



THE ROLE OF DIGITAL EXPERIENCE IN VISITOR SATISFACTION AND ENVIRONMENTAL AWARENESS FOR SUSTAINABLE ECOTOURISM

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ABSTRACT

Digital experience has become an important part of ecotourism development because tourists often become familiar with destinations through social media, online reviews, and visual content before visiting. This study aims to analyze the role of digital experience in shaping visitor satisfaction and environmental awareness in the development of sustainable ecotourism in Maluku Tenggara. The study employed a descriptive qualitative approach through semi-structured interviews and field observations. The informants consisted of tourists, tourism managers, local MSME actors, community members, and tour guides. The data were analyzed through thematic coding, including data reduction, theme grouping, and interpretive meaning-making. The findings show that digital experience functions as an initial gateway for the formation of tourist expectations, especially through Instagram, Google Reviews, TikTok, and WhatsApp. Visitor satisfaction is influenced by natural beauty, affordable prices, basic facilities, cleanliness, clarity of information, and the consistency between digital promotion and the actual condition of the destination. Environmental awareness increased when visitors received direct education from managers or guides, supported by digital media such as short videos and QR codes. This study finds that digital experience functions not only as a promotional tool but also as an educational medium that reinforces sustainable ecotourism. The research was conducted at Hoat Tamngil, Rumadian Village, providing a clear local context for the findings.

1. INTRODUCTION

Tourism development in the digital era is inseparable from how visitors search for, evaluate, and share destination information. Before deciding to visit, many tourists examine photos, videos, reviews, ratings, digital maps, and user-generated content. As a result, the first encounter with a destination frequently occurs through a device screen rather than in person. For ecotourism, this shift creates urgent opportunities and responsibilities: digital media can broaden visibility and attract visitors, but if online content reduces a destination to scenery and “photo spots” without communicating environmental values, it risks undermining conservation goals and misaligning visitor expectations.

Social media, online reviews, and digital content now actively shape tourist expectations, motivating choice and influencing on-site behavior. High-quality visuals and positive ratings can increase visitation, while interpretive videos, interactive maps, and QR-linked information can prepare visitors to act responsibly. Conversely, misleading or superficial digital portrayals may produce disappointed or indifferent visitors whose behaviour harms sensitive ecosystems. This dynamic makes digital experience a critical factor not only for marketing and competitiveness but also for environmental education, visitor discipline, and the long-term viability of ecotourism.

Maluku Tenggara is an archipelagic region with strong potential for nature- and coastal-based tourism. Beaches, mangroves, marine landscapes, local culture, and community economic activities are important assets for ecotourism development. In this context, digital media can help destinations in Maluku Tenggara reach wider audiences, especially because contemporary visitors rely heavily on online sources to decide whether a site merits a visit. Field observations indicate that many visitors first learn about sites

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in Southeast Maluku through Instagram, Google Reviews, and short videos, making digital presence a decisive gateway to actual visitation.

However, digital tourism development in ecotourism areas cannot be reduced to online promotion alone. The key questions are not only whether social media increases visitor numbers but whether digital experience improves visitor understanding, satisfaction, and pro-environmental behaviour. Ecotourism depends on balancing recreation and conservation: visitors should enjoy natural beauty and also grasp why protection is necessary. Therefore, digital content must go beyond aesthetics to support interpretation, environmental education, visitor management, and meaningful community participation.

Previous studies have linked digital transformation to tourism competitiveness, destination image, and visitor satisfaction, and research in Indonesia has emphasized environmental education, community empowerment, and conservation for sustainable tourism. Yet many of these studies adopt quantitative approaches or concentrate on urban and well-developed destinations. There remains a clear gap: limited qualitative research explores how visitors, managers, guides, and local actors in peripheral island destinations interpret and use digital experiences, particularly in Maluku Tenggara, where infrastructure and digital service readiness vary widely.

