

User Requirement Analysis on Website: Tourism in Lundu, Sarawak

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ABSTRACT

This study explores the critical features essential for a tourism website based on the feedback from visitors to Kampung Pugu, Lundu. The study highlighted several functionalities deemed indispensable by the visitors to enhance the online presence of the destination and make the user experience more engaging and accessible. The key features identified include comprehensive and engaging content with detailed descriptions of local attractions and activities, high-quality images and videos to visually represent the destination, and a user-friendly interface that allows for easy navigation and interaction. An effective online booking system, robust social media integration, and real-time updates about local conditions are also emphasized. Additionally, interactive tools such as chatbots, feedback forms, and Frequently Asked Questions (FAQs) can improve visitor's interaction and service quality. This study explored the perspectives from entrepreneur and visitors on their use of tourism related websites. The report concluded that these features are crucial in transforming the website into a more effective tool for promoting tourism and facilitating a smooth experience for potential tourists, thereby contributing significantly to the growth and appeal of tourism in Lundu.

Keywords: user requirement; content analysis; tourism website; rural tourism; rural entrepreneur

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INTRODUCTION

Sarawak, known for its diversity of attractions and facilities, is devoid of a centralized and updated repository of information. Tourists and locals often face challenges in accessing comprehensive and accurate information regarding attractions, accommodations, and tourism-related facilities, which can affect travel planning and the overall visitor experience. Tourism encompasses economic, social, cultural, environmental, and psychological dimensions, involving travel outside

one's usual environment (Coleman & Crang, 2002). In addition, tourism governance plays a significant role in shaping policies and strategies that influence tourism development across different countries and regions (Öztürk, 2022). The concept of tourism also extends beyond simply visiting a destination, emphasizing engagement with places, experiences, and cultural interactions that contribute to the overall tourism experience (Gohar, 2022). As tourists increasingly rely on digital platforms to obtain information and plan their journeys, the need for a comprehensive and accessible tourism website has become increasingly important. Therefore, understanding the website requirements that support tourism promotion and visitor engagement is essential, particularly for emerging tourism destinations such as Kampung Pugu, Lundu.



