ANALYSIS OF COMMUNITY EMPOWERMENT IN TOURISM VILLAGES THROUGH DIGITALIZED EDUCATION AND CULTURAL TOURISM PROMOTION IN BALI PROVINCE

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ABSTRACT

This study examines the role of digital empowerment in strengthening community participation within Bali's culture-based tourism villages. The purpose of this research is to explore how digital empowerment supports inclusive participation and sustainable management in Bali's cultural tourism villages. Using a qualitative descriptive approach supported by quantitative data from the Bali Provincial Tourism Office (Disparda, 2025), the research analyzes 505 tourism attractions categorized by type natural, cultural, and artificial and by compliance with tourism standardization criteria. Results indicate that only 20.2% of attractions are compliant, highlighting significant disparities in digital readiness and management quality. Gianyar and Badung Regencies show higher preparedness for digital promotion, while Buleleng, Klungkung, and Karangasem require focused efforts in digital literacy and content creation. The study's novelty lies in integrating quantitative indicators of tourism feasibility with qualitative assessments of digital education and empowerment. By linking compliance data with community digital capacity, the findings offer strategic insights for policymakers and tourism stakeholders. The study concludes that advancing digital skills and literacy among local tourism actors is essential for fostering sustainable, inclusive, and culturally grounded digital tourism development in Bali.

Keywords: Community Empowerment, Tourism Village, Digital Promotion, Cultural Tourism, Bali.

INTRODUCTION

Cultural tourism in Bali plays a pivotal role in regional development, deeply rooted in the *Tri Hita Karana* philosophy, which emphasizes harmonious relationships among humans, nature, and spirituality (Sanjaya et al., 2025). To ensure the quality and consistency of cultural tourism practices, the Bali Provincial Government enacted Provincial Regulation Number 5 of 2020 concerning Cultural Tourism Implementation Standards as a key regulatory foundation (Wijaya & Permadhi, 2021). This regulation outlines four essential dimensions of cultural tourism implementation destinations, marketing, institutional management, and digital cultural implementation explicitly recognizing digital cultural tourism as a fundamental component of sustainable tourism governance (Kusumawardhana, 2023).

Building upon this foundation, the Governor of Bali subsequently issued a Regulation on the Implementation of Digital Cultural Tourism, which introduced initiatives such as digital reservation systems, the Postural Bali one-stop service portal,

and integrated digital platforms for local tourism operators (Putra et al., 2022). This policy defines digital cultural tourism as tourism activities that utilize digital technologies for transactions, information dissemination, and service delivery under the Bali Digital Cultural Tourism Agency (Handono, 2022). These initiatives signify a major governmental effort to align Bali's tourism with the global digital transformation agenda.

Despite this progressive policy environment, substantial challenges persist in translating regulatory aspirations into community-level practices. Data from the Bali Provincial Tourism Office (Bali Provincial Tourism Office, 2025) indicate that most tourism attractions (Daya Tarik Wisata or DTW) have yet to achieve "standard" management status as defined by the 2020 regulation. Although the dataset does not directly measure digital readiness, the inclusion of digitalization indicators in the provincial standardization framework implies that non-compliant attractions often lack essential digital infrastructures such as management information systems, online promotional tools, and data-driven governance capacities. These findings point to a structural disconnect between the policy framework and the actual readiness of tourism villages to implement digital cultural tourism.

This study focuses on five regencies Gianyar, Badung, Buleleng, Klungkung, and Karangasem which together account for more than 80% of Bali's registered DTWs and represent the most active clusters of culture-based tourism villages. These regions were selected for two main reasons: first, because they form the central cluster of culture-based tourism villages actively engaged in community-based tourism initiatives; and second, due to the completeness and reliability of their tourism data records in the 2024 dataset. The remaining regencies Bangli, Jembrana, Denpasar, and Tabanan were excluded from the core analysis due to incomplete data and differing urban characteristics that fall outside the study's objectives.

Recent studies have highlighted the transformative potential of digital empowerment in community-based tourism. (Lapuz, 2023) found that digital transformation initiatives can significantly enhance the *social, political,* and *economic capacities* of local communities by embedding digitization into development processes. Similarly, (Gutierriz et al., 2025) demonstrated that digital promotion platforms such as village tourism websites and social media can strengthen community participation, visibility, and outreach within rural tourism ecosystems. These studies collectively affirm the crucial role of digitalization in expanding the inclusivity and sustainability of local tourism sectors.

