

Original Article

Digital Based Sustainable Tourism Management and Local Wisdom in Serangan Village

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Abstract

Bali currently possesses 238 designated tourism villages, including Serangan Village, which is classified as a pioneering tourism village (desa wisata rintisan). Several challenges persist among tourism villages in Bali, particularly those in the early stages of development; these include limited infrastructure, inadequate road access, and a lack of supporting facilities such as tourist information centers and proper sanitation. Furthermore, management and governance issues remain a critical concern. Many tourism villages in Bali still lack professional management, leading to suboptimal promotion, stagnant tourism product development, and minimal collaboration with key stakeholders, including local governments and the tourism industry. Additionally, many local residents lack the necessary skills in tourism management, digital marketing, and foreign languages. Consequently, in-depth research on sustainable tourism management integrated with digital transformation and local wisdom—is essential to ensure the long-term viability of tourism in Serangan Village.

Keywords: Digital Transformation; Local Wisdom; Serangan Village; Sustainable Tourism

Introduction

The tourism sector is regarded as a substantial contributor to income generation in the era of globalization, significantly impacting both local and national economies. Tourism has proven its capacity to enhance community livelihoods by stimulating economic activity across all levels of society, directly influencing public welfare while simultaneously fostering regional growth and development ¹. Given its significant contribution to the global economy, tourism effectively creates millions of jobs and catalyzes economic expansion across various regions. Currently, digitalization has profoundly transformed tourism patterns; the adoption of digital technologies, such as online booking platforms and digital marketing, has become a vital business necessity for tourism to thrive in a globalized era ². While globalization drives economic growth through foreign exchange, it also necessitates that the tourism industry adapts to technological advancements and evolving trends, such as experience-based tourism and the strategic use of social media for promotion ³.

Bali, as one of the world's most popular tourist destinations, has become the icon of Indonesian tourism, renowned for its natural beauty, rich cultural heritage, and the hospitality of its people ⁴. By 2045, Balinese tourism is projected to encounter various opportunities and challenges influenced by

¹ Zhaoyang Sun and others, 'Tourism and Economic Growth: The Role of Institutional Quality', *International Review of Economics & Finance*, 98 (2025), 103913 <<https://doi.org/10.1016/j.iref.2025.103913>>.

² Natalia Kristiani Tandafatu, Lindiana Ermilinda and Yohanes Brekmans M. Darkel, 'Digital Transformation in Tourism: Exploring the Impact of Technology on Travel Experiences', *International Journal of Multidisciplinary Approach Sciences and Technologies*, 1.1 (2024), 55–64 <<https://doi.org/10.62207/w3vsg352>>.

³ Sergiy Yakubovskiy and Olha Kyrychenko, 'The Role Of Digitalization In The Development Of The Global Tourism Industry', *Odesa National University Herald. Economy*, 29.4(102) (2024) <<https://doi.org/10.32782/2304-0920/4-102-15>>.

⁴ Ni Nyoman Sri Astuti and others, 'The Future of Green Tourism in Bali: Challenges and Opportunities', *Journal of Applied Sciences in Travel and Hospitality*, 7.2 (2024), 178–95 <<https://doi.org/10.31940/jasth.v7i2.178-195>>.



technological, social, environmental, and economic shifts⁵. In recent years, Bali has experienced a dramatic surge in visitor numbers, bringing both positive and negative impacts. According to data from the Central Bureau of Statistics (BPS), international tourist arrivals directly to Bali Province in June 2024 reached 518,819 visits, representing a 7.24 percent increase compared to the previous month, which recorded 469,227 visits⁶. Given this surge, Bali possesses a significant opportunity to advance its tourism industry through more eco-friendly and sustainable practices⁷. The concepts of ecotourism, destination diversification, technological utilization, and robust collaboration with various stakeholders are key to addressing existing issues and ensuring that Bali remains an attractive and sustainable destination⁸. This aligns with the government's success in implementing the Regulation of the Minister of Tourism and Creative Economy/Head of the Tourism and Creative Economy Agency of the Republic of Indonesia Number 9 of 2021 regarding the Guidelines for Sustainable Tourism Destinations⁹.

Table 1. Statistical Data of Annual Tourist Arrivals to Bali (2020–2024)

Year	International Tourists	Domestic Tourists	Remarks
1. 2020	1.07 million	4.59 million	A drastic decline occurred due to the COVID-19 pandemic.
2. 2021	51 people	4.3 million	The most challenging year for Balinese tourism due to strict pandemic-related restrictions.
3. 2022	2.16 million	8.05 million	Recovery trends emerged following the gradual reopening of borders.
4. 2023	5.2 million	9.8 million	Arrivals surged significantly, approaching pre-pandemic levels.
5. 2024	6.3 million	10.1 million	Arrivals returned to normal, exceeding the achievements of 2019.

Based on the data presented in the table above, the overall development of tourism in Bali to date demonstrates a positive trend in terms of arrival numbers and economic recovery. However, challenges concerning sustainability, visitor management, and environmental impacts remain critical issues that demand serious attention¹⁰. Furthermore, as Bali's allure continues to attract global travelers, the island grapples with overcapacity in popular areas such as Ubud, Seminyak, and Kuta.

⁵ Rizky Januar, 'Implementation and Challenges of Sustainable Tourism Programs in Bali', *Bali Tourism Journal*, 8.2 (2024), 33–37 <<https://doi.org/10.36675/btj.v8i2.109>>.

⁶ Ni Putu Paramitha Wulandari, 'Multidimensional Challenges Toward Sustainable Development Tourism in Bali', *Bali Tourism Journal*, 8.3 (2024), 56–60 <<https://doi.org/10.36675/btj.v8i3.116>>.

⁷ Ni Wayan Anggreni, I Made Artayasa and I Wayan Sukita, 'Challenges And Opportunities Of Green Tourism Management: A Case Study Of One Of The Ecotourism Areas In Bangli, Tabanan, And Jembrana In Bali Province', *Journal of Tourism Studies and Applications*, 6.1 (2025), 18–26 <<https://doi.org/10.53356/diparojs.v6i1.114>>.