FIGURE 1. *Google Maps View of Lundu District, Sarawak, Malaysia*

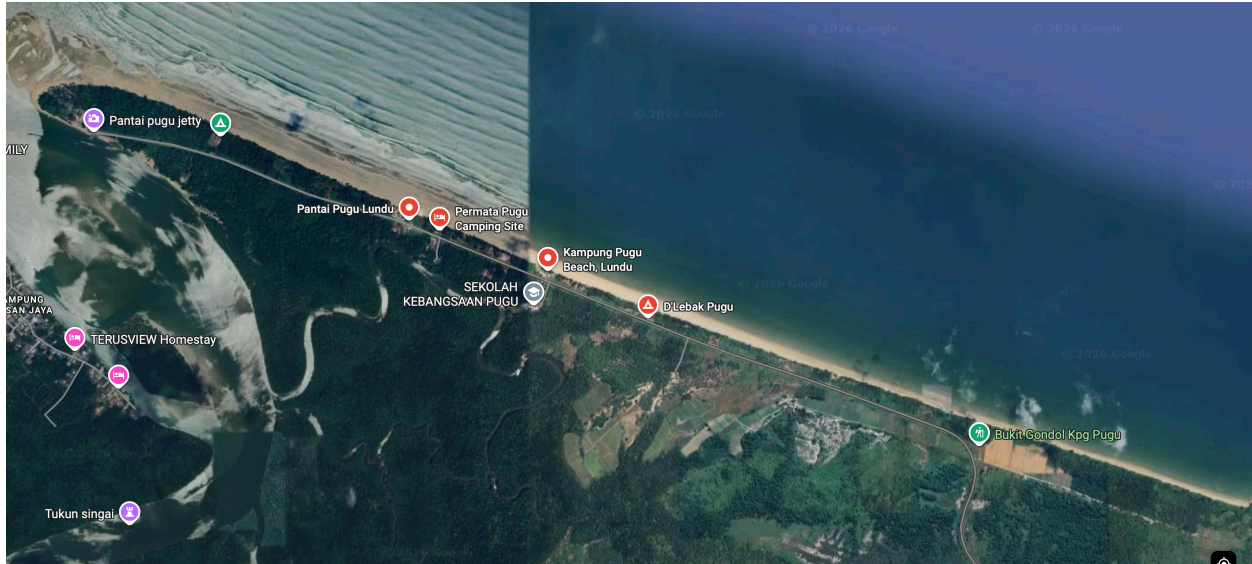


FIGURE 2. *Satellite Map View of Kampung Pugu, Lundu, Sarawak, Malaysia*

Kampung Pugu was once just a rural area that nobody reaches and know about the existence but it changes after the development of Pan Borneo Highway (Adib Povera, 2015). This major infrastructure project is enhancing Sarawak's connectivity and accessibility, which is crucial for the region's economic and social development. The highway's construction has not only represented a leap in the physical infrastructure but also underscores the importance of adapting and embracing new challenges and technologies in project management and execution (Bernama, 2023). This can be seen as parallel to the digital transformation in the tourism industry. Just as the highway enhances physical connectivity, digital platforms improve virtual accessibility to tourism destinations (Pencarelli, 2020; Marino et al., 2022). Both infrastructure projects and digital platforms serve as vital components in promoting tourism, where ease of access and efficient communication are key to attracting visitors (Buhalis & Law, 2008).

The government of Sarawak has given significant support for accelerating the downstream economic impact of the infrastructural project for the rural community. Hamsien Atar, Ministry of Rural Development Sarawak, stated that Lundu and Sematan would be turned into a major tourism hub for the district of Tanjong Datu (Borneo Post Online, 2017). This initiative intended to leverage the natural beauty of the area, including beaches, mountains, rivers, and unique flora and fauna, to attract tourists year-round. The plan aims to enhance a home-grown infrastructure like hotels and resorts, handicrafts, and enhancement projects. These initiatives align with the government efforts to create job opportunities in the region and enhance their standards of living.

The advancement of the Pan Borneo Highway, encompassing the addition of a pathway to Kampung Pugu, has been instrumental in the metamorphosis of this countryside locale into a more reachable and potentially prosperous site. The capacity of the initiative to be a pivotal force for the inhabitants of Sarawak underscores the significance of infrastructure enhancement in propelling advancement and growth in distant and marginalized areas. The inclusion of a route to this village in the Pan Borneo Highway project significantly impacted its accessibility and visibility. Prior to the development of the highway, Kampung Pugu may have been relatively unknown and difficult

to reach due to its outskirts location. The construction of the highway that passed through and near Kampung Pugu had turned the place more accessible to travelers, tourists, and investors.

Addressing the challenges in the online visibility of tourism sector in Lundu is crucial for unlocking the full economic, cultural, and environmental potential of the region. Previous studies have shown that tourists increasingly rely on the internet and digital platforms to search for travel information, compare destinations, and plan their journeys (Buhalis & Law, 2008; Pencarelli, 2020). This shows how crucial the relationship between tourism and the internet is, leading to increasing demand for online tourism information. The tourism sector plays a significant role in the country's economic landscape, and with technological progress, intelligent travel applications have become a crucial component of this industry. By establishing a robust online presence through a well-designed website, the area can attract a wider audience, promote sustainable tourism practices, and foster a deeper appreciation for its unique cultural and natural heritage (Cristobal-Fransi et al., 2020; Marino et al., 2022). Furthermore, an effective online platform can serve as a vital tool for local businesses, enabling them to reach a broader market, streamline operations, and enhance the overall visitor experience (Pencarelli, 2020; Huang, 2020). This study has significant implications for the strategic development of tourism in Sarawak, contributing to the region's economic development and cultural preservation.