In Maluku Tenggara, this gap has practical implications. Field data show widespread reliance on Instagram and video content to form initial impressions, while many managers still face constraints in digital reservations, completeness of online information, and environmental-education media. Some visitors report satisfaction based on natural atmosphere and affordability but also cite deficiencies in basic facilities, signage, bins, toilets, and digital information. These findings reveal a complex relationship between digital expectations, on-site experience, satisfaction, and environmental awareness that remains underexplored in the local context.

Local destination data further highlight the need for context-specific study. Biloro et al. (2023) report that the Hoat Tamngil mangrove area in Rumadian Village covers about 45 hectares and functions as mangrove ecotourism. Jadesta data from the Ministry of Tourism and Creative Economy note supporting facilities in Rumadian Tourism Village, parking, souvenir kiosks, selfie areas, and photo spots, while digital information, environmental education, and service systems require more systematic arrangement (Ministry of Tourism and Creative Economy, 2026). These realities demonstrate that digital experience is tied not only to promotion but also to destination readiness, conservation education, and local community strengthening.

Based on this background, this study analyzes the role of digital experience in shaping visitor satisfaction and environmental awareness for sustainable ecotourism development in Maluku Tenggara. Specifically, it addresses three questions: (1) how digital experience shapes visitor expectations and decisions; (2) how visitor satisfaction emerges from the interaction of digital promotion, facilities, and on-site experience; and (3) how digital experience can support environmental awareness and destination sustainability.

2. METHODS

This study used a descriptive qualitative approach to explore how digital experience shapes visitor satisfaction and environmental awareness in ecotourism development. The qualitative design was chosen because the research aimed to interpret meanings, experiences, and perspectives of actors involved in ecotourism, visitors, managers, community members, MSME actors, and guides, rather than to test statistical hypotheses.

The research was carried out in Maluku Tenggara, an archipelagic area with coastal, mangrove, and community-based tourism potential, and was selected because the research team and many informants have close ties to the region, allowing field data to reflect local realities. Fieldwork focused on selected sites in Maluku Tenggara, notably the Hoat Tamngil mangrove area in Rumadian Village and adjacent tourism spots where visitor flows and digital promotion were observable. Data were collected between 10 September 2025 and 5 November 2025, over a total duration of eight weeks.

Respondents were recruited using purposive sampling to ensure they could provide rich, relevant insights about digital information use and ecotourism. Selection criteria required informants to have direct involvement in or recent experience with the study sites and exposure to digital information channels. The

sample comprised 16 informants categorized as follows: 10 tourists (codes W1–W10) who had used digital media before or during their visit, 3 tourism managers/officials (P1–P3) responsible for promotion, facilities, and environmental education, 2 local community/MSME actors (M1–M2) involved in tourism-related economic activities, and 1 tour guide/educator (G1) who provided environmental interpretation.

Table 1. Research informants

Code	Informant category	Number	Description
W1-W10	Tourists	10	Had used digital media before or during their visit
P1-P3	Tourism managers	3	Managed digital promotion, facilities, and environmental education
M1-M2	Community members/local MSME actors	2	Involved in economic activities around the destination
G1	Tour guide	1	Provided environmental education to visitors

Data collection combined semi-structured interviews, participant observation, and digital-content/document analysis. Semi-structured interview guides, developed from the research questions and prior literature, were pilot-tested with two respondents and covered topics including digital sources used to learn about the destination, expectations formed from online content, on-site experiences and satisfaction, understanding of environmental responsibility, and recommendations for digital improvement. Interviews lasted approximately 45–90 minutes, were audio-recorded with participant consent, and were transcribed verbatim. Participant observation concentrated on arrival points, interpretation stations (including QR-code displays), facilities (toilets, trash bins, trails), and popular photo spots to document behaviors (e.g., littering, trail adherence), staff–visitor interactions, and the alignment between online portrayals and on-site conditions. Observations followed a structured checklist focused on presence and use of digital media, interpretive signage, visitor flow, facility condition, and community involvement. To triangulate findings, the research team also collected and analyzed digital materials such as Instagram posts, Google Reviews, short videos, destination websites, and manager-produced QR-code content. Ethical procedures included informing participants about the study objectives, obtaining written informed consent, anonymizing identifiers, and complying with institutional and local ethical guidelines.