⁸ Asriani Asriani, 'Bibliometric Analysis on Sustainable Development Goals (SDGs): Decent Work and Economic Growth', *International Journal Of Education, Social Studies, And Management (IJESSM)*, 4.2 (2024), 625–37 <<https://doi.org/10.52121/ijessm.v4i2.330>>.

⁹ Retno Ginanjar, Asri Laksmi Riani and Intan Novela Qurrotul Aini, 'Local Champion: A New Leadership Perspective to Create Sustainable Tourism in Rural Communities', *The Eastasouth Management and Business*, 2.02 (2024), 105–17 <<https://doi.org/10.58812/esmb.v2i02.196>>.

¹⁰ I Gusti Bagus Rai Utama and others, 'Assessing the Impacts of Overtourism in Bali: Environmental, Socio-Cultural, and Economic Perspectives on Sustainable Tourism', *Tourism.Spectrum: Diversity & Dynamics*, 1.2 (2024), 81–92 <<https://doi.org/10.56578/tsdd010202>>.



This places immense pressure on local infrastructure, leading to crises in waste management and limited water resources ¹¹. Despite these challenges, Bali stands at a crossroads, possessing a significant opportunity to reshape its tourism landscape. The global shift toward sustainability allows Bali to pioneer eco-friendly tourism practices that mitigate environmental degradation and promote conservation ¹². Embracing sustainable tourism not only preserves the island's natural beauty but also ensures that the benefits are equitably distributed among local communities. Additionally, there is an increasing potential for cultural preservation through tourism, as the island can leverage its unique traditions and customs to create authentic experiences that honor and showcase its heritage ¹³.

Bali possesses numerous tourist destinations spread across the region, including *Serangan Village*. This village offers a unique combination of marine, religious, educational, and culinary tourism ¹⁴. Situated within Bali's 'Golden Triangle' of tourism, *Serangan Village* is highly accessible to both domestic and international tourists ¹⁵. Spanning an area of 48 hectares, the village holds significant potential in both natural and man-made resources as tourist attractions. Serangan prioritizes sustainable tourism development, as evidenced by its designation as the *Kura-Kura Bali Special Economic Zone (SEZ)* ¹⁶. The government's establishment of this SEZ is expected to stimulate economic growth, ensure equitable development, and enhance the community's sustainable competitiveness ¹⁷. Furthermore, realizing the other tourism development potentials in *Serangan Village* requires strengthening community capacity. This involves enhancing the residents' theoretical knowledge of tourism objects, cultural preservation, management and governance, and digital-based attractions to achieve long-term sustainable tourism ¹⁸.

In line with rapid technological advancements, the tourism industry in *Serangan Village* faces significant challenges in adapting to the era of globalization. The lack of skilled human resources in tourism digitalization remains a primary concern ¹⁹. As technology management is fundamentally human-centric, a lack of digital literacy among local residents inevitably hampers tourism progress, causing the sector to remain static and monotonous without innovative breakthroughs. Consequently, investment in education and training, alongside improved working conditions, is essential to attract and retain a high-quality workforce. Through proper human resource development, the tourism industry can grow sustainably while providing enhanced experiences for

¹¹ Budi Shantika, Ni Kadek Winda Yanti and Rudi Rindang Septiadji, 'The Impact of Tourism Pollution and Entrepreneurs' Role to Finding Sustainable Waste Management Solutions in Kuta, Seminyak, and Ubud', *International Journal of Green Tourism Research and Applications*, 7.2 (2025), 127–43 <<https://doi.org/10.31940/ijogtra.v7i2.127-143>>.

¹² Ari Apriani and others, 'Toward a Greener Future: Exploring Sustainable Practices in Travel and Tourism in Bali', *Journal of Sustainable Tourism and Entrepreneurship*, 4.3 (2024), 241–52 <<https://doi.org/10.35912/joste.v4i3.2092>>.

¹³ Peng Zhu and others, 'Experience Economy and Authenticity in the Heritage Tourism Sector: A Multiple-Dimensional Approach', *Acta Psychologica*, 257 (2025), 105118 <<https://doi.org/10.1016/j.actpsy.2025.105118>>.

¹⁴ Zainuddin, Abdul Malik Karim Amrullah and Indah Aminatuz Zuhriyah, 'The Challenges of Developing Islamic Education Curriculum and Strategies for Its Development in Facing Future Competency Demands', *Tafkîr: Interdisciplinary Journal of Islamic Education*, 6.1 (2025), 111–26 <<https://doi.org/10.31538/tijie.v6i1.1316>>.

¹⁵ Juhee Kang, 'Identifying Antecedents and Consequences of Well-Being: The Case of Cruise Passengers', *Tourism Management Perspectives*, 33 (2020), 100609 <<https://doi.org/10.1016/j.tmp.2019.100609>>.

¹⁶ Christophe André and others, 'Can Monetary Policy Lean against Housing Bubbles?', *Economic Modelling*, 110 (2022), 105801 <<https://doi.org/10.1016/j.econmod.2022.105801>>.

¹⁷ Marek Józwiak and Patrycja Sieg, 'Tourism Development in Post-Industrial Facilities as a Regional Business Model', *Sustainability*, 13.4 (2021), 2028 <<https://doi.org/10.3390/su13042028>>.

¹⁸ Marianna Sigala, 'Tourism and COVID-19: Impacts and Implications for Advancing and Resetting Industry and Research', *Journal of Business Research*, 117 (2020), 312–21 <<https://doi.org/10.1016/j.jbusres.2020.06.015>>.

