



Digital Literacy Framework Based on Local Wisdom for Tourism Entrepreneurs in Luwansa Beach Resort, Labuan Bajo

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ABSTRACT

Tourism digitalization in the super-priority destination of Labuan Bajo has not been matched by the readiness of local entrepreneurs, particularly those around Luwansa Beach Resort, who continue to face a digital literacy gap alongside minimal integration of Manggarai cultural values into their online marketing practices. This study aims to formulate and test a locally-rooted digital literacy framework for tourism entrepreneurs in the resort area. An applied qualitative approach was employed using a Research and Development scheme based on the DESIGN model (Define, Explore, Structure, Implement, Gauge, Narrow), involving eight informants consisting of six local entrepreneurs and two resort management representatives, with data gathered through observation, in-depth interviews, and document review, then analyzed thematically. The findings reveal that two trial rounds produced gradual improvement, ranging from basic technological understanding to tangible changes such as culturally themed content production and increased online interaction with tourists. Device availability, entrepreneurial motivation, and resort management support emerged as key driving factors, while limited visual content creation skills and lack of sustained mentoring remained persistent obstacles. Informants generally perceived the framework positively, considering it contextual and practical to apply. The study concludes that integrating local wisdom with digital literacy can serve as a relevant and sustainable vocational training model for community-based tourism destinations.

INTRODUCTION

The tourism sector in the Labuan Bajo area is facing serious challenges related to the readiness of its business actors in adapting to the rapid digital transformation. The tourism entrepreneurs around Luwansa Beach Resort are faced with the fact that rapid technological advances have not been matched by the readiness of local human resources. This condition is strengthened by the findings of the East Nusa Tenggara Tourism Office which reported that until 2025, not a single tourism business actor from the region in the flagship area has succeeded in adopting a digital strategy rooted in local traditions (NTT Tourism Office, 2025). The initial search conducted by the research team in January 2026 also confirmed at least four fundamental problems, namely the low digital skills of business actors, the capacity building model that still refers to conventional and less relevant approaches, the mismatch of training materials with real needs in the field, and the lack of a planned partnership between educational institutions and resort managers to formulate digital literacy guidelines. In fact, as a destination *Super-Priority* Labuan Bajo should be able to respond to the rapid flow of digitalization of the tourism industry in a more adaptive manner.

Ironically, the potential for collaboration between educational institutions and the local entrepreneurial community has not been optimally utilized, a gap that is increasingly evident when compared to other modern tourist destinations that have succeeded in combining indigenous cultural content with strengthening digital capabilities. Studies on digital literacy in the context of tourism have actually developed quite rapidly. Margasari et al. (2026) for example, finding that digital mentoring has been proven to help tourism MSME actors in Yogyakarta significantly expand their market reach, although the approach used tends to be too technical and therefore does not pay attention to the local cultural dimension. Meanwhile, Swetamayasa et al. (2025) revealed that social media content that contains authentic traditions is actually more in demand by tourists who visit tourist villages in Bali, even though the scope of study is still limited to the village level and has not reached business actors in resort areas. In the context of community empowerment, UNESCO (2020) asserts that "the most enduring digital literacy programs are usually those that position local wisdom as the foundation of training, not just a display of formality" a principle that according to the findings Priliani et al. (2026) has not been widely applied in destinations *Super-Priority* like Labuan Bajo, because their study is only limited to revealing the low level of technology utilization without offering a clear framework. In terms of partnerships, Raharjo (2020) has succeeded in formulating a collaboration scheme between academics and hotels in the eastern region of Indonesia, although the approach used has not touched much on the content of local culture. Strengthening based on traditional heritage as proposed Raharjo (2020) as well as practical and affordable technology adaptation according to Sugiyono (2021) are two important foundations adopted to formulate the framework in question.

The various previous research achievements show that until now there has been no research that simultaneously integrates local wisdom into the digital literacy framework while specifically targeting business actors in resort areas

such as Luwansa Beach Resort, because the majority of existing research still focuses on urban MSMEs, tourist villages, or large-scale hotel complexes.

Based on the description above, the main gap in this study lies in the absence of a digital literacy framework that explicitly integrates the value of Manggarai local wisdom for tourism entrepreneurs in the Labuan Bajo resort area. Previous studies are still general and technical, so they have not answered the specific needs of local business actors who are trapped between the demands of digitalization and cultural preservation. Thus, the formulation of this research problem can be described into three main questions, namely: how to prepare and test a digital literacy framework rooted in local wisdom for tourism entrepreneurs at Luwansa Beach Resort; what factors encourage or hinder the implementation of the framework; and how business actors and resort management perceive the developed framework.