All interviews were transcribed and combined with observation notes and digital-content summaries for analysis. Thematic analysis was performed through a systematic, iterative process: researchers familiarized themselves with the data by repeated reading; conducted open, line-by-line coding to generate initial codes (for example, “digital promotion,” “online reviews,” “facility gaps,” and “QR educational use”); consolidated similar codes into categories (such as “digital channels and pre-visit expectations,” “on-site experience versus expectation,” and “digital tools for education”); and refined categories into final themes that addressed the study questions. The main themes identified through coding included Digital Experience, Visitor Satisfaction, Environmental Awareness, Promotion–Reality Gap, Sustainable Ecotourism, and Digitalization Barriers (Table 2 summarizes themes, supporting data codes, and interpretations).

Table 2. Main themes from qualitative coding

Main theme	Supporting data	Interpretation
Digital experience	W1, W2, W8, W9, P1	Social media, reviews, and online information shape expectations before visitors arrive.
Visitor satisfaction	W3, W6, observation	Satisfaction is shaped by natural scenery, price, facilities, cleanliness, and access to information.
Environmental awareness	W4, W5, W7, W10, G1	Environmental awareness grows through direct explanation and easily accessible digital education.
Promotion-reality gap	W8, observation	Overly ideal digital content can reduce satisfaction when real conditions are inconsistent.

Main theme	Supporting data	Interpretation
Sustainable ecotourism	M1, M2, P2	Visitor satisfaction, local income, conservation, and cleanliness need to be managed together.
Digitalization barriers	P1, P3	Managers need stronger human resources, budget support, and simple digital systems.

To enhance trustworthiness, the team triangulated data across interviews, observations, and digital content and performed source triangulation by comparing perspectives of tourists, managers, community members, and guides. Member checks were conducted with five informants to validate interpretations, and a second coder independently coded a subset of transcripts (approximately 20%) to assess consistency; coding discrepancies were discussed until consensus was reached and the coding framework was finalized. Data management and retrieval were organized using NVivo 14, and an audit trail of field notes, coding decisions, and team discussions was maintained to support dependability and confirmability.

3. RESULTS AND DISCUSSIONS

The findings show that digital experience plays an important role in shaping how visitors recognize, imagine, and evaluate ecotourism destinations. However, digital experience does not stand alone. Visitor satisfaction and environmental awareness are also influenced by facility conditions, information quality, interactions with managers or guides, and local community involvement. Based on the thematic coding process, six main themes were identified, as explained below.

Table 3. Summary Of Field Data And Contextual Data In The Discussion

Data aspect	Main finding	Meaning in the discussion
Informant composition	16 informants: 10 tourists, 3 tourism managers, 2 community members/local MSME actors, and 1 tour guide.	The data show that the discussion does not rely only on tourists but also involves managers, local actors, and a guide.
Sources of digital experience	Instagram, Google Reviews, TikTok, WhatsApp, digital maps, photos, videos, ratings, and online reviews.	Digital media serve as the initial gateway for the formation of expectations and visiting decisions.
Facilities and service data	Observations found the need to strengthen toilets, trash bins, signposts, information media, and environmental rules.	Satisfaction cannot be supported by natural beauty alone; basic facilities determine visitor comfort and trust.
Environmental education data	Education is still dominated by guides and prohibition boards; integrated QR codes or digital interpretation boards are not yet available.	Digital experience needs to be directed as an educational medium, not merely visual promotion.
Destination contextual data	Hoat Tamngil has a mangrove area of approximately 45 ha, and Rumadian Tourism Village is recorded as having basic tourism facilities (Biloro et al., 2023; Ministry of Tourism and Creative Economy, 2026).	Natural potential and initial facilities already exist, but service digitalization and education need to be strengthened so that ecotourism becomes more sustainable.