¹⁹ Boglárka Méreiné-Berki, György Málóvics and Remus Crețan, 'You Become One with the Place: Social Mixing, Social Capital, and the Lived Experience of Urban Desegregation in the Roma Community', *Cities*, 117 (2021), 103302 <<https://doi.org/10.1016/j.cities.2021.103302>>.



visitors²⁰. Furthermore, adapting to technology in the globalized era must be conducted with deep respect for the local wisdom that thrives within the community. The significance of sustainable tourism based on digital integration and local wisdom lies in creating a balanced industry that harmonizes economic, cultural, and environmental interests²¹. While digital technology facilitates access and promotion, local wisdom serves as the foundation for authentic appeal, cultural preservation, and community welfare. Thus, based on the identified issues, the central research problem concerns the ideal management model for sustainable tourism-synthesizing digital transformation and local wisdom to ensure the long-term viability of tourism in *Serangan Village*²².

Method

This study employs a socio-legal research approach, an interdisciplinary methodology that examines law not merely through normative texts (written law) but also through its implementation, effectiveness, and social impact to understand 'law in action.' The data are categorized into primary, secondary, and tertiary sources. Primary data are obtained through direct observation and structured interviews with key informants, including the *Prajuru* (traditional leaders) of the Serangan Traditional Village. Secondary data consist of primary and secondary legal materials, comprising relevant legislations such as Law of the Republic of Indonesia No. 10 of 2009 concerning Tourism, in conjunction with Law No. 18 of 2025 regarding the Third Amendment to Law No. 10 of 2009, Bali Provincial Regulation No. 2 of 2012 concerning Balinese Cultural Tourism, and Bali Provincial Regulation No. 5 of 2020 concerning Standards for the Implementation of Balinese Cultural Tourism, alongside pertinent research findings and references. Tertiary data are sourced from legal dictionaries. Data collection techniques involve observation and interviews, with the gathered information processed and analyzed using a descriptive-qualitative method.

Results and Discussions

Indonesia is an archipelagic state endowed with abundant natural resources, including seas, rivers, coastal areas, and vast landmasses, all of which are utilized for tourism, the maritime economy (fisheries, transportation, and energy), national defense and security, and trade. Indonesia's expansive territorial waters facilitate the development of diverse marine tourism and international shipping routes, while its land and river systems are leveraged for nature tourism and other economic activities²³. Through prudent and sustainable management, these natural resources can provide optimal benefits for the national welfare. Law of the Republic of Indonesia No. 10 of 2009 concerning Tourism stipulates that tourism encompasses various tourist activities supported by diverse facilities and services provided by the community, entrepreneurs, the central government, and regional governments. Tourism is further defined as a series of journeys conducted repeatedly or as a circuit whether planned or spontaneous that generate unique experiences for the traveler. Meanwhile, according to the World Tourism Organization (UNWTO), tourism refers to the activities of persons traveling to and staying in places outside their usual environment²⁴.

Tourism is a multidimensional field that involves and intersects with various sectors and stakeholders. The tourism sector contributes significantly to both national and local economies, as it engages numerous parties ranging from goods and service providers to tourists as consumers. These

²⁰ Esi Akyere Mensah, Elizabeth Agyeiwaah and Felix Elvis Otoo, 'Re-Conceptualizing Volunteer Tourism Organizations Roles: A Host Perspective', *Tourism Management Perspectives*, 37 (2021), 100785 <<https://doi.org/10.1016/j.tmp.2020.100785>>.

²¹ Claudia Dolezal and Marina Novelli, 'Power in Community-Based Tourism: Empowerment and Partnership in Bali', *Journal of Sustainable Tourism*, 30.10 (2022), 2352–70 <<https://doi.org/10.1080/09669582.2020.1838527>>.

²² Nathan James Bennett and others, 'Blue Growth and Blue Justice: Ten Risks and Solutions for the Ocean Economy', *Marine Policy*, 125 (2021), 104387 <<https://doi.org/10.1016/j.marpol.2020.104387>>.

²³ Eko Eddy Supriyanto, 'Blue Tourism', *Indonesian Tourism Journal: Indonesian Journal of Tourism Research and Development*, 16.2 (2022), 138–48 <<https://doi.org/10.47608/jki.v16i22022.138-148>>.

²⁴ Stefan Gössling, Daniel Scott and C. Michael Hall, 'Pandemics, Tourism and Global Change: A Rapid Assessment of COVID-19', *Journal of Sustainable Tourism*, 29.1 (2021), 1–20 <<https://doi.org/10.1080/09669582.2020.1758708>>.



economic transactions include the purchase of admission tickets to destinations, the utilization of accommodation and transportation services, dining at restaurants, and the purchasing of souvenirs. Economic opportunities for these providers expand proportionally with the increase in tourist travel. This growth is evidenced by data from the Central Bureau of Statistics (BPS), which indicates that Indonesian tourism continues to thrive through rising domestic and international arrivals, thereby strengthening the national economy²⁵. Over the past five years, domestic tourist trips have increased steadily, reaching 385.17 million trips in 2022, 443.57 million in 2023, and 8.98 million in the early period of 2024. Meanwhile, international tourist arrivals in 2024 reached 13.90 million, reflecting a significant surge of 19.05 percent compared to the previous year²⁶.

In navigating the current era of globalization and modernization within the tourism sector, a robust policy direction should transition toward quality and sustainable tourism. This approach prioritizes service excellence, environmental and cultural preservation, local community empowerment, and multi-stakeholder collaboration²⁷. The focus is no longer solely on economic growth, but also on generating positive impacts for tourists, industry players, society, and the environment. The concept of sustainable tourism development emerged in response to the adverse effects of tourism activities, particularly during the rise of mass tourism in various global destinations. While the discourse on sustainable tourism development gained momentum in the 1980s, the concept was essentially adopted and postulated from the broader framework of sustainable development²⁸. The definition of sustainable development was first introduced in the World Conservation Strategy an international document on environmental protection strategies published by the International Union for Conservation of Nature and Natural Resources (IUCN) in 1980. Within this strategy, sustainable development is defined as a developmental process that occurs without depleting or damaging natural resources²⁹.

