacy and tourism training are essential in enabling communities to adapt to evolving tourism markets (Vinodan et.al., 2023)

The absence of ICT infrastructure further constrains the community's ability to progress. Kampung Tajur does not have an operational website, QR-coded maps, mobile booking access, or digital visitor feedback mechanisms. These missing elements are now considered baseline standards in smart tourism ecosystems. In turn, tourists find it difficult to obtain trustworthy information about the destination or to book experiences in advance. Instead of digital expansion, the village remains reliant on informal methods such as WhatsApp or verbal confirmations, which are prone to miscommunication and reduce tourist confidence. Digital underdevelopment risks turning potential tourism sites into isolated "silent villages," disconnected from innovation networks and national platforms (Pudianti et.al., 2024)

Institutionally, the village as well lacks adequate governance responsiveness and vertical coordination. According to the Ketua RT, more than a few proposals have been submitted to the Village Head requesting support for training, promotion, and tourism facility improvement—but no formal response has ever been received. This signals a breakdown in the communication channel between neighbourhood-level tourism actors and formal village governance. Such governance inertia discourages initiative-taking and leads to community fatigue. Escobar and Hall (2025) identify similar governance bottlenecks as a key reason why rural destinations are often left behind in digital transformation agendas. Without structured feedback loops and responsive leadership, it becomes increasingly difficult to build momentum or secure external partnerships.

In order to move forward, Kampung Tajur needs more than infrastructure—it needs a renewed commitment to local empowerment, supported by responsive governance and institutional accountability. This includes establishing a formal tourism working group, securing village funds for training, and developing a participatory planning framework for digital tourism. A post-smart tourism village model must involve not only digital innovation but the empowerment of communities as co-creators of tourism narratives (Kusumastuti et al., 2024). Without such all-inclusive support, technological interventions risk becoming short-term, unsustainable, or irrelevant to local needs.

Despite the structural limitations and digital gaps, Kampung Tajur possesses substantial tourism assets that offer strong potential for smart rural tourism transformation. The village is home to scenic rice fields, traditional farming life, and eco-homestays. Visitors can engage in immersive experiences like cooking with *hawu* (traditional stoves), participating in local ceremonies, or enjoying the natural beauty of Gunung Burangrang. These attractions align with the growing demand for nature-based, experiential, and community-driven tourism. As rural tourism continues to grow in global relevance—especially post-pandemic—Kampung Tajur can leverage these qualities to position itself as a low-impact, high-value smart destination.

A particularly noteworthy site within Kampung Tajur is Tajur Katineung, a privately owned cottage that provides guests with curated traditional experiences, such as batik-making, Sundanese

cooking, and cultural performances. Despite the fact Tajur Katineung demonstrates the market potential for cultural tourism, it currently operates independently from the rest of the village's tourism ecosystem. There is no structured collaboration between this private operator and village tourism managers. As a result, Tajur Katineung's innovation and visibility are not leveraged to support or inspire broader tourism development. This highlights a missed opportunity for strategic alignment between private enterprise and community-based tourism, which could otherwise serve as a blueprint for integrated tourism packages and knowledge exchange.

More broadly, Kampung Tajur suffers from a lack of collaboration between the private sector and the local government, as confirmed by the Ketua RT. There are no active partnerships or co-managed tourism projects between businesses, village officials, or local cooperatives. Furthermore, no private investors have been involved in developing tourism infrastructure, digital tools, or community capacity. This absence of public-private synergy creates siloed initiatives and limits access to capital, innovation, and tourism market channels. In contrast, countless successful smart tourism villages benefit from "triple helix" partnerships involving government, business, and community stakeholders (Ye et al., 2025).

Nevertheless, this as well presents a strategic opportunity: Kampung Tajur could attract investment and partnerships by clearly defining its tourism brand, creating simple but scalable digital platforms (such as a booking portal), and showcasing its readiness to collaborate. For instance, a Memorandum of Understanding (MoU) between Tajur Katineung and the village government could facilitate the sharing of digital marketing resources, co-created tour packages, or bundled lodging options. These efforts exemplify smart governance through co-creation, where the significance of tourism lies not only in the experiences provided but also in the collaborative processes of coordination, promotion, and sustained stakeholder engagement (Cvar et al., 2024).