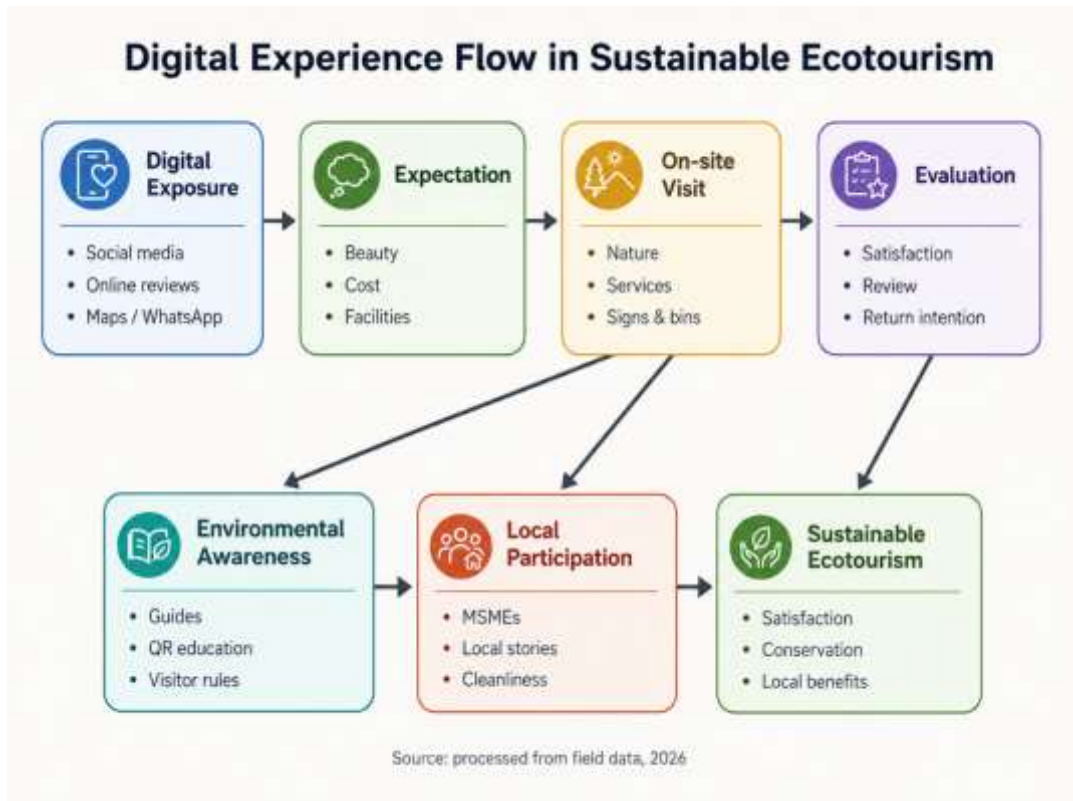


Figure 1. Flow Of Digital Experience In Sustainable Ecotourism Development

Digital Experience as the Initial Point of Expectation Formation

The first theme shows that digital experience becomes the initial gateway for visitors to become familiar with ecotourism destinations. Some tourists learned about the destination through Instagram, Google Reviews, TikTok, and WhatsApp communication. Photos, videos, reviews, ratings, and information circulating on digital media formed an initial image of the destination's beauty, cleanliness, access, and comfort. In other words, the tourism experience had already begun before visitors physically arrived at the location. This finding indicates that digital media have the power to build trust and visiting interest. Visitors feel more confident when they find positive reviews, attractive photos, or comments stating that the destination is clean and worth visiting. In the context of ecotourism, digital promotion is not only a marketing tool but also a space for shaping expectations. Therefore, information available online needs to be accurate, complete, and not exaggerated.

However, the data also show that digital experience can create problems when the displayed content is too ideal. Visitors who come after seeing certain visual content may feel disappointed when the actual condition is not as neat or complete as it appears in videos. This confirms that the quality of digital experience must align with the quality of services and field conditions. Attractive promotion is still needed, but it must be accompanied by honest information so that visitor satisfaction is not weakened.