Another instrument for maintaining sustainable tourism is a governance and management framework that aligns with local needs, ensuring relevance for the community while simultaneously considering the requirements and desires of tourists. It is evident that tourism cannot be viewed solely as an economic equation; rather, it serves as a tool for sustainability across the three generally accepted pillars: economic, socio-cultural, and environmental. Current trends indicate that a majority of tourists prefer destinations and products with distinct environmental and cultural values, where the presence and participation of local residents are essential. This behavioral pattern favors destinations that implement clear strategies focused on sustainable practices and the active engagement of all stakeholders. In Bali, tourism governance refers to the management system regulated by Bali Governor Regulation Number 28 of 2020 concerning Bali Tourism Governance. This regulation aims to foster high-quality, sustainable, and culture-based tourism. Key aspects include developing destinations in harmony with local culture and environmental preservation, ensuring community involvement, and enforcing codes of conduct for tourists such as prohibitions on littering and the mandatory reduction of single-use plastics

The Provincial Government of Bali focuses on a tourism approach that is culture-based, high-quality, and sustainable (cultural tourism), guided by the philosophy of *Nangun Sat Kerthi Loka Bali*. This philosophy aims to ensure the preservation of the environment and local culture amidst rapid tourism development. However, tourism governance in Bali faces several critical challenges, including waste management issues, the depletion of clean water quality, and the risk of cultural erosion due to over-tourism. Currently, Bali has designated 238 tourism villages, a significant post-

²⁵ Trung V. Vu, 'Statehood Experience and Income Inequality: A Historical Perspective', *Economic Modelling*, 94 (2021), 415–29 <<https://doi.org/10.1016/j.econmod.2020.10.018>>.

²⁶ Dalia Streimikiene and others, 'Sustainable Tourism Development and Competitiveness: The Systematic Literature Review', *Sustainable Development*, 29.1 (2021), 259–71 <<https://doi.org/10.1002/sd.2133>>.

²⁷ Mustafa Rehman Khan and others, 'Sustainable Tourism Policy, Destination Management and Sustainable Tourism Development: A Moderated-Mediation Model', *Sustainability*, 13.21 (2021), 12156 <<https://doi.org/10.3390/su132112156>>.

²⁸ Rachel Dodds and Richard Butler, 'The Phenomena of Overtourism: A Review', *International Journal of Tourism Cities*, 5.4 (2019), 519–28 <<https://doi.org/10.1108/IJTC-06-2019-0090>>.

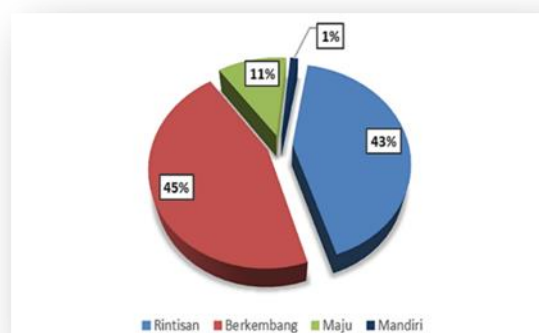
²⁹ Justice Mensah, 'Sustainable Development: Meaning, History, Principles, Pillars, and Implications for Human Action: Literature Review', ed. by Sandra Ricart Casadevall, *Cogent Social Sciences*, 5.1 (2019) <<https://doi.org/10.1080/23311886.2019.1653531>>.



pandemic increase from the previous 179 villages. These villages are classified into several developmental categories: 101 pioneering villages (*desa rintisan*), 107 developing villages (*desa berkembang*), 27 advanced villages (*desa maju*), and 3 independent villages.

Many of these villages continue to face substantial hurdles, particularly regarding human resources and governance. With 101 villages still in the pioneering stage, it is evident that the majority of Bali's tourism villages are in the early phases of development. These pioneering villages generally lack adequate infrastructure, which directly impacts the quality of service provided to tourists. Meanwhile, although the 107 developing villages have shown progress, they still require further enhancement to compete in the global tourism market. The fact that only 27 villages have reached the advanced category and only 3 have become independent highlights a significant and visible developmental gap among tourism villages in the region³⁰.

Figure 1. Percentage of Tourism Villages in Bali Province



One of the primary challenges faced by tourism villages in Bali, particularly those in the pioneering stage, is the limitation of infrastructure. These villages generally suffer from inadequate road access and limited accommodation facilities. Furthermore, the lack of supporting amenities, such as tourism information centers and proper sanitation facilities, remains a significant hurdle. These constraints hinder the inherent potential of the villages, making it difficult to attract a larger volume of visitors especially international tourists who expect higher facility standards. Beyond physical infrastructure, governance and management challenges are equally concerning. Many tourism villages in Bali lack professional tourism management, resulting in ineffective promotion and stagnant product development. This issue is often exacerbated by minimal collaboration with other stakeholders, such as regional governments and the tourism industry. Additionally, Bali's tourism villages face critical human resource capacity gaps. Many local residents lack proficiency in tourism management, digital marketing, and foreign languages. Intensive training and mentorship are urgently required to equip local communities with the necessary skills to manage and develop tourism villages professionally. By strengthening human resource capacity, tourism villages in Bali can more effectively optimize local resources and enhance their appeal to a broader tourist market.

Serangan Village, located in the Serangan Sub-district, South Denpasar District, Denpasar City, is categorized as a pioneering tourism village (*desa wisata rintisan*), having secured the Third National Winner in that category at the 2023 Indonesian Tourism Village Awards (ADWI). Despite its pioneering status, the village possesses robust potential in marine, cultural, and culinary tourism, which continues to undergo intensive development. The village's assets include spiritual-cultural tourism (Sakenan Temple and Asyuhada Mosque), marine activities (fishing, snorkeling, surfing, and mangrove forests), and educational conservation at the Turtle Conservation and Education Center (TCEC). Furthermore, Serangan offers distinct local culinary experiences (grilled fish and *rujak bulung*) alongside adventure activities such as cycling and trekking. This potential is developed under a sustainability framework integrating Blue, Green, and Circular Economy concepts—and involves collaboration with the *Kura-Kura Bali Special Economic Zone (SEZ)*. However, obstacles to sustainable tourism management in Serangan generally include resource limitations, environmental concerns

³⁰ Fafurida Fafurida and others, 'Tourism Village Development: Measuring the Effectiveness of the Success of Village Development', *Economies*, 11.5 (2023), 133 <<https://doi.org/10.3390/economies11050133>>.



stemming from physical development, and socio-cultural challenges. Overcoming these barriers requires a robust pentahelix collaboration model involving regional government, local communities (including traditional villages and fishing groups), and the private sector to ensure a harmonious balance between economic, social, and environmental interests.