In line with the formulation of the problem, this study aims to: (1) formulate and test a digital literacy framework based on local wisdom for tourism entrepreneurs in Luwansa Beach Resort; (2) identify supporting and inhibiting factors for the implementation of the framework in the field; and (3) analyze the perception of entrepreneurs and resort management on the impact of the framework on improving the digital competence of business actors. These three objectives are formulated so that the research does not only produce products in the form of a framework document, but also provides a contextual understanding of the acceptance and sustainability of its implementation.

Theoretically, this study is expected to enrich the treasure of tourism digital literacy studies by offering a model that specifically combines the principles of local cultural empowerment, practical technology adaptation, and multi-stakeholder collaboration, a novelty that has not been worked on much in the literature before, considering that existing studies tend to focus on urban MSMEs or large hotels. Practically, the results of this study are expected to be operational guidelines for tourism entrepreneurs and resort management in improving culture-based digital skills, as well as a policy reference for managers of *other super-priority destinations* in Indonesia. From a sustainable development perspective, this study also supports SDG 4 (Quality Education) through the provision of contextual vocational training models, and strengthens SDG 17 (Partnerships for Common Targets) through close collaboration between researchers and the entrepreneurial community at Luwansa Beach Resort.

LITERATURE REVIEW

The current development of the digital tourism sector demands the readiness of local business actors, especially in super-priority destinations like Labuan Bajo, to adapt to technological transformation. However, recent literature indicates that improvements in digital literacy are often not matched by the integration of local cultural values into online marketing strategies. Several previous studies highlight various important aspects of tourism empowerment; for instance, Margasari et al. (2026) found that digital mentoring successfully expands market reach for MSMEs, although the approach tends to be overly technical and overlooks the cultural dimension. On the other hand, Swetamayasa et al. (2025) revealed that social media content featuring authentic traditions is

much more sought after by tourists, although the scope of their study remains limited to the tourist village level.

In the context of community empowerment, UNESCO (2020) asserts that the most sustainable digital literacy programs are those that position local wisdom as the foundation of training, rather than just a formal formality. This principle is reinforced by Togatorop et al. (2025) and Rizkita et al. (2025), who explain the complementary relationship between digital aspects and local culture, where entrepreneurial capacity acts as the bridge between traditional knowledge and digital devices. Nevertheless, most previous research has focused primarily on urban MSMEs, independent tourist villages, or large-scale hotel complexes, leaving a research gap regarding the absence of a locally-rooted digital literacy framework specifically targeting business actors in tourism resort areas.

METHODS

This research is qualitative and applied and follows the *Research and Development* (R&D) scheme located at Luwansa Beach Resort, Labuan Bajo. The development stage adopts the *DESIGN* (*Define, Explore, Structure, Implement, Gauge, Narrow*) model because its adaptive nature allows adjustments at each stage according to field conditions, different from conventional R&D models which are relatively linear and rigid. Broadly speaking, the research flow begins from field observation activities and research implementation that go hand in hand, then leads to the preparation of the main output in the form of a digital literacy framework based on local wisdom for tourism entrepreneurs, with achievement indicators serving as markers of success at each stage.

The research was carried out with industry partners, namely Luwansa Beach Resort Labuan Bajo, with the person in charge of the resort being Mr. Putu Alit Saputra as *Resort General Manager*. The research subjects include local tourism entrepreneurs (homestay, culinary, and tour service owners), resort management, as well as representatives of local associations or business groups around the resort area, with the number of participants ranging from 5-10 informants. The selection of this location is based on the national strategic issue regarding strengthening digital tourism human resources in *super-priority* destinations, with a special emphasis on local wisdom as the foundation of development.

The *Define and Explore phases* are focused on field observations to map the digital readiness of entrepreneurs, the values of local culture that are still alive, as well as collaboration opportunities between researchers, resorts, and the business community. Data was collected through triangulation of participatory observation, in-depth interviews, and analysis of operational documents and then analyzed thematically to formulate training needs based on local wisdom. The *Structure, Implement, and Gauge stages* are realized through two rounds of trials, each lasting four weeks. The first round tested the basic modules of digital literacy with local culture content accompanied by hands-on practice and case studies. The second round applies modules that have been refined with intensive mentoring and *peer learning* between business actors to adapt the model to the local socio-cultural context. The *Narrow Stage* produces final outputs in the form

of *framework documents*, SINTA-indexed scientific articles, and policy recommendations for resorts, with success measured from acceptance rates, changes in digital behavior (cultural content uploads, online interactions, transaction recording), as well as participant and management feedback.