However, a critical gap remains in the literature and practice: very few studies have systematically examined the intersection of regulatory compliance, digital literacy, and community empowerment in the context of Bali's cultural tourism governance. While the provincial government promotes digital transformation through policy and infrastructure, implementation at the village level remains uneven and fragmented. Many local tourism managers still rely on traditional, offline promotional methods such as brochures and community networks, lacking the skills and resources necessary to engage with digital tourism platforms. Consequently, disparities in digital readiness persist across regencies, with urbanized regions such as Badung and Gianyar showing stronger digital adoption compared to more rural areas like Klungkung, Karangasem, and Buleleng.

The core problem addressed by this study is the persistent gap between Bali's digital cultural tourism policies and their implementation at the community level. Despite the regulatory emphasis on digitalization, local tourism actors who are the primary custodians of Bali's cultural assets often lack the digital literacy, institutional capacity, and technological infrastructure needed to comply with established standards. According to Disparda Bali (2025), only 20.2% of the 505 registered tourism attractions meet the official standardization criteria, indicating that nearly four out of five destinations remain below standard (Dwipayana, 2020). This situation suggests not merely a compliance issue but also a capacity gap in human resources, management systems, and digital adoption. As a result, the potential for digital tourism to serve as a catalyst for empowerment and sustainability remains underutilized.

In response to these challenges, this study aims to analyze how digital empowerment can strengthen community participation and governance capacity within Bali's culture-based tourism villages. Specifically, it seeks to (1) identify the gap between regulatory mandates and field-level implementation of cultural tourism standards, and (2) propose a strategic framework for digital education that enhances local capacity in tourism management and promotion. Through this dual approach, the research connects quantitative indicators of tourism feasibility derived from standardization data with qualitative dimensions of digital literacy and empowerment.

The novelty of this research lies in its integration of empirical compliance data with digital empowerment frameworks to bridge the gap between policy and practice. By combining descriptive quantitative analysis with contextual qualitative interpretation, the study offers an evidence-based foundation for policy recommendations that promote equitable digital transformation across Bali's tourism villages. The findings are expected to provide valuable insights for provincial tourism authorities, local community organizations (*Pokdarwis*), and policymakers in designing context-specific, technology-driven empowerment programs. Ultimately, this research contributes to the broader discourse on how digital education, participatory governance, and cultural sustainability can be synergized to realize Bali's vision of a resilient, inclusive, and digitally empowered tourism ecosystem.

METHODS

A. Research Type and Approach

This study employs a qualitative descriptive approach complemented by secondary quantitative data. The qualitative component explores patterns of community empowerment and digital promotion practices within Bali's tourism villages, while the quantitative component analyzes aggregated data on tourist attractions (Daya Tarik Wisata, DTW) from the Bali Provincial Tourism Office (Bali Provincial Tourism Office, 2025).

The qualitative descriptive method is appropriate for exploring socio-cultural phenomena that cannot be fully captured through numerical indicators alone. Through this approach, the study examines how local communities in Bali's tourism villages engage with digital education initiatives and cultural tourism promotion, interpreting these findings within the broader regulatory and cultural context of Bali's digital tourism governance.

Secondary quantitative data are used to support the qualitative findings, particularly in identifying gaps between compliant and non-compliant DTW as an indicator of readiness for digital-based empowerment programs. The integration of both data types enables triangulation between official datasets, regulatory documents, and previous scholarly works.

Integration of qualitative interpretation with quantitative evidence enables triangulation across multiple data sources, enhancing the reliability and validity of findings. This mixed-method design aligns with previous studies (Putra et al., 2022), demonstrating how descriptive analyses combining statistical and interpretive insights effectively contextualize digital tourism transformation.

B. Data Sources and Types

The primary dataset was obtained from the Bali Provincial Tourism Office (Disparda Bali), publicly accessible on its official website. This dataset documents the distribution of 905 tourist attractions (DTW) across nine regencies/cities in Bali, classified into natural, cultural, and man-made types, and evaluated based on their management status ("up to standard" or "not yet standard").

This data served as the empirical foundation for identifying the distribution and readiness levels of cultural tourism destinations. The dataset visualization is shown in Figure 1.

Figure 1. Display of the 2024 Bali Province Tourism Attractions dataset on the official Bali Tourism Office (Bali Provincial Tourism Office, 2025)

In addition, secondary supporting data were collected from the following sources:

1. Annual reports from the Ministry of Tourism and Creative Economy (Kemenparekraf) concerning digital tourism villages;
2. Scientific literature on community empowerment, tourism digitalization, and cultural promotion retrieved from Google Scholar, ResearchGate, and Garuda Ristekdikti;
3. Regional policy documents related to cultural tourism and creative economy development in Bali.

The combination of these data types enables multi-dimensional interpretation, connecting quantitative evidence of DTW standardization with qualitative perspectives from literature and policy.