Based on data mapping, the digital channels most frequently appearing in informants' narratives were visual-based social media and online reviews. This shows that visitors do not arrive with "empty information"; they already carry an initial image of the location, access, prices, and destination feasibility. Therefore, consistency between digital content and field conditions becomes a key point. If digital content portrays the destination as too clean, too quiet, or too complete, while the actual facilities are not yet ready, digital experience shifts from a promotional strength into a source of dissatisfaction.

The findings also indicate that digital experience works as the first gateway through which tourists form expectations before arriving at the destination. Several informants stated that they first learned about the site from Instagram, Google Reviews, TikTok, and WhatsApp, where photos, short videos, ratings, and comments created an initial image of the destination's beauty, cleanliness, accessibility, and comfort. One tourist explained, "I knew this place from Instagram, especially from mangrove photos and short videos on

TikTok. From that, I imagined the site would be clean, neat, and good for taking pictures.” Another informant added, “I checked Google Maps reviews and WhatsApp messages, so before coming I already had an idea about the price, access, and atmosphere.” These statements show that the tourism experience begins before the physical visit, since digital content shapes anticipation, trust, and willingness to visit.

Visitor Satisfaction between Natural Attractions, Facilities, and Information Quality

The second theme concerns visitor satisfaction. Tourist informants stated that satisfaction emerged from the natural atmosphere, attractive scenery, a refreshing environment, and relatively affordable prices. These elements constitute the main strengths of ecotourism destinations in Maluku Tenggara. Natural attractions remain an important reason why visitors come and feel that they have obtained a pleasant experience.

However, visitor satisfaction is not determined only by natural beauty. Basic facilities such as toilets, trash bins, resting areas, signposts, and information about prices or opening hours also strongly influence comfort. Field observations show that the destination already has photo spots, tourism paths, and resting areas, but trash bins and information media are still inadequate. This condition indicates that ecotourism experiences need to be managed comprehensively, not merely by relying on scenery.

The quality of digital information also plays a role in shaping satisfaction. Visitors expect information about tour packages, prices, operating hours, routes, and environmental rules to be clearly available on social media or other digital channels. When this information is incomplete, visitors have to guess or ask directly, which lowers comfort. Therefore, managers need to strengthen digital information as part of destination services.

Observation data show that weaknesses in basic facilities are more easily felt by visitors than weaknesses in promotion. In other words, digital promotion can attract initial visits, but satisfaction is shaped by real experiences at the site. This finding is in line with the concept of tourist satisfaction, which places the fit between expectations and experiences as the basis of evaluation. In this context, information about toilets, trash bins, routes, operating hours, prices, and environmental rules needs to be consistently displayed on official digital channels so that visitors do not rely only on fragmented information from other users.

Visitor satisfaction in this study is shaped not only by natural attractiveness but also by the alignment between digital information, facility readiness, and actual service quality. Tourists expressed satisfaction when the online promotion matched their real experience, especially in relation to the quiet atmosphere, mangrove scenery, and relatively affordable prices. At the same time, incomplete digital information reduced comfort because visitors had to ask directly about routes, opening hours, prices, and environmental rules. This finding is consistent with the concept of visitor satisfaction, which emphasizes the fit between expectations and actual experience as the basis of evaluation. In ecotourism settings, satisfaction therefore depends on both the attractiveness of the destination and the clarity of the information provided before and during the visit.

The Gap between Digital Promotion and Destination Reality

The third theme shows the existence of a gap between digital promotion and destination reality. Some digital content presents destinations very attractively, especially through camera angles, visual editing, and emphasis on photo spots. This strategy can increase visiting interest, but it can also create expectations that are too high if it is not balanced with facility readiness and cleanliness in the field.

This gap is important to consider because visitor satisfaction is influenced not only by what they see when they arrive but also by the comparison between expectations and reality. If digital content promises an experience that is neat, clean, accessible, and educational, field conditions must approach that image. Otherwise, digital promotion can generate disappointment and reduce visitor trust in destination managers. From the perspective of sustainable ecotourism development, digital promotion needs to be directed toward responsible communication. Content does not have to hide destination weaknesses; instead, it can convey information proportionally, for example by highlighting natural beauty while also reminding visitors about environmental rules, access, facility capacity, and the call to maintain cleanliness. In this way, digital promotion can become part of visitor expectation management.