Primary data was collected through direct observation of entrepreneurial digital activities, in-depth interviews with 5–10 participants consisting of entrepreneurs, association representatives, and resort managers, and document review such as sales records and social media uploads. The theoretical foundation used to develop this digital literacy model refers to two main sources. Togatorop et al. (2025) explains the mutual relationship between digital aspects and local culture that complement each other, where culture provides direction for the use of technology while technology expands the reach of the culture itself. Meanwhile, Rizkita et al. (2025) highlighting the interplay between traditional knowledge and digital devices, with entrepreneurial capacity acting as a link between the two. The combination of the two theoretical frameworks provides space for researchers to comprehensively test the developed model without ignoring the typical characteristics of Labuan Bajo as a priority area. All data were analyzed following the qualitative data analysis procedure as stated by Miles et al. (2024), which includes data reduction, presentation of data in the form of a thematic matrix, and drawing conclusions, as illustrated in the following figure.

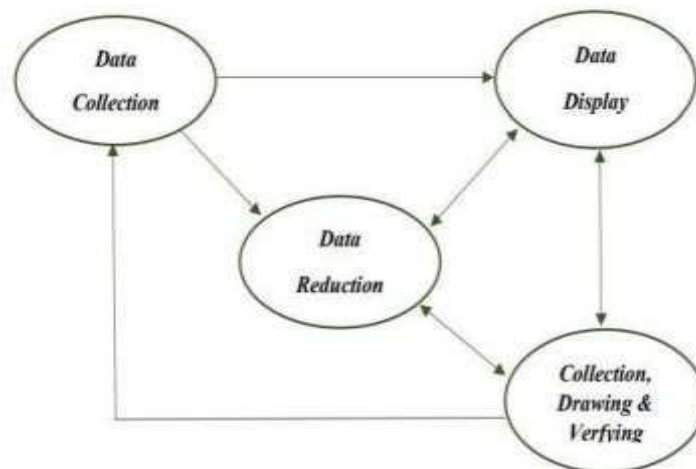


Figure 3. Illustration of Data Reduction, Data Presentation, and Verification (Scott, 2017)

The analysis process takes place cyclically and interactively between data collection, reduction, presentation, to drawing and verifying conclusions, so that the findings produced can always be corrected and refined throughout the research process. The data analysis process is taken through three interrelated steps. The first step is to photograph local conditions by measuring the level of digital literacy needs while documenting traditions that are still sustainable. The second step is to evaluate the model from the technical side, namely the ease of use of digital tools, the socio-cultural side in the form of conformity with local customs, and the institutional side in the form of support from resort management and business groups. The third step is to measure the impact based on the qualitative benchmark of direct observation. In order to ensure the validity

of the data, the findings were reconfirmed with business actors, consulted with tourism and cultural experts, and tested directly in the field for two periods with a duration of one month each. From this process, three factors were identified that determine success, namely the availability of smartphone devices and signals, entrepreneurial goodwill, and the support of resort managers and local residents.

RESULTS AND DISCUSSION

Overview of the Early Conditions of Tourism Entrepreneurship at Luwansa Beach Resort

The Define and Explore stages in this study produced a portrait of the digital literacy conditions of the eight informants involved, consisting of six local tourism entrepreneurs and two resort management. Preliminary data shows a wide variation in digital proficiency levels, ranging from low to high categories, as summarized in the following table.

Table 1. Profile and Level of Early Digital Literacy of Informants

Code	Role	Type of Business	Long Term of Effort	Early Digital Literacy Level
P1	Homestay Owner	Accommodation	8 years	Low
P2	Restaurant Owner	Culinary	6 years	Medium
P3	Tour Guide	Tour Services	5 years	Low
P4	Souvenir Seller	Crafts	10 years	Low
P5	Agent Tour	Travel	7 years	Medium
P6	Head of Business Group	Community	12 years	Medium
P7	Digital Marketing Resort	Management	4 years	Height
P8	Resort General Manager	Management	9 years	Height

The data in the table above shows an interesting pattern: the longer a person runs a traditional community-based business (such as homestays, guided services, and handicrafts), the lower the level of digital literacy, while resort management with a corporate background is in the high category. This condition is in line with findings that show that local wisdom-based business actors in tourist destinations often have adequate operational capabilities but are weak in the ability to create digital content and solve technological problems independently, as shown by the digital literacy competency index of tourism actors based on local wisdom in Palopo City which is measured using the UNESCO DLGF framework (Nasruddin et al., 2025). A similar pattern can also be seen from the results of interviews with P1, P3, and P4 who admitted that they did not understand how to package Manggarai cultural values into attractive content for tourists, even though they were aware of the potential of local culture as an attraction.