Figure 2. Tourism Potential of *Serangan Village*



The ideal sustainable tourism management model based on digital integration and local wisdom applicable to tourism villages in Bali, including *Serangan Village* is an integrated framework rooted in the local philosophy of *Tri Hita Karana* (the harmonious relationship between humans and God, humans and fellow humans, and humans and nature). This model is further supported by the strategic utilization of digital technology to enhance efficiency, visibility, and responsible resource management. This ideal model encompasses several key pillars:

The Foundation of Local Wisdom: Tri Hita Karana and Sad Kerthi

- a) Parhyangan (Relationship with the Divine/Spirituality): Maintaining the sanctity of places of worship and religious rituals, prohibiting excessive commercialization of sacred sites, and ensuring that tourism activities respect the spiritual values of the local community.
- b) Pawongan (Relationship with Fellow Humans/Community): Implementing the Community-Based Tourism (CBT) model, where local residents are actively involved in the planning, management, and economic benefits of tourism. This encompasses local human resource training, fair wages, and ensuring economic development occurs without compromising cultural and social values.
- c) Palemahan (Relationship with Nature/Environment): Ensuring environmentally friendly tourism practices, such as effective waste management (sorting and recycling), the use of local organic products, and the protection of biodiversity.
- d) Sad Kerthi: Applying these values to safeguard the six sources of life (*Atma Kerthi, Samudra/Segara Kerthi, Wana Kerthi, Danu Kerthi, Jagat Kerthi, Jana Kerthi*) to ensure the long-term environmental sustainability of Bali.

Digital Integration in Management

- a) Digital Promotion and Marketing Platforms: Utilizing digital marketing to enhance the visibility of tourism villages and unique local attractions, enabling them to compete effectively against mass tourism.
- b) Smart Destination Management System: Developing an integrated system to manage tourist flows, monitor environmental impacts, and optimize resource allocation in real-time. This may include applications for reservations, digital guides on local etiquette, and platforms for reporting environmental issues.



- c) Digital Literacy Enhancement: Providing ICT (Information and Communication Technology) training to local tourism stakeholders and MSMEs (Micro, Small, and Medium Enterprises) to empower them within the digital ecosystem and address the challenges of low digital literacy.
- d) Transparency and Accountability: Implementing digital technology to assist the government and management bodies in ensuring greater transparency in tourism fund allocation and the reporting of sustainability impacts.

Governance Framework

- a) Multi-stakeholder Collaboration: Establishing robust coordination between the central government, regional governments, traditional villages (*desa adat*), the private sector, and civil society to ensure that tourism policies are aligned with sustainability goals and local wisdom.
- b) Supportive Regulations: Implementing a clear, consistent, and equitable legislative framework that promotes sustainable and environmentally friendly tourism practices.
- c) Continuous Monitoring and Evaluation: Regularly monitoring sustainability performance indicators (environmental, social, and economic) and adapting strategies based on data and feedback, utilizing information collected through digital systems.

By combining the power of digital technology with its deep cultural roots, Bali and specifically *Serangan Village* can create a sustainable tourism model that is not only economically profitable but also preserves its unique environment and culture for future generations. The application of the *Tri Hita Karana* philosophy in the management of tourism in *Serangan Village* underscores the fundamental importance of maintaining a harmonious balance between humanity, nature, and the Divine³¹. This concept teaches that happiness and harmony in life can be achieved by maintaining good relationships with the Divine, fellow human beings, and the environment. By implementing *Tri Hita Karana* within the tourism sector, Bali can create travel experiences that are not only aesthetically appealing but also supportive of community well-being and environmental health. Furthermore, this model can serve as an inspiration for other nations in applying sustainability principles to tourism management. Within the context of tourism, *Tri Hita Karana* can be operationalized through the following measures:

- a) Parhyangan: Enhancing awareness of the importance of maintaining a relationship with the Divine through religious rituals and ceremonies.
- b) Pawongan: Fostering the spirit of *gotong royong* (mutual cooperation) and communal togetherness in the management of resources and the environment.
- c) Palemahan: Prioritizing environmental stewardship and the implementation of sustainable tourism management.

Serangan Village has implemented sustainable tourism based on local wisdom through the Integrated Serangan Tourism Village program (*Dewi Sita*). In this context, 'tourism defense' refers to the collective strategies and efforts aimed at protecting the environment, culture, and local economic well-being from the adverse effects of mass tourism by leveraging traditional Balinese values. Customary and cultural norms in *Serangan Village* remain highly influential and play a pivotal role in tourism development. These local values serve as a guide to maintain the equilibrium between tourism growth and socio-environmental preservation. Active community engagement is heavily emphasized, ranging from the planning stages to implementation. The local Tourism Awareness Group (Pokdarwis) mobilizes the community, including fishing groups, to participate in the development and promotion of eco-friendly tourism packages.