These data indicate that managers need to distinguish between promotional content and informative content. Promotional content may highlight landscapes, atmosphere, and photo spots, while informative

content needs to answer visitors' practical needs. Both need to operate together so that promotion does not create false expectations. This practice is also consistent with the principle of destination sustainability, which emphasizes information transparency, visitor management, and environmental protection (Global Sustainable Tourism Council, 2025).

The comparison between digital promotion and actual destination conditions shows that visual content can be very persuasive, but it may also create unrealistic expectations when it is not balanced with field readiness. In digital media, the destination is often presented through attractive camera angles, edited images, and visually appealing photo spots. However, when tourists arrive, they may find that some basic facilities are still limited, such as trash bins, directional signs, toilet facilities, and information boards. One informant stated, "In the video it looked very beautiful and clean, but when I arrived, several parts were not as organized as I expected." Another explained, "I was not disappointed with the natural scenery, but the social media content made it seem as if everything was already complete, while in reality some improvements were still needed." This gap shows that digital promotion should communicate the destination honestly and proportionally so that visitor satisfaction is not weakened by mismatched expectations.

Environmental Awareness through Direct and Digital Education

The fourth theme concerns environmental awareness. Interview data show that visitors better understand the importance of protecting destinations when they receive explanations from managers or guides. Tour guides play a role in explaining the function of mangroves, including their benefits in preventing abrasion and protecting coastal ecosystems. Such direct explanations make visitors realize that nature tourism is not only a recreational space but also a learning space.

However, the available environmental education is still predominantly conventional. Observations show the presence of boards prohibiting plant damage or littering, but QR codes, digital interpretation boards, or short educational content that visitors can access independently are not yet available. Some informants suggested the use of barcodes that explain types of mangrove plants, ecological functions, or visiting rules. This suggestion is important because many tourists are already accustomed to using smartphones during their trips.

Digital education can become a bridge between the pleasure of traveling and environmental responsibility. Short videos, QR codes, Instagram stories, or simple infographics can explain why visitors should not litter, step on vegetation, damage mangrove roots, or use excessive single-use plastics. The goal is not to replace the role of guides, but to strengthen environmental messages before, during, and after the visit. Practically, the easiest form of digital education to implement is an interpretation board with a QR code. The QR code can be directed to a simple page containing mangrove functions, visiting rules, information on local biota, litter-prone points, and an invitation to take personal waste back home. This strategy is relevant because visitors already use devices during tourism activities, so digital media can be used to change behavior, not merely to take pictures.

The findings also show that environmental awareness is strengthened when visitors receive direct explanations from managers or guides. One informant said, "After the guide explained the function of mangroves in preventing coastal erosion, I understood why this place must be protected." Another informant noted, "If there were QR codes or short videos about the rules of visiting, tourists could understand more quickly without always asking." These statements indicate that environmental education should not rely only on warning boards, but also on more interactive and accessible digital media. Such media can help visitors understand that ecotourism is not only a recreational activity, but also a learning experience that builds responsibility toward the environment.