This kind of digital literacy inequality is also in line with the findings that limited network infrastructure and low digital skills of communities are often the main obstacles to the development of culture-based smart tourism in agrotourism areas, as reported in a study on community-based smart ecotourism in Brastagi, North Sumatra (Daryana & Waluyo, 2025). In addition, the results of the initial mapping also confirm that the traditional values of Manggarai, such as tradition *Squirt* (communal land division) and practice *Squirt* (traditional martial arts), is still sustainable among the community around the resort, but has never been used as a structured digital training material. This condition reinforces the urgency of developing a digital literacy framework that deliberately links cultural content with the use of technology, instead of placing the two as two separate things.

The Process of Preparing and Piloting a Digital Literacy Framework Based on Local Wisdom

The initial framework formulated at the Structure stage consists of three main components, namely digital literacy modules with local culture, practical assistance based on daily business activities, and case studies as a means of testing understanding. This structure is designed based on the principle that digital reinforcement should not stand alone, but rather grow side by side with the strengthening of traditional values, in line with the idea that the relationship between digital aspects and local culture is complementary, where culture gives direction to the use of technology while technology expands the reach of that culture (Togatorop et al., 2025).

The Round 1 trial which lasted for four weeks focused on the introduction of basic social media and simple digital devices with hands-on examples from participants' business activities. The results of the observations showed an improvement in basic understanding, but it was not followed by a significant change in digital behavior. P1, for example, admitted that the digital training he had previously attended was too general and did not explain how to promote Manggarai culture through social media, making it difficult to implement it. Such findings reinforce criticism of conventional digital training models that tend to be too technical and do not accommodate the local cultural dimension, as is also the case with the assistance of tourism MSMEs in other destinations that have not yet reached the needs of traditional community-based business actors (Yosintha et al., 2023). A similar experience was reported by P4, a souvenir craftsman, who stated that the main obstacle was not access to technology, but not the knowledge of how to photograph products and write interesting descriptions.

Based on the Round 1 evaluation, the research team refined the framework by adding more concrete practical steps, such as product shooting guides, cultural narrative writing techniques, and content calendar examples that combine promotional schedules with local cultural momentum (e.g. harvest season or traditional ceremonies). This improvement was then piloted in Round 2 for four weeks with an intensive guidance and peer-to-business learning approach. The results show more pronounced changes. P3, the tour guide, reported starting to produce short videos about Manggarai culture and destinations around the resort after taking part in mentoring, and this was

responded positively by tourists who asked more questions through social media before visiting. This kind of change in digital behavior is in line with the finding that social media content that contains authentic traditions actually attracts more tourists than generic promotional content.

The achievements in Round 2 also strengthen the idea that the integration between traditional knowledge and digital devices can be mediated by the entrepreneurial capacity of the business actors themselves, as shown in a study that highlights the linkage between traditional knowledge and digital technology with entrepreneurship as a link (Wangkay et al., 2025). The pattern of gradual improvement from Round 1 to Round 2 is also in line with the findings of research in the tourist village of Guizhou which shows that digital penetration has a positive impact on the entrepreneurial behavior tendencies of the village community, with digital literacy, entrepreneurial passion, and social network relations acting as mediators in the process (Yang et al., 2024). Thus, the final framework produced in the Narrow stage is not just a technical training module, but a gradual structure that integrates basic introduction, cultural contextual practices, and ongoing mentoring as a single learning cycle.