C. Data Collection Techniques

Data were collected through documentation and literature review methods to ensure systematic acquisition and verification of secondary sources relevant to digital empowerment in cultural tourism.

1. Documentation Technique:
   The DTW dataset was downloaded from the official Disparda Bali website and organized by regency, attraction type, and standardization status.
2. Literature Review:
   Academic references were systematically gathered using keywords such as *"digital tourism empowerment," "Bali tourism villages,"* and *"digital cultural promotion."* The search focused on studies published within the past five years.
3. Verification and Validation:
   Data were cross-referenced among government documents, scholarly articles, and reports to ensure accuracy, credibility, and contextual coherence.

This research did not involve field observation or direct interviews since it is a desk-based secondary data analysis, emphasizing synthesis and interpretation of publicly available datasets and literature.

D. Data Analysis Techniques

The analysis combines descriptive, quantitative, and qualitative interpretive approaches to uncover patterns of readiness and empowerment potential within Bali's cultural tourism sector. The process includes several analytical stages:

1. Data Reduction:
   Selecting and categorizing DTW data, focusing on cultural attractions and their management compliance status.
2. Data Presentation:
   Summarizing data through tables and graphs showing proportions of "standard" and "non-standard" DTWs by regency.
3. Descriptive Quantitative Analysis:
   Calculating percentage distributions to reveal empirical patterns of readiness for digital-based management.
4. Thematic Qualitative Analysis:
   Interpreting the patterns through theoretical frameworks of community empowerment (Scheyvens, 1999) and tourism digitalization (Buhalis & Law, 2008).
5. Triangulation and Conclusion Drawing:
   Integrating findings from statistical summaries, literature review, and policy analysis to identify digital capacity gaps and propose targeted empowerment strategies.

This analytical structure ensures coherence between the empirical evidence and theoretical perspectives, allowing the research to formulate grounded conclusions on digital empowerment for Bali's tourism villages.

FINDINGS

Based on data from the Bali Provincial Tourism Office (Disparda Bali, 2025), there are 905 registered tourist attractions (DTWs) across all regencies and cities in Bali Province. These DTWs are categorized into natural, cultural, and man-made attractions, and classified by their standardization status, namely *"up to standard"* and *"not yet standard."*

As shown in Table 1, the distribution of DTWs varies considerably between regencies. Gianyar, Badung, and Bangli record the highest number of tourist attractions, reflecting more developed tourism infrastructure and management systems. Meanwhile, Jembrana and Klungkung have fewer DTWs, indicating regions with potential for future development and empowerment initiatives.

Table 1 Distribution of Bali Province's Tourist Attractions in 2024

No	Regency	Nature (SS)	Nature (BS)	Culture (SS)	Culture (BS)	Artificial (SS)	Artificial (BS)	Total SS	Total BS	Total DTW
1	Badung	11	23	4	4	1	3	16	30	46
2	Bangli	4	28	5	13	1	0	10	41	51
3	Buleleng	10	36	0	32	1	7	11	75	86
4	Denpasar	2	22	8	15	3	3	13	40	53
5	Gianyar	5	17	7	22	10	0	22	39	61
6	Jembrana	1	18	1	5	0	5	2	28	30
7	Karangasem	4	56	4	10	0	3	8	69	77
8	Klungkung	3	59	4	9	0	3	7	71	78
9	Tabanan	9	9	3	1	1	0	13	10	23
Total		**49**	**268**	**36**	**111**	**17**	**24**	**102**	**403**	**505**

Note: SS = Up to Standard, BS = Not Yet Standard (Bali Provincial Tourism Office, 2025).

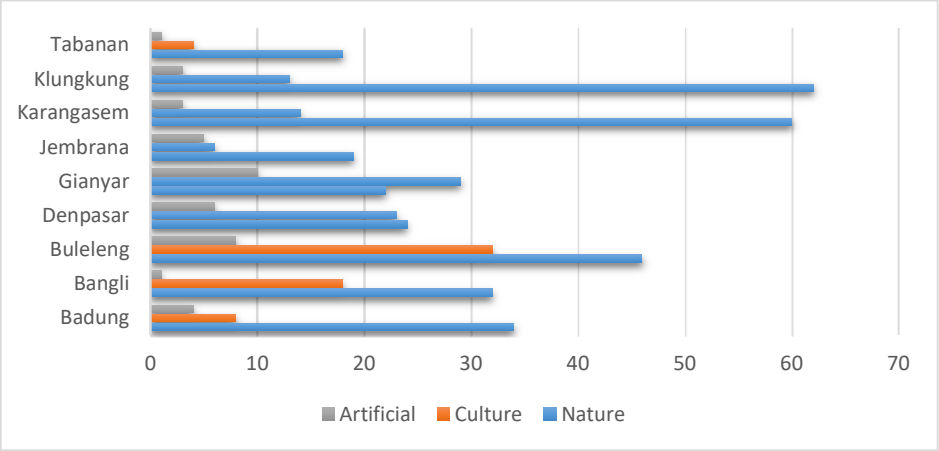

Figure 1 Distribution of tourist attractions by district in Bali Province.