Background of Study

A rural area with a low exposure in digital technology was the main research gap identified in this study. The essence of the challenges faced by tourism in Pugu can be distilled into two primary concerns which are the lack of online presence and reservation system and lack of insights from entrepreneur and visitor (Sahabat Alam Malaysia, 2023). The development of a user-friendly and informative website hinges on identifying the critical features and functionalities that enhance user experience and accessibility. Despite the excess of web development tools and guidelines, there remains a lack of consensus on the essential elements that meet the diverse needs of users across different domains (Hamit, 2003; Huang, 2020). In a way to respond from Premier of Sarawak request about development of Sarawak (MalayMail, 2023; Bernama, 2023), these two highlighted the main problems face by the community especially in engaging the development in technology of Sarawak. Research by Hamit (2003) shows that several key issues could hold back tourism development in the local area. These issues can be grouped into three main themes: infrastructure, tourism institutional framework and community. The study argued that each of these areas if not addressed, could slow down tourism growth. Therefore, it is crucial that different levels of government step in and tackle these problems quickly. Only by resolving these issues can tourism become a real engine for local development and benefit the community as a whole. This gap in understanding could lead to the creation of websites that fail to effectively engage users or deliver content in an accessible and efficient manner, thereby impeding the reach and impact of digital platforms (Pencarelli, 2020; Firmansyah et al., 2023).

The website for a tourism destination is not just a marketing tool but a crucial gateway for potential visitors to gain insights and form perceptions about the place (Horng & Tsai, 2010; Chung et al., 2015). However, not all websites are effective in engaging users, and some may fall short in crucial areas such as content quality, user interactivity, and information relevance (Huang, 2020; Firmansyah et al., 2023). The issue extends to the incorporation of real-time information and

interactive digital features, which are vital in shaping the modern traveller's decision-making process (Pencarelli, 2020; Kontogianni & Alepis, 2020). In the context of Pugu, there is a significant gap in understanding the perceptions and expectations of visitors and entrepreneurs towards tourism websites. This lack of insight could lead to the development of online platforms that was not align with the needs and preferences of these key stakeholders, potentially hampering the growth and sustainability of the local tourism industry. Effective development and management of tourism websites require a detailed understanding of these perspectives to tailor content, functionality, and marketing strategies that resonate with both visitors and business operators (Godovykh & Tasci, 2020; Chung et al., 2015). This study had involved the point of view from entrepreneurs and visitors who have visited Pugu.

Given the importance of these factors, the inadequate understanding of which specific website features resonate with visitors became an issue in developing the rural tourism sector such as Pugu. Addressing this gap is crucial for local tourism entrepreneurs who want to attract and satisfy a global audience. Therefore, this study had identified the essential features and functionalities that constitute an effective tourism website and to understand visitor and entrepreneur perspectives toward such websites, which are vital for the tourism industry's growth in the region (Godovykh & Tasci, 2020; Peong et al., 2023). The region's tourism sector suffers from a glaring absence of a digital footprint, rendering it virtually invisible to potential visitors. This gap significantly hinders the accessibility of information about the area's attractions, accommodations, and cultural events, crucial for planning visits. Moreover, the lack of a streamlined online reservation system complicates the booking process, detracting from the user experience and potentially discouraging prospective tourists. Concurrently, the lack of insights and opinions from the people in that area especially the entrepreneur and visitor further worsen the problem, limiting the reach and engagement with potential development. This dual-faceted problem has not only affected the growth of tourism in Pugu but also represents a missed opportunity for local businesses and the community at large.

In this study, two main problems were identified. The first was the lack of online presence and reservation systems to support tourism promotion and business operations. The other was the lack of insights from entrepreneurs and visitors regarding the requirements and expectations of tourism websites. Based on these problems, this study had answered two relevant questions: the essential features and functionalities required to create a user-friendly and informative website and the perspectives of visitors and entrepreneurs towards tourism websites in Pugu.

To address the first question, the essential attributes and features necessary for a functional and user-friendly tourism website that can support the growing tourism sector in Pugu, Lundu were examined. The effectiveness of a tourism website is not limited to its visual appearance but also the quality, accessibility, and accuracy of the information provided (Horng & Tsai, 2010; Huang, 2020). Therefore, the existing practices in information dissemination and user interaction to ensure that visitors receive reliable and engaging content were evaluated. Understanding visitors' needs and preferences is important in developing website content and functionalities that are relevant to potential users (Firmansyah et al., 2023; Jantan et al., 2023). The findings can offer practical recommendations for the website development in rural tourism and help to reduce the gap between users' expectations and their actual digital experience (Kontogianni & Alepis, 2020; Pencarelli, 2020).