Table 2. Comparison of Round 1 and Round 2 Test Results

Observed Aspects	Round 1 (Weeks 1-4)	Round 2 (Weeks 5-8)
Understanding the basic concepts of digital literacy	Moderate increase	Rise high
Production of content with local culture	Not consistent yet	Start a routine (e.g. P3 culture videos)
Interaction with tourists via social media	Low	Increased (more online inquiries)
Transaction logging/digital promotions	Not yet implemented	Some participants began to implement

Factors Driving and Inhibiting the Implementation of the Framework

The identification of driving and inhibiting factors was carried out through triangulation of interview results with all informants. Three main driving factors were found, namely the availability of smartphone devices and signals, entrepreneurial goodwill or motivation, and active support from resort management. P7 as a digital marketing resort emphasized that the advantage of this framework lies in its ability to connect digital promotions with cultural narratives so that the results feel more authentic, and according to him this is very possible to be applied widely if accompanied by regular mentoring. This kind of institutional support is key, given that the successful development of destinations based on the convergence of culture and digital technology is highly dependent on close collaboration between governments, local communities, and the private sector (Wangkay et al., 2025).

In addition to institutional support, the intrinsic motivation of business actors is also a significant driver. P6 as the chairman of the business group said that the model developed was considered more in accordance with the conditions of the community because it did not separate between technology and culture, a view that reflected the high social acceptance of the approach based on

local wisdom. These findings are consistent with the results of research that confirm that the uniqueness of tourism villages and local wisdom, when combined with the use of technology, is able to significantly strengthen economic development, with technology acting as a mediator that strengthens the impact (Legowo et al., 2024).

On the other hand, a number of inhibiting factors were also identified, especially in the technical and institutional aspects. The most prominent technical obstacle is the low initial ability to create digital content, as experienced by P1 and P4 who admit that it is difficult to present local culture in a visually appealing format. A similar problem is also reflected in P2's admission that he has just created a Google Business account but has never updated it regularly. This kind of obstacle is in line with the finding that limited infrastructure and low digital literacy of managers are the main challenges in the development of digital tourism villages, although the potential to increase visits through the use of technology is proven to be real (Wangkay et al., 2025). Meanwhile, from an institutional perspective, P6 highlighted the lack of ongoing mentoring as the biggest challenge faced by business group members, a finding that reinforces the importance of program sustainability instead of one-time ceremonial training.

The discussion of these driving and inhibiting factors also needs to be linked to the context of post-pandemic economic resilience, considering that the digitalization of tourism business has proven to be one of the key factors that help business continuity in the midst of economic pressure, with a moderate level of digital literacy of human resources being the determinant of the success of the adaptation (Marsdenia, 2022). Thus, the driving and inhibiting factors identified at Luwansa Beach Resort are not a single phenomenon, but patterns that are also found in various community-based tourist destinations in Indonesia, thus strengthening the external validity of the findings of this study.

Entrepreneurial and Resort Management's Perception of the Developed Framework

The perception of local tourism entrepreneurs towards the framework developed is generally positive. P1 considers the framework easier to understand because the examples used directly use customary activities and the lives of the surrounding communities, rather than generic examples that are irrelevant to the local context. A similar assessment was conveyed by P2, who stated that this framework helps culinary business actors understand how to display traditional food as a tourist attraction, not just an object of buying and selling. P4 also emphasized that the approach that starts from the basics makes the material feel very helpful for business actors with low digital literacy. This pattern of high acceptance of authentic culturally charged materials is consistent with the findings that digital-based tourism that highlights authentic cultural elements has received an enthusiastic response from tourists, with the majority of respondents even willing to pay more for content based on local cultural narratives (Daryana & Waluyo, 2025).

Changes in digital behavior were also observed in three indicators set at the Method stage, namely the frequency of cultural content uploads, responses to online customers, and the recording of digital transactions. P5 as a tour agent

reported that it has started to compile a content calendar that displays local culture so that promotions become more targeted than before which relied on booking over the phone. P3 also confirmed the increase in interaction with prospective tourists through digital channels after participating in mentoring. This increase in interaction confirms that the success of culture-based digital literacy is not only measured by technical capabilities alone, but also by five main pillars that are intertwined, namely knowledge, networking, convergence, communication, and innovation, as found in community-based digital ecotourism practices in Pela Village, East Kalimantan (Hairunnisa et al., 2023).

In terms of resort management, the perception that has emerged also shows strong support for the sustainability of the program. P8 as the Resort General Manager emphasized that the progress of tourist destinations does not only depend on resorts, but also on the surrounding business actors, so collaboration is absolutely necessary. He also confirmed the increase in digital activities, especially the use of social media and the delivery of local cultural information, as a tangible impact of the framework trial. The recommendations presented by P8 point to the need to make this framework a sustainable mentoring program that involves universities, local governments, and the business community in an integrated manner. This view is in line with the findings that the success of digital literacy development in tourist destinations is largely determined by the synergy between digital innovation and the local socio-cultural context, with the active involvement of the community as a determining factor for the sustainability of the destination (Daryana & Waluyo, 2025).