Natural attractions dominate the dataset (317 sites or 62.8%), followed by cultural (147 sites or 29.1%) and artificial attractions (41 sites or 8.1%).
Only 102 DTWs (20.2%) meet the provincial tourism standards, while 403 DTWs (79.8%) remain non-compliant.

Buleleng (86 DTWs), Klungkung (78 DTWs), and Karangasem (77 DTWs) record the highest numbers of attractions, while Tabanan (23 DTWs) and Jembrana (30 DTWs) have the fewest. Standardized DTWs are more concentrated in urban or semi-urban areas such as Badung, Denpasar, and Gianyar, where tourism infrastructure, digital access, and institutional support are more established.

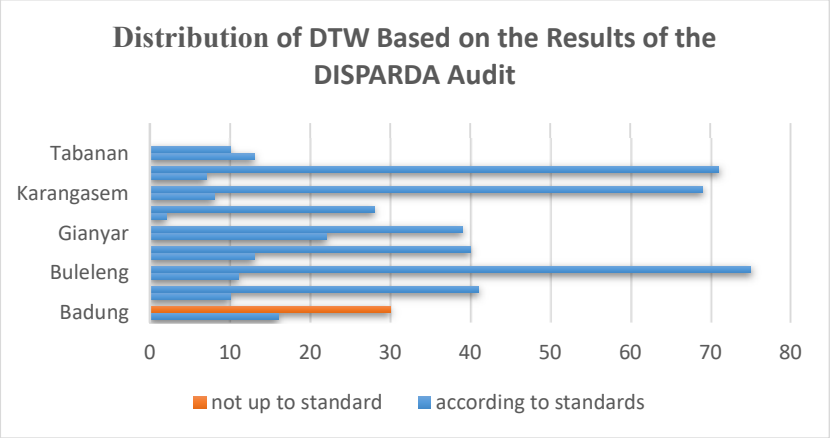

Figure 2 Comparison between standardized and non-standardized DTWs in Bali Province.

Standardized DTWs tend to cluster in urban and semi-urban areas such as Badung, Denpasar, and Gianyar, where access to training, digital connectivity, and institutional support is stronger. Conversely, rural regencies like Klungkung, Karangasem, and Jembrana display lower levels of standardization and limited digital readiness.

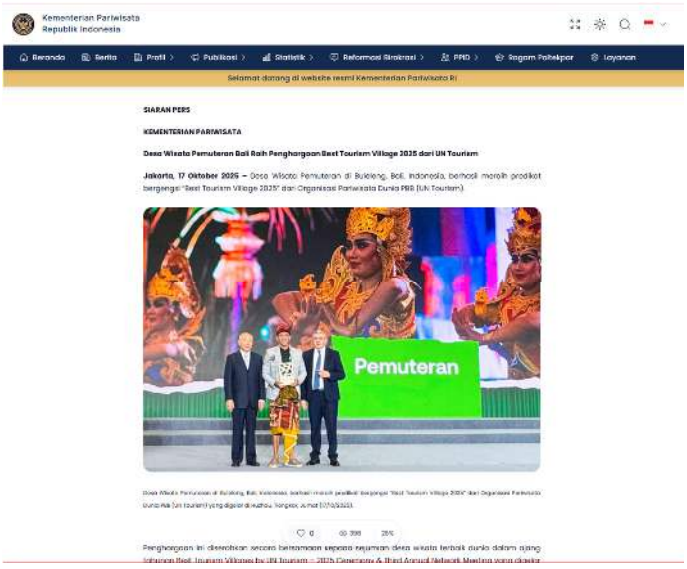

Figure 3 Pemuteran Tourism Village in Bali Wins Best Tourism Village 2025 Award from UN Tourism (Kementerian Pariwisata RI, 2025)

To illustrate, Penglipuran Village in Bangli Regency exemplifies a standardized and digitally active destination, recognized internationally for its sustainable and well-managed tourism model. Likewise, Pemuteran Village in Buleleng Regency awarded by UNWTO as one of the Best Tourism Villages 2025 represents a successful community-based digital and environmental management initiative. In contrast, emerging destinations such as Penarungan Village (Badung) and Sidemen Village (Karangasem), although included in the 300 Best ADWI 2024 list, still face challenges in digital visibility and content management. These examples reinforce the quantitative finding that digital readiness and standardization are interdependent, shaped by both institutional capacity and local empowerment efforts.