In addition, the study has explored the perspectives of visitors and entrepreneurs towards tourism websites in Pugu. The insights gathered from both groups are important for understanding their expectations, experiences, and satisfaction regarding the digital representation of tourism destinations. Understanding these perspectives can provide valuable information for improving tourism websites, strengthening digital tourism initiatives, and supporting local tourism development (Godovykh & Tasci, 2020; Chung et al., 2015). By considering the views of both visitors and entrepreneurs, a more comprehensive understanding of the website requirements needed to support tourism promotion and enhance visitor engagement in Pugu were made visible (Peong et al., 2023; Pencarelli, 2020).

LITERATURE REVIEW

According to the Official Portal of the Sarawak Government, Sarawak covers approximately 124,449.51 square kilometres along the northwest coast of Borneo and contains extensive rainforest ecosystems that support a wide variety of flora and fauna (Sarawak Government, 2023). The attractiveness of Sarawak is increasingly recognized not only within Malaysia but also by neighbouring countries such as Singapore, Brunei, and Indonesia. Tourism statistics show that the number of foreign visitors increased to 1,414,443 from January to August 2023 compared to 206,328 during the same period in 2022 (Malay Mail, 2023). This growth highlights the increasing importance of effective tourism promotion and information dissemination. The internet has emerged as an important platform for tourism marketing, providing travellers with access to information, travel planning tools, and destination experiences before their visit. The availability of multimedia content, interactive features, and online services has transformed the way tourism destinations promote themselves and engage with potential visitors, making tourism websites an essential component of modern destination marketing.

The rapid evolution of digital technologies is reshaping the landscape of the tourism industry, highlighting a critical digital skills gap that is evident across various sectors. The tourism and hospitality sectors in Europe are currently grappling with bridging this gap, identifying a pressing need for skills such as online marketing, social media proficiency, and the ability to navigate and utilize operating systems efficiently (Cristobal-Fransi et al., 2020). This underscores a broader industry challenge; to remain competitive and responsive to consumer demands, there is an urgent need for upskilling in digital competencies.

The advent of Tourism 4.0 and Smart Tourism, as explored by Pencarelli, signifies the transformative impact of digitalization on the travel experience, from planning and booking to the in-destination experience (Pencarelli, 2020). This digital revolution not only enhances operational efficiency but also elevates the consumer experience, making it imperative for destinations like Pugu, Lundu, in Sarawak to integrate digital solutions that cater to the modern traveler's expectations. However, the digital transformation journey is not without its pitfalls. Abbasian Fereidouni and Kawa (2019) draw attention to the darker aspects of digitalization in tourism, such as the risk of creating digital dependencies and the potential for data control issues, which can lead to a form of digital colonialism in tourist destinations. This presents a cautionary tale for implementing digital strategies, emphasizing the importance of a balanced approach that respects privacy and ensures data security. Studies on tourism digitalization suggest that comprehensive digital adoption can lead to increased competitiveness, improved visitor experiences, and better

decision-making capabilities, highlighting the pivotal role of digital technologies in enhancing the attractiveness of tourist destinations (Pencarelli, 2020; Marino et al., 2022).

In the context of Sarawak's tourism in Pugu, Lundu, these insights underscore the critical need for a strategic digital presence that not only addresses the digital skills gap among industry stakeholders but also leverages the full spectrum of digital tools to enhance the tourist experience. It is undeniable, there are few developing entrepreneurs who already own a very good website, but it happened only to big companies in that area for example Retreat Resort and Roxy Hotel, Sematan. By embracing digital transformation, Sarawak can enhance its visibility, streamline communication and booking processes, and ultimately, enrich the overall experience for visitors, ensuring a sustainable and competitive edge in the global tourism landscape (Pencarelli, 2020; Marino et al., 2022).

Digital platforms such as websites play a pivotal role in the modernization and globalization of the tourism sector, acting as catalysts for entrepreneurship, market expansion, and enhanced visitor experiences. These platforms not only streamline the operational aspects of tourism businesses but also offer a medium for interactive engagement with potential and current tourists, facilitating a more personalized and enriching travel experience. Digital platforms are revolutionizing tourism by fostering novel forms of connectivity and communication, delineating a digital era marked by enhanced competitive dynamics and value creation (Marino et al., 2022). This shift towards digitalization is further underscored by studies that elaborate on the advantages of digital platforms, including innovation stimulation, market expansion, and cost reductions, which collectively contribute to the growth of the tourism industry (Pencarelli, 2020; Marino et al., 2022).