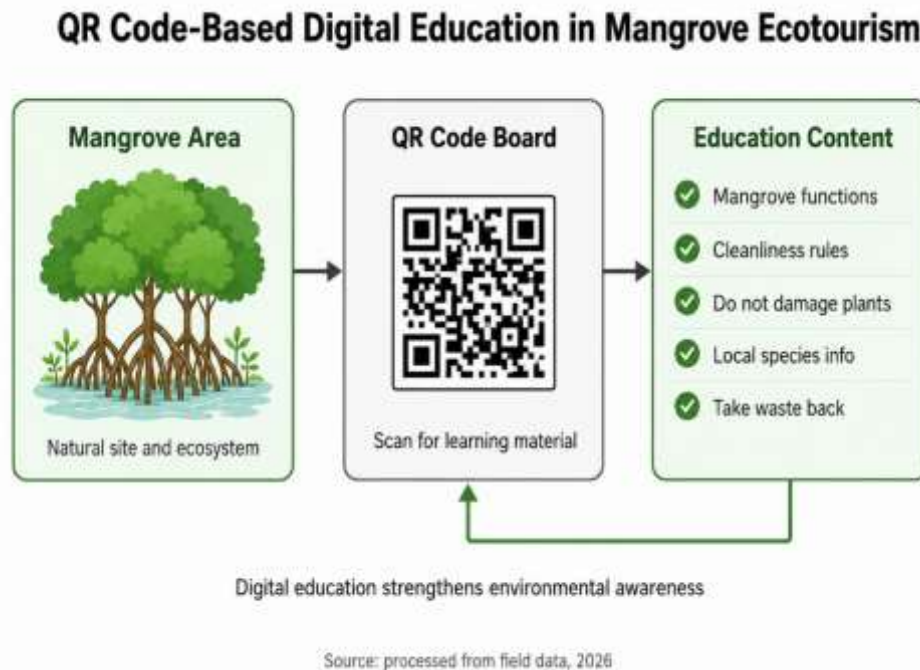


Figure 2. QR Code Use Scheme As An Educational Medium For Mangrove Ecotourism

Local Economy and Sustainable Ecotourism Development

The fifth theme relates to local economic participation. Community informants and MSME actors explained that when the number of visitors increases due to online promotion, the sales of food and beverages around the destination also increase. This shows that digital tourism promotion can provide economic benefits not only for destination managers but also for the surrounding community.

However, local actors also emphasized that increased visits must be accompanied by cleanliness management and visitor behavior control. If a destination becomes crowded but dirty or poorly organized, visitors may be reluctant to return and the local economy will be affected in the long term. This finding confirms that sustainable ecotourism must balance three dimensions: visitor satisfaction, environmental protection, and community economic benefits.

Community involvement is important in ecotourism development. Local communities should not only be positioned as vendors around destinations but also as partners in maintaining cleanliness, communicating environmental values, and developing digital stories about the destination. Local knowledge about mangroves, coastal life, cultural practices, and community history can enrich digital content and give the destination a stronger identity.

Data from community members and MSME actors show that local economic benefits depend on the quality of visitor experience. When visitors are satisfied, opportunities for purchasing food, beverages, souvenirs, guide services, and word-of-mouth recommendations become greater. However, when a destination is perceived as dirty or confusing in terms of information, the economic impact may only be temporary. Therefore, local participation needs to be directed toward two functions at once: an economic function and a function of maintaining environmental quality.

From the perspective of sustainable ecotourism, the findings suggest that digital promotion, visitor satisfaction, environmental awareness, and community involvement must be developed in an integrated way. Digital experience can attract tourists and shape their initial interest, but the quality of facilities, the honesty of information, and the consistency of environmental messages remain essential for long-term sustainability. In this sense, effective digital promotion is not simply about displaying attractive images, but about building realistic expectations, encouraging responsible behavior, and supporting conservation values. This approach allows digital media to function not only as a marketing tool, but also as a strategic instrument for sustainable ecotourism development.

Barriers to Digitalizing Ecotourism Management

The final theme concerns the barriers faced by managers in using digital tools for ecotourism development. Managers have used Instagram and WhatsApp for promotion and communication, but they do not yet have a structured digital reservation system, complete online information, or integrated environmental education media. The main barriers identified were limited funding, human resources, and technical capacity.

These barriers show that digital transformation in ecotourism is not merely about opening a social media account. Effective digital management requires planning, content consistency, human resource capacity, and coordination among managers, guides, communities, and government stakeholders. Without these elements, digital promotion may only increase visibility but not necessarily improve visitor experience or sustainability outcomes.

The implication is that strengthening digital capacity needs to become a priority. Managers and communities need practical training in digital content planning, basic destination information management, responses to online reviews, QR code-based interpretation, and environmental storytelling. Local governments and educational institutions can support this process through mentoring, student programs, and collaboration with tourism awareness groups or local communities.