Thus, through the 'Dewi Sita' program, *Serangan Village* has essentially implemented a sustainable tourism strategy by integrating local wisdom with digital technology. 'Defense' in this framework denotes the effort to ensure the long-term environmental, social, cultural, and economic sustainability of the village. However, the primary human resource challenge currently facing Serangan—specifically regarding sustainable development based on local wisdom and digitalization—is rooted in the dual need to enhance technical competencies (digital and managerial) while ensuring active participation and a deep understanding of sustainability principles that respect local heritage. Local

³¹ Natasya Octaviani, Magsyanda Meliana and Putu Gde Arie Yudhistira, 'Encouraging Pro-Environmental Behavior Through Environmental Communication Based on Tri Hita Karana', *Journal of Tourism Sustainability*, 4.2 (2024), 73–82 <<https://doi.org/10.35313/jtospolban.v4i2.122>>.



stakeholders, including Pokdarwis members, may encounter difficulties in adopting and utilizing digital technology for promotion, reservation management, or efficient communication, which in turn limits market reach. Furthermore, there is a potential gap between the tech-savvy younger generation and the older generation who possess a deeper understanding of local wisdom. Bridging these two dimensions requires effective coordination and training programs; therefore, developing competitive tourism human resources is vital for the sustainability of tourism villages in the digital era, particularly in *Serangan Village*.

Human resource development that supports sustainable tourism based on digital integration and local wisdom requires a holistic approach that synergizes modern technology with local cultural values. Through this integrated approach, the development of tourism human resources can achieve a balance between economic progress, technological utilization, and the long-term preservation of cultural heritage and the environment. The objective is to create a tourism ecosystem that is not only efficient and globally competitive but also environmentally and socially responsible. In this context, human resources refer to the inherent potential of individuals to fulfill their roles as social beings capable of adaptation and transformation. This capability enables individuals to manage themselves and optimize the use of natural resources to achieve well-being within a balanced and sustainable life. Therefore, investing in high-quality human resource development will not only enhance individual competencies but also generate a positive impact on the overall sustainability and successful management of tourism villages ³².

The Island of the Gods, renowned for its natural splendor and cultural richness, has long positioned the *Tri Hita Karana* philosophy as the fundamental pillar of its social, spiritual, and spatial life. Literally translated as the 'three causes of well-being,' this concept encompasses three essential pillars of harmony: the relationship between humanity and the Divine (*Parhyangan*), the relationship among fellow human beings (*Pawongan*), and the relationship with the environment (*Palemahan*). Normatively, *Tri Hita Karana* serves as a holistic framework that guarantees sustainable development and true prosperity moksa and jagadhita for the Balinese people.

However, within the turbulent reality of mass tourism driven by global market interests, the implementation of *Tri Hita Karana* is often distorted and suffers from significant degradation. The tourism sector, which has been the backbone of Bali's economy since the 1970s, now acts as a double-edged sword; while it brings material prosperity, it simultaneously threatens the philosophical and ecological foundations held sacred by Balinese society. This gap between philosophical idealism and commercial pragmatism in Bali has created a reality that demands a profound evaluation of *Tri Hita Karana* ensuring it remains more than a mere nominal existence, but rather a preserved essence.

The first pillar, Parhyangan, emphasizes the importance of maintaining a harmonious relationship with the Divine through religious devotion, rituals, and the preservation of sacred sites (*Pura*). This pillar serves as the soul that imparts a sacred character to Balinese culture, making it unique on the global stage. Ideally, tourism should respect and support the sustenance of this spirituality. However, amidst the rapid expansion of the tourism sector, Parhyangan has undergone massive commodification. Temples, which originally functioned exclusively as centers of worship, have increasingly been transformed into 'tourist objects' or 'scenic backdrops' for photography.

Pawongan, the second pillar, focuses on harmonious and balanced relationships among fellow human beings. This principle is embodied in Balinese communal values, such as the spirit of gotong royong (mutual cooperation) and a robust community system rooted in the banjar (village neighborhood) and family units a concept the Balinese endearingly refer to as menyama braya. Nevertheless, the capitalization of the tourism sector has triggered a significant sociological shift and caused imbalances that threaten communal cohesion.

The final pillar, Palemahan, is the foundation of harmony with the natural environment. The tangible expression of this pillar is found in the Subak system (a UNESCO-recognized traditional irrigation network) and spatial planning concepts that prohibit buildings from exceeding the height of a coconut tree, while upholding the sanctity of mountains and the sea. In its truest essence, Palemahan is a manifestation of Parhyangan itself.

³² Saifuddin Saifuddin and others, 'Impact of Human Resource Strategy on Service Quality, Sustainable Tourism', *Administrative Journal*, 2025, 103–10 <<https://doi.org/10.71309/administrare.v12i1.7853>>.



This is where the conflict between the implementation of *Tri Hita Karana* and the reality of tourism becomes apparent. Often, in the pursuit of profit and tourist capacity, development in Bali has systematically sacrificed the principle of *Palemahan*. The resulting impacts are a water crisis and massive land conversion. The construction of hotels, villas, and resorts requires extensive land and, more critically, immense water resources. Hundreds of hectares of productive rice fields—the heart of the Subak system have been converted into concrete structures and swimming pools

This conversion not only destroys the agrarian cultural heritage but also drastically reduces water catchment areas. Consequently, local communities in many regions now face clean water scarcity, as water has been diverted to meet the demands of the tourism industry. Thus, while *Tri Hita Karana* remains a robust and relevant philosophy, in the face of mass tourism, its implementation is no longer an internalized way of life, but rather a principle under siege.

Overall, tourism attraction managers in several Balinese tourism villages are facing marketing challenges stemming from low visitation rates and accessibility issues that require continuous community involvement. It is believed that these problems can be addressed through a digitalization approach that remains firmly rooted in local wisdom. In this sense, it is crucial to prioritize the paradigm of Community-Based Tourism (CBT). This paradigm mandates that the development of cultural and tourism resources must be sensitive and responsive to the presence and needs of the local community. Such support must emerge from the entire social fabric not only from those who directly benefit from cultural and tourism activities but also from those who benefit indirectly. All community members must support local involvement to ensure that the development and management of culture and tourism succeed at the grassroots level where the tourism is being developed ³³.