The role of digital solutions in promoting interactions between tourists and local stakeholders highlights the potential of digital platforms in facilitating collaborative innovation and the co-creation of tourism experiences (Pencarelli, 2020). This notion of collaborative tourism is further supported by Pencarelli (2020), who explores the impact of the digital revolution on the tourism industry through the concepts of Tourism 4.0 and Smart Tourism. The integration of digital media within tourism has also revealed the significant influence of user-generated content, augmented reality, and virtual reality on tourist behaviour and industry practices (van Nuenen & Scarles, 2021). Studies on tourism digitalization further exemplify the crucial role of digital technologies in enhancing marketing strategies and the overall tourist experience (Cristobal-Fransi et al., 2020; Pencarelli, 2020). The importance of user-centred design in developing digital platforms for tourism also underscores the need for design principles and marketing strategies that respond effectively to consumer preferences (Domínguez Vila et al., 2018). Abdelrady (2023) and Gao (2021) further discuss the concept of smart tourism platforms and their effectiveness in supporting tourism destinations, demonstrating the potential of digital technologies in fostering collaborative networks and expanding tourism services. These scholarly contributions collectively depict a tourism industry at the cusp of digital transformation, where the adoption of digital platforms is not merely a trend but a strategic imperative that caters to the modern traveller's expectations, drives innovation, and supports the sustainable growth of tourism businesses worldwide.

Communication, Information and E- Commerce

In way to emphasize the feature of a website for tourism choosing the suitable methodology is the main concern and in this study Content analysis is a versatile research method used extensively in qualitative research to interpret meaning from the content of text data. It involves systematic coding and examining of text such as written or oral communication to identify patterns, themes, or biases (Hsieh & Shannon, 2005). Each type uses different coding schemes and has distinct processes for deriving meaning from the data (Hsieh & Shannon, 2005).

The significance of ensuring that e-commerce platforms are easy to use and accessible to everyone, including individuals with disabilities, is paramount. This necessity is directly applicable to tourism websites, which must cater to a wide and inclusive audience (Domínguez Vila et al., 2018). This implies that information should be presented in a manner that is comprehensible and navigable for all users, ensuring inclusivity and enhancing user experience. Previous studies on website evaluation and usability imply that the content on tourism websites should be meticulously curated and analyzed to ensure it meets the informational needs of tourists (Law et al., 2010; Huang, 2020). A thematic analysis can help in understanding the recurring themes that are most pertinent to potential visitors of Pugu, Lundu, and tailor the website content accordingly.

The classification of Web 2.0 tourism websites indicates the significance of integrating social media and interactive features for effective communication (Burgess et al., 2010). For Pugu, Lundu's tourism website, this could mean incorporating platforms where users can exchange information and experiences, which in turn could enhance the site's engagement and community-building aspects. Chung and Law (2003) suggest that performance indicators for hotel websites could also be applicable to broader tourism websites. These indicators include information accuracy, ease of booking, and responsiveness, elements that are crucial for the e-commerce functionality of a tourism website. The balance between informational content and relational strategies, such as user engagement and customer service, highlights the need for a tourism website to not only inform but also connect with and retain visitors through effective communication channels (Escobar-Rodríguez & Carvajal-Trujillo, 2013). Burgess et al. (2010) establish benchmarks for website design and marketing, which could guide the development of Pugu, Lundu's tourism website, ensuring that the site not only provides valuable information but is also effectively marketed and designed with user experience in mind. Previous studies on tourism website evaluation also emphasize the importance of website usability, navigation, and information quality in supporting online tourism services (Law et al., 2010; Huang, 2020). Cantoni et al. (2011) discuss the relationship between hotel websites and booking engines, an aspect critical for the e-commerce success of a tourism website. For Pugu, Lundu, integrating a reliable and user-friendly booking system can significantly influence the decision-making process of potential tourists.