Table 3. Summary of Informants' Perceptions of the Digital Literacy Framework

Code	Role	Key Perception Points
P1	Homestay Owner	The material is easier to understand because it is based on traditional activities
P2	Restaurant Owner	Helping to display traditional cuisine as a tourist attraction
P3	Tour Guide	Drive cultural video content production and online interaction
P4	Souvenir Seller	It is very helpful because it is taught from the ground up
P5	Agent Tour	Help build a targeted cultural content calendar
P6	Head of Business Group	According to the condition of the community because it does not separate cultures and technologies
P7	Digital Marketing Resort	Authentically connect digital promotion with cultural narratives
P8	General Manager	Fully support, recommend cross-party sustainable programs

Comprehensive Discussion: Contribution of the Framework to Digital Literacy Based on Local Wisdom

Overall, the findings of this study confirm that the integration of local wisdom into the digital literacy framework is able to answer the gap that has not been worked on in previous tourism digital literacy studies. Studies that focus on urban tourism MSMEs tend to be too technical so they do not pay attention to the cultural dimension, while studies at the tourism village level have not reached the context of business actors in large-scale resort areas. The results of the trial at Luwansa Beach Resort show that this gap can be bridged when training materials are designed to rely on daily cultural activities, rather than just general digital theories.

These findings also reinforce the principle that the most enduring digital literacy programs are those that position local wisdom as the foundation of training, not just a complement to formalities, as affirmed in the framework of culture-based community empowerment (UNESCO, 2020). The changes in digital behavior observed in the informants of this study, ranging from increased cultural content production to the use of structured content calendars, show that these principles can be realised in the field, not just normative ideas.

When compared to similar studies, the framework produced by this study has its own peculiarities because it explicitly targets the context of resort areas, not independent tourism villages or urban MSMEs as commonly found in previous research. However, the resulting achievement pattern is still in line with the general principle that the convergence between local wisdom and digital transformation has great potential in accelerating the development of tourist destinations while supporting the achievement of sustainable development goals at the village and regional levels (Wangkay et al., 2025). The multi-stakeholder support recommended by resort management also strengthens the relevance of this framework to the achievement of SDG 17 regarding partnerships for common targets, while improving the digital competence of business actors through a contextual vocational approach is in line with the achievement of SDG 4 on quality education.

However, this research has a number of limitations that need to be honestly acknowledged. The number of informants limited to eight people, although representative for an in-depth qualitative approach, has not allowed generalization to all business actors in the Labuan Bajo area as a whole. The duration of the trial, which lasted only two rounds for eight weeks, also limited the study's ability to observe the sustainability of digital behavior change in the long term. In addition, the very specific context of the research in one particular resort also limits the transferability of the findings to other resort areas with different socio-cultural characteristics. These limitations open up space for further research, especially to test the sustainability of the framework over a longer period of time and to expand the scope of the research site to other super-priority destinations in Indonesia.

CONCLUSION

This research succeeded in formulating and testing a *digital literacy framework that is rooted in local wisdom of Manggarai for tourism entrepreneurs in Luwansa Beach Resort through a Research and Development approach with the DESIGN model*. Two rounds of trials showed gradual improvements, ranging from basic understanding to real digital behavioural changes such as cultural content production and more active online interaction. The main driving factors include the availability of devices, motivation of business actors, and resort management support, while obstacles lie in the low ability to create content and the lack of ongoing mentoring. The perception of entrepreneurship and resort management is generally positive, indicating that this framework is relevant to be applied in the context of culture-based resort areas.

ADVICE

Given the limited number of informants and the relatively short duration of the trial, further research is recommended to extend the mentoring period to observe the sustainability of digital behavior changes in more depth. Expansion of the study location to other *super-priority* destinations also needs to be done so that the findings can be generalized more widely. For resorts and stakeholders, it is recommended to build an integrated continuous mentoring program involving universities, local governments, and the business community, rather than just a one-time ceremonial training. The *peer learning approach* between business actors also needs to be strengthened because it has proven effective in accelerating culture-based digital adoption, while maintaining a balance between preserving traditions and the demands of technological transformation in tourist areas.

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