In order to realize these opportunities, Kampung Tajur must adopt a multi-stakeholder approach to digital transformation—one that includes the private sector as a key partner in co-developing tourism services, rather than viewing it as an external player. This means fostering a shared vision between community leaders, local government, and private operators. Village regulations could be revised to provide incentives for collaboration, such as tax breaks for investors who provide training, infrastructure, or technology. In this way, Kampung Tajur can transition from fragmented tourism efforts to a connected smart rural tourism ecosystem—where public, private, and community sectors collectively enhance visitor experience, preserve local culture, and drive sustainable growth.

Bridging the gap between the aspirations of smart rural tourism and the on-the-ground realities in Kampung Tajur requires a strategic, community-centric development model tailored to local capacity and cultural context. Unlike urban smart city strategies that often rely on top-down planning and heavy technological infrastructure, smart tourism in rural villages must begin with the people. In Kampung Tajur, any digital transformation must be grounded in local values, traditions, and resource availability. A contextual smart rural tourism model prioritizes inclusivity, gradual digital adoption, and local ownership, ensuring that innovation does not outpace readiness.

The first pillar of this model is Regulation. This involves formulating basic village-level policies that define the roles of community stakeholders in managing digital tourism. For example, local authorities could formally designate a "Tourism Digital Team" composed of youth volunteers, homestay operators, and community leaders. These roles must be supported by clear mandates and mechanisms for accountability. Such governance structures not only help in organizing tasks but also legitimize tourism activities within formal village development planning. This regulatory foundation is essential for aligning Kampung Tajur's tourism goals with regional and national smart village policies (Widiyastuti et al., 2021).

Second, Facilitation addresses the need to build digital literacy and soft skills among residents. Training programs focused on smartphone use, social media marketing, hospitality management, and basic English can significantly boost the community's ability to interact with digital platforms and tourists alike. This is particularly important for youth, who are both digital natives and economic

actors within the tourism ecosystem. Drawing from the success of Sukapura Village in implementing a "digital volunteer" program, Kampung Tajur can replicate a similar model that empowers its own youth to become local digital champions and bridge the technology gap.

Third, Collaboration is crucial to mobilize external expertise and resources. Kampung Tajur should not be expected to undergo digital transformation in isolation. Partnerships with universities can support digital mapping projects or research-based promotion, while collaborations with tech companies may enable access to app development, virtual tour platforms, or online booking systems. Regional tourism boards and public agencies can also provide funding and promotional support. Such multi-stakeholder collaboration ensures that smart tourism initiatives are holistic, leveraging the comparative strengths of each actor to drive innovation, capacity building, and infrastructure development (Escobar & Hall, 2025).

Fourth, Socialization plays a vital role in building public awareness and enthusiasm for digital tourism. Without community buy-in, even well-funded smart initiatives often fail. Socialization activities can take the form of digital literacy festivals, content creation competitions, and knowledge-sharing workshops. These events serve not only to educate but also to cultivate a shared vision of smart tourism among residents. They create emotional and cultural investment in the village's development trajectory, reinforcing the idea that tourism is not just a business opportunity but a collective identity project.

In order to further illustrate the strategic position of Kampung Tajur Tourism Village in the context of smart rural tourism development, a SWOT (Strengths, Weaknesses, Opportunities, Threats) analysis was conducted. This analytical tool helps synthesize internal and external factors that influence the village's readiness and potential for digital tourism transformation. Drawing on field interview data, observation, and literature, the SWOT matrix below captures Kampung Tajur's current assets—such as cultural richness, location, and community engagement—as well as its constraints, including the lack of digital infrastructure, governance fragmentation, and limited capacity. At the same time, it highlights emerging opportunities for collaboration, digital integration, and market alignment, while also acknowledging critical threats like environmental strain and loss of competitiveness. This analysis provides a strategic foundation for proposing a localized smart tourism development model that is responsive, inclusive, and adaptive to Kampung Tajur's unique context.