Based on these data, the most realistic recommendation is gradual digitalization. The initial stage can be carried out by updating Google Maps profiles, operating-hour calendars, price lists, official contact numbers, weekly educational posts, and templates for responding to visitor reviews. The next stage can be developed through simple reservations based on WhatsApp Business, educational QR codes, and regular evaluation of complaints appearing in online reviews. This gradual strategy is more suitable for local destinations that still have limited budgets and human resources.

Table 4. Directions For Strengthening Digital Experience Based On The Findings

Problem found	Data/indication	Improvement direction
Incomplete digital information	Visitors still need to ask directly about routes, prices, opening hours, and rules.	Create fixed information on Instagram, Google Maps, and WhatsApp Business.
Limited environmental education	Prohibition boards exist but are not accompanied by explanations of mangrove ecological functions.	Add QR codes, short infographics, and educational videos.
Basic facilities affect satisfaction	Toilets, trash bins, signposts, and resting areas are concerns for visitors.	Align digital promotion with the readiness of real facilities.
Local MSMEs are not yet strong in digital storytelling	Local actors receive the impact of visits but have not become a central part of the promotional narrative.	Highlight local products, community stories, and conservation practices in digital content.

4. CONCLUSION

This study concludes that digital experience plays an important role in shaping visitor satisfaction and environmental awareness in the development of sustainable ecotourism in Maluku Tenggara. Digital platforms such as Instagram, Google Reviews, TikTok, and WhatsApp function as initial contact points between visitors and destinations. These media shape expectations, influence trust, and guide visiting decisions before the physical experience takes place. However, the value of digital experience depends greatly on the accuracy, completeness, and honesty of the information delivered.

Specifically, the discussion supported by data shows that the 16 research informants provide mutually complementary perspectives: tourists emphasize expectations and satisfaction, managers emphasize the limitations of digitalization, local actors emphasize economic benefits, and the guide emphasizes the importance of environmental education. Visitor satisfaction is formed through a combination of natural attractions, affordable prices, basic facilities, cleanliness, clarity of information, and consistency between digital promotion and the real condition of the destination. The findings show that beautiful scenery alone is not enough to maintain satisfaction. Ecotourism destinations also need proper

toilets, trash bins, signposts, environmental rules, and easily accessible digital information. When these elements are weak, visitor experience can decline even though the destination has strong natural potential.

This study also found that environmental awareness can be strengthened through direct explanation from managers or guides and through simple digital education. QR code-based interpretation, short videos, and social media content about mangrove functions, waste control, and visitor responsibility can help transform ecotourism from a photo-based activity into a learning experience. This is important because some visitors initially come because of visual attraction, not because of environmental knowledge.

For sustainable ecotourism development, digital experience needs to be positioned as an instrument of management, communication, and education. Managers need to align online promotion with real service quality, environmental facilities, and community participation. Local MSME actors also need to be involved because tourism growth affects both income and environmental responsibility. The main challenges remain related to limited human resources, funding, digital skills, and supporting facilities. Therefore, future development needs to focus on strengthening digital capacity, transparent promotion, environmental interpretation, and stronger collaboration among managers, local communities, government, and educational institutions.

In practical terms, tourism managers should regularly update official digital channels, provide accurate information about routes, prices, opening hours, facilities, and environmental rules, and use QR codes or short educational content to support visitor learning. Local communities should be involved not only as beneficiaries of tourism but also as partners in maintaining cleanliness, sharing local knowledge, and supporting conservation behavior. MSME actors should be integrated into digital storytelling so that local products, food, and services become part of the destination identity. Government stakeholders should support training, infrastructure improvement, and digital mentoring so that ecotourism promotion is consistent with sustainability goals and local capacity.

This study has limitations because it used a qualitative approach with a contextual focus on Maluku Tenggara. Future research may develop comparative studies across several ecotourism destinations or combine qualitative interviews with visitor surveys to understand the influence of digital experience on satisfaction and environmental behavior more broadly.

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