The implementation of a sustainable tourism management model based on digital integration and local wisdom necessitates collaboration across various stakeholders. Local wisdom defined as the knowledge, ingenuity, and sagacity developed by local communities through continuous long-term experience functions not only as a tool for problem-solving but also as a vital regulatory mechanism for maintaining sustainable tourism in the current digital era. This wisdom represents a unique cultural attribute of indigenous societies. Practiced for centuries, local wisdom reflects the broader national culture that has provided both economic and spiritual prosperity for the diverse ethnic groups that have formed the Indonesian nation since 1945. Conceptually, local wisdom is an integral part of culture and, more specifically, a component of traditional knowledge systems. It possesses deep historical roots and exists within the collective human consciousness, relying on philosophies, values, ethics, and institutionalized traditional behaviors to manage various sectors, including the environment, natural resources, human resources, cultural assets, economy, law, and security.

Conclusion

Preserving local wisdom is imperative for sustainable tourism, as it serves as the primary source of authenticity, creating unique experiences for travelers, strengthening cultural identity, and fostering community participation. Moreover, it ensures that economic development does not compromise the environment or cultural heritage, thereby securing enduring benefits for future generations. Without local wisdom, tourism becomes a mere commodity, stripped of its intrinsic value. Therefore, the ideal sustainable tourism management model for Bali applicable to tourism villages such as Serangan is an integrated framework deeply rooted in the *Tri Hita Karana* philosophy (the harmonious relationship between humanity and the Divine, among fellow humans, and with nature). This model is further empowered by the strategic utilization of digital technology to enhance efficiency, visibility, and responsible resource management.

References

André, Christophe, Petre Caraiani, Adrian Cantemir Călin and Rangan Gupta, 'Can Monetary Policy Lean against Housing Bubbles?', *Economic Modelling*, 110 (2022), 105801 <<https://doi.org/10.1016/j.econmod.2022.105801>>

³³ Asmaria Asmaria and others, 'Community Involvement in the Development of Tourism Villages in Turgak Village Belalau Subdistrict West Lampung', *Jurnal Noken: Ilmu-Ilmu Sosial*, 11.1 (2025), 115–20 <<https://doi.org/10.33506/jn.v11i1.4080>>.



- Apriani, Ari, Kamsariaty Kamsariaty, Nia Sarinastiti, Hilda Yuliastuti and Sukmayadi Sukmayadi, 'Toward a Greener Future: Exploring Sustainable Practices in Travel and Tourism in Bali', *Journal of Sustainable Tourism and Entrepreneurship*, 4 (2024), 241–52 <<https://doi.org/10.35912/joste.v4i3.2092>>
- Asmaria, Asmaria, Rini Setiawati, Eko Aziz Apriadi and Saniyati Istiqomah, 'Community Involvement in the Development of Tourism Villages in Turgak Village Belalau Subdistrict West Lampung', *Jurnal Noken: Ilmu-Ilmu Sosial*, 11 (2025), 115–20 <<https://doi.org/10.33506/jn.v11i1.4080>>
- Asriani, Asriani, 'Bibliometric Analysis on Sustainable Development Goals (SDGs): Decent Work and Economic Growth', *International Journal Of Education, Social Studies, And Management (IJESSM)*, 4 (2024), 625–37 <<https://doi.org/10.52121/ijessm.v4i2.330>>
- Astuti, Ni Nyoman Sri, Putu Tika Virginiya, Ni Ketut Bagiastuti and Elvira Septevany, 'The Future of Green Tourism in Bali: Challenges and Opportunities', *Journal of Applied Sciences in Travel and Hospitality*, 7 (2024), 178–95 <<https://doi.org/10.31940/jasth.v7i2.178-195>>
- Bennett, Nathan James, Jessica Blythe, Carole Sandrine White and Cecilia Campero, 'Blue Growth and Blue Justice: Ten Risks and Solutions for the Ocean Economy', *Marine Policy*, 125 (2021), 104387 <<https://doi.org/10.1016/j.marpol.2020.104387>>
- Dodds, Rachel and Richard Butler, 'The Phenomena of Overtourism: A Review', *International Journal of Tourism Cities*, 5 (2019), 519–28 <<https://doi.org/10.1108/IJTC-06-2019-0090>>
- Dolezal, Claudia and Marina Novelli, 'Power in Community-Based Tourism: Empowerment and Partnership in Bali', *Journal of Sustainable Tourism*, 30 (2022), 2352–70 <<https://doi.org/10.1080/09669582.2020.1838527>>
- Fafurida, Fafurida, Yunastiti Purwaningsih, Mulyanto Mulyanto and Suryanto Suryanto, 'Tourism Village Development: Measuring the Effectiveness of the Success of Village Development', *Economies*, 11 (2023), 133 <<https://doi.org/10.3390/economies11050133>>
- Ginjar, Retno, Asri Laksmi Riani and Intan Novela Qurrotul Aini, 'Local Champion: A New Leadership Perspective to Create Sustainable Tourism in Rural Communities', *The Eastasouth Management and Business*, 2 (2024), 105–17 <<https://doi.org/10.58812/esmb.v2i02.196>>
- Gössling, Stefan, Daniel Scott and C Michael Hall, 'Pandemics, Tourism and Global Change: A Rapid Assessment of COVID-19', *Journal of Sustainable Tourism*, 29 (2021), 1–20 <<https://doi.org/10.1080/09669582.2020.1758708>>
- Januar, Rizky, 'Implementation and Challenges of Sustainable Tourism Programs in Bali', *Bali Tourism Journal*, 8 (2024), 33–37 <<https://doi.org/10.36675/btj.v8i2.109>>
- Jóźwiak, Marek and Patrycja Sieg, 'Tourism Development in Post-Industrial Facilities as a Regional Business Model', *Sustainability*, 13 (2021), 2028 <<https://doi.org/10.3390/su13042028>>
- Kang, Juhee, 'Identifying Antecedents and Consequences of Well-Being: The Case of Cruise Passengers', *Tourism Management Perspectives*, 33 (2020), 100609 <<https://doi.org/10.1016/j.tmp.2019.100609>>
- Khan, Mustafa Rehman, Haseeb Ur Rehman Khan, Chen Kim Lim, Kian Lam Tan and Minhaz Farid Ahmed, 'Sustainable Tourism Policy, Destination Management and Sustainable Tourism Development: A Moderated-Mediation Model', *Sustainability*, 13 (2021), 12156 <<https://doi.org/10.3390/su132112156>>
- Mensah, Esi Akyere, Elizabeth Agyeiwaah and Felix Elvis Otoo, 'Re-Conceptualizing Volunteer Tourism Organizations Roles: A Host Perspective', *Tourism Management Perspectives*, 37 (2021), 100785 <<https://doi.org/10.1016/j.tmp.2020.100785>>
- Mensah, Justice, 'Sustainable Development: Meaning, History, Principles, Pillars, and Implications for Human Action: Literature Review', ed. by Sandra Ricart Casadevall, *Cogent Social Sciences*, 5 (2019) <<https://doi.org/10.1080/23311886.2019.1653531>>
- Méreiné-Berki, Boglárka, György Málovics and Remus Crețan, 'You Become One with the Place: Social Mixing, Social Capital, and the Lived Experience of Urban Desegregation in the Roma Community', *Cities*, 117 (2021), 103302 <<https://doi.org/10.1016/j.cities.2021.103302>>
- Ni Wayan Anggreni, I Made Artayasa and I Wayan Sukita, 'Challenges And Opportunities Of Green Tourism Management: A Case Study Of One Of The Ecotourism Areas In Bangli, Tabanan, And Jembrana In Bali Province', *Journal of Tourism Studies and Applications*, 6 (2025), 18–26 <<https://doi.org/10.53356/diparojs.v6i1.114>>
- Octaviani, Natasya, Magsyanda Meliana and Putu Gde Arie Yudhistira, 'Encouraging Pro-Environmental Behavior Through Environmental Communication Based on Tri Hita Karana', *Journal of Tourism Sustainability*, 4 (2024), 73–82