Table 1. SWOT Matrix of Tajur Village Tourism Village

Strengths	Weaknesses
• Rich cultural and natural attractions (e.g., homestays, rice fields, Gunung Burangrang) • Strong community involvement in tourism (homestays, cultural events) • Potential for community-based tourism and storytelling • Strategic location in Purwakarta Regency near urban centers	• No digital presence: no website, inactive Instagram/TikTok, not listed on Agoda/Traveloka • Lack of human resources and digital skills to manage platforms • Absence of structured tourism governance or digital tourism regulation • Low inter-institutional collaboration and support from tourism authorities
Opportunities	**Threats**
• Leverage smart city spillover (e.g., digital tourism planning from urban areas) • Implement post-smart tourism village concept: local wisdom + ICT + sustainability	• Risk of being left behind as other villages digitize and attract more tourists • Community fatigue or disengagement if tourism does not yield clear benefits • Economic pressure and migration due to tourism underperformance

• Potential partnerships with universities, startups, or government for ICT training • Rise of digital travelers seeking local experiences and booking convenience	• Environmental or cultural degradation if tourism grows without proper planning

The SWOT matrix provides a comprehensive overview of the internal and external factors influencing the development of smart rural tourism in Desa Wisata Kampung Tajur. On the strengths side, the village benefits from rich cultural and natural assets, active community participation, and strategic geographic proximity to urban areas—creating strong foundations for community-based tourism. However, critical weaknesses persist, particularly the absence of digital infrastructure, limited human resource capacity, and a lack of governance mechanisms for digital tourism. Externally, there are promising opportunities such as smart city spillover effects, growing demand for authentic digital travel experiences, and potential partnerships with academic and governmental actors. Yet, these are counterbalanced by threats including regional competition, community disengagement, and risks of environmental degradation if growth occurs without planning. Overall, the matrix highlights both the untapped potential and urgent needs that must be addressed for Kampung Tajur to evolve into a sustainable smart tourism village.

In sum, a contextual smart village tourism model for Kampung Tajur must evolve from within, guided by local agency while supported by strategic alliances. Regulation provides governance clarity; facilitation builds capacity; collaboration mobilizes resources; and socialization nurtures shared values. When implemented cohesively, these four pillars create a feedback loop in which technology adoption leads to empowerment, empowerment leads to innovation, and innovation reinforces community resilience. Such a model transforms Kampung Tajur not only into a more competitive destination but into a living example of how smart city principles can be adapted for inclusive rural revitalization.

CONCLUSION

The findings of this research indicate that while Kampung Tajur possesses the cultural and environmental capital necessary for rural tourism, it lacks the institutional, digital, and strategic capacities required for smart tourism integration. The absence of digital infrastructure—such as websites, booking platforms, and social media management—limits the village's visibility and competitiveness in the growing rural tourism market. In addition, challenges such as weak governance, limited training, unresponsive village leadership, and the absence of private investment further hinder sustainable development. Nonetheless, this study identifies actionable opportunities to overcome these barriers. These include activating dormant digital platforms, establishing local digital task teams, and leveraging partnerships with universities, private sectors, and regional tourism bodies. The case of Tajur Katineung, a private cottage offering cultural tourism, illustrates untapped collaboration potential that could be scaled through better coordination and shared digital infrastructure. In order to realize its potential as a smart rural tourism destination, Kampung Tajur must adopt a community-centric digital transformation model. This model, rooted in the principles of regulation, facilitation, collaboration, and socialization, emphasizes both technological adoption and local empowerment. By building digital literacy, fostering stakeholder collaboration, and aligning with national smart city initiatives, Kampung Tajur can transform into a competitive, sustainable, and inclusive rural tourism village.

This research offers both theoretical and practical contributions. Theoretically, it localizes global smart tourism frameworks for use in underdeveloped rural contexts. Practically, it offers a replicable model for other villages facing similar constraints. Future research may expand this work by examining multi-village smart tourism networks or assessing the impact of digital tourism interventions on community livelihoods and cultural preservation.

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