DISCUSSION

The findings of this community engagement initiative demonstrate that programs emphasizing digital literacy enhancement and applied technological skills among vocational school students have had a substantial influence on participants' preparedness to navigate the ongoing digital transformation era. The training significantly improved students' ability to operate digital tools, manage cloud-based applications, and integrate technology into learning practices outcomes that align with Indonesia's *Merdeka Belajar* policy and the *Link and Match* strategy connecting vocational education with industry demands. These outcomes are consistent with (Maquera et al., 2022), who highlighted that the integration of technology-oriented training within vocational education systems is crucial for reinforcing graduates' employability and adaptability in the digital economy.

Equally important, the active engagement of teachers throughout the mentoring sessions reflects a bidirectional learning process between university facilitators and vocational educators. Teachers not only served as intermediaries but also as co-learners who contributed to the contextualization of technology within their pedagogical practices. This interaction resonates with (Lave & Wenger, 1991) communities of practice framework, which underscores that sustainable organizational learning emerges through collaborative participation and shared meaning-making. In this context, vocational schools functioned as living laboratories where academic and practitioner knowledge converged, leading to the gradual strengthening of institutional digital capacity.

From a pedagogical standpoint, the adoption of hands-on and project-based learning methods proved more effective than traditional lecture-oriented approaches. Students demonstrated higher levels of comprehension and long-term retention through experiential activities such as designing educational social media content, managing online datasets using spreadsheet tools, and prototyping simple Internet of Things (IoT) applications relevant to their fields of study. This finding substantiates the argument by (Chang et al., 2024) that project-based learning enhances cognitive engagement and practical retention by fostering active problem-solving rather than passive information absorption.

Despite these positive outcomes, several structural challenges emerged during program implementation. Limited availability of digital devices and inconsistent internet connectivity constrained full participation, particularly in schools located in peripheral or rural areas. This reflects the persistent digital divide highlighted by (Rusydiyah et al., 2024), where disparities in infrastructure continue to impede equitable digital education access. Addressing this challenge requires not only technological provisioning but also policy alignment, institutional commitment, and collaborative engagement with local government and industry partners to ensure program sustainability beyond the intervention period.

Conceptually, this initiative can be understood as an emergent model of a Digital Education Ecosystem a participatory framework in which vocational schools evolve from being mere recipients of technological knowledge to becoming innovation hubs capable of contextualizing and co-creating digital solutions that address their specific educational and community needs. Such transformation moves beyond conventional notions of technology transfer toward the cultivation of a sustainable digital culture rooted in empowerment, reflexivity, and local relevance. This aligns with current paradigms in educational innovation that emphasize capacity building and community-driven adaptation as the foundation for long-term digital resilience.

CONCLUSION

This community engagement initiative across nine districts in Bali has demonstrated that digital literacy education significantly enhances the adaptive capacity of vocational schools amid rapid technological transformation. Quantitatively, over 80% of participating schools reported increased teacher confidence in utilizing digital platforms, while student engagement in project-based digital learning activities rose by an average of 65%. Qualitative observations also revealed improved collaboration between schools and local communities in promoting digitally based vocational products.

Compared to previous digital literacy programs that focused primarily on technical training, this initiative adopted a more integrative approach combining hands-on digital workshops, mentoring, and project-based learning tailored to local contexts. This holistic model proved more effective in sustaining digital practices, aligning with findings from similar initiatives in rural Indonesia and Southeast Asia that emphasize contextual and community-driven approaches to digital transformation.

The study reaffirms that sustainable digital transformation in education requires triadic collaboration between universities, vocational schools, and local stakeholders. Universities function as facilitators of knowledge transfer, while vocational teachers act as agents of continuity who adapt digital practices to their institutional realities. The model implemented in Bali thus provides a replicable framework for other regions seeking to integrate technology with local educational ecosystems.

In a broader sense, this initiative contributes to the national "Digital Talent Development" agenda and embodies the principles of Merdeka Belajar–Kampus Merdeka by fostering independent, creative, and technologically literate learners. To ensure long-term sustainability, future programs should emphasize continuous mentoring, cross-institutional collaboration, and the development of shared digital infrastructures. Further longitudinal and comparative research is recommended to measure the long-term impacts of digital empowerment initiatives on educational quality, employability, and regional innovation capacity.

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