<<https://doi.org/10.35313/jtospolban.v4i2.122>>

- Saifuddin, Saifuddin, Bahrnunborahima Bahrnunborahima, Novarizcapratiwira Novarizcapratiwira and Radenhario Radenhario, 'Impact of Human Resource Strategy on Service Quality, Sustainable Tourism', *Administrative Journal*, 2025, 103–10
<<https://doi.org/10.71309/administrare.v12i1.7853>>
- Shantika, Budi, Ni Kadek Winda Yanti and Rudi Rindang Septiadji, 'The Impact of Tourism Pollution and Entrepreneurs' Role to Finding Sustainable Waste Management Solutions in Kuta, Seminyak, and Ubud', *International Journal of Green Tourism Research and Applications*, 7 (2025), 127–43 <<https://doi.org/10.31940/ijogtra.v7i2.127-143>>
- Sigala, Marianna, 'Tourism and COVID-19: Impacts and Implications for Advancing and Resetting Industry and Research', *Journal of Business Research*, 117 (2020), 312–21
<<https://doi.org/10.1016/j.jbusres.2020.06.015>>
- Streimikiene, Dalia, Biruta Svagzdiene, Edmundas Jasinskas and Arturas Simanavicius, 'Sustainable Tourism Development and Competitiveness: The Systematic Literature Review', *Sustainable Development*, 29 (2021), 259–71 <<https://doi.org/10.1002/sd.2133>>
- Sun, Zhaoyang, Ling Liu, Runquan Pan, Yiwei Wang and Bingbing Zhang, 'Tourism and Economic Growth: The Role of Institutional Quality', *International Review of Economics & Finance*, 98 (2025), 103913 <<https://doi.org/10.1016/j.iref.2025.103913>>
- Supriyanto, Eko Eddy, 'Blue Tourism', *Indonesian Tourism Journal: Indonesian Journal of Tourism Research and Development*, 16 (2022), 138–48 <<https://doi.org/10.47608/jki.v16i22022.138-148>>
- Tandafatu, Natalia Kristiani, Lindiana Ermilinda and Yohanes Brekmans M Darkel, 'Digital Transformation in Tourism: Exploring the Impact of Technology on Travel Experiences', *International Journal of Multidisciplinary Approach Sciences and Technologies*, 1 (2024), 55–64
<<https://doi.org/10.62207/w3vsg352>>
- Utama, I Gusti Bagus Rai, I Nengah Suardhana, I Gede Sutarya and Ni Putu Dyah Krismawintari, 'Assessing the Impacts of Overtourism in Bali: Environmental, Socio-Cultural, and Economic Perspectives on Sustainable Tourism', *Tourism Spectrum: Diversity & Dynamics*, 1 (2024), 81–92
<<https://doi.org/10.56578/tsdd010202>>
- Vu, Trung V., 'Statehood Experience and Income Inequality: A Historical Perspective', *Economic Modelling*, 94 (2021), 415–29 <<https://doi.org/10.1016/j.econmod.2020.10.018>>
- Wulandari, Ni Putu Paramitha, 'Multidimensional Challenges Toward Sustainable Development Tourism in Bali', *Bali Tourism Journal*, 8 (2024), 56–60 <<https://doi.org/10.36675/btj.v8i3.116>>
- Yakubovskiy, Sergiy and Olha Kyrychenko, 'The Role Of Digitalization In The Development Of The Global Tourism Industry', *Odesa National University Herald. Economy*, 29 (2024)
<<https://doi.org/10.32782/2304-0920/4-102-15>>
- Zainuddin, Abdul Malik Karim Amrullah and Indah Aminatuz Zuhriyah, 'The Challenges of Developing Islamic Education Curriculum and Strategies for Its Development in Facing Future Competency Demands', *Tafkir: Interdisciplinary Journal of Islamic Education*, 6 (2025), 111–26
<<https://doi.org/10.31538/tijie.v6i1.1316>>
- Zhu, Peng, Xiaoting Chi, Hyungseo Bobby Ryu and Heesup Han, 'Experience Economy and Authenticity in the Heritage Tourism Sector: A Multiple-Dimensional Approach', *Acta Psychologica*, 257 (2025), 105118 <<https://doi.org/10.1016/j.actpsy.2025.105118>>