The model proposed by Cristobal-Fransi et al. (2020) gauges the efficacy of digital presence in enhancing tourist experiences. According to the Information dimension, a critical evaluation of the Pugu tourism website would focus on the adequacy and accessibility of information provided, key aspects that determine the quality of the tourist's pre-visit planning phase (Law et al., 2010; Horng & Tsai, 2010). In the realm of Communication, effective

engagement with potential visitors through interactive platforms such as chatbots, social media, and blogs is essential (Cristobal-Fransi et al., 2020; Burgess et al., 2010). This dimension also extends to the website's ability to cater to a global audience through multilingual support, thereby expanding its reach and utility (Buhalis & Law, 2008).

When it comes to E-Commerce capabilities, the security and privacy of online transactions on the tourism website are paramount. This includes the implementation of robust encryption and secure payment gateways, which are crucial in building trust with the user (Kim et al., 2009; Cristobal-Fransi et al., 2020). Lastly, the Additional Features dimension suggests that modern tourists look for indications of security and data protection, as well as a seamless user experience across various devices, signalling the website's adaptability and technological adeptness (Cantoni et al., 2011; Domínguez Vila et al., 2018). Each of these dimensions provides a framework for examining the Pugu tourism website's content, design, and functionality, ensuring a comprehensive analysis that aligns with current best practices in tourism website development (Law et al., 2010; Huang, 2020).

TABLE 1 illustrates the model discussed by Cristobal-Fransi et al. (2020), which will be used as the main reference in this study. It shows four dimensions that they highlighted as the variables in their study. They proposed a model that focuses on assessing the content of websites in the industrial tourism sector, focusing on four key categories. This proposed model is geared towards examining the efficacy of these websites in engaging their intended audiences. Utilizing content analysis, the model was applied to 128 tourism-related resources in Catalonia to pinpoint opportunities for the deployment of Web 2.0 tools and to identify areas of weakness that could be optimized for enhanced competitiveness in the industry.

TABLE 1. Model Proposed by Cristobal et.al (2020)

Dimensions	Definition
Information	This dimension evaluates the quality, relevance, and accessibility of information provided on a tourism website. It examines whether visitors can easily obtain information related to attractions, activities, operational details, pricing, cultural elements, and destination-specific content. The availability of accurate and up-to-date information is important in supporting visitor decision-making and enhancing the overall tourism experience (Cristobal-Fransi et al., 2020; Huang, 2020; Vila et al., 2021).
Communication	This dimension evaluates a website's ability to facilitate interaction and engagement with users. It includes communication tools such as contact forms, social media integration, feedback mechanisms, and interactive features that support two-way communication between tourism providers and visitors. Effective communication features help improve user engagement and strengthen relationships with potential tourists (Firmansyah et al., 2023; Pencarelli, 2020; Vila et al., 2021).
E-Commerce	This dimension evaluates the website's ability to support online transactions securely and efficiently. It focuses on functionalities such as online booking systems, payment options, transaction security, and the protection of users' personal information. These features contribute to user trust and convenience when making tourism-related purchases and reservations online (Cristobal-Fransi et al., 2020; Huang, 2020; Vila et al., 2021).
Additional Features	This dimension assesses supplementary functions that enhance the overall user experience, including mobile responsiveness, accessibility, multilingual support, privacy protection, and integration with emerging digital technologies. These features improve usability and allow tourism websites to serve a wider range of users across different platforms and devices (Cantoni et al., 2011; Firmansyah et al., 2023; Peong et al., 2023).

TABLE 2 outlines a multi-dimensional framework that serves as a benchmark for evaluation, where each dimension encompasses a set of sub-dimensions that further specify the criteria for assessment. By applying these dimensions to the analysis of the websites, this study would be able to comprehensively evaluate the digital strategies employed by the tourism operators in Pugu and Lundu, Sarawak, and determine their effectiveness in engaging with and attracting tourists.

TABLE 2. *Main Dimensions Details*

Main Dimension	Sub-dimensions	Details
Information	Content Quality	Accuracy, relevance, and timeliness of information.
	Multimedia Integration	Use of images, videos, and virtual tours.
	Operation and Pricing	Information on operation hour, schedules and pricing.
	Cultural Representation	Representation of local culture and attractions.
	Languages	Availability of information in multiple languages.
Communication	Social Media Integration	Links to social media pages and engagement enhancement.
	Contact Information	Ease of finding contact details.
	Interactive Features	Chatbots, forums, or Q&A sections.
	Feedback Mechanism	Collection and utilization of user feedback.
Electronic Commerce	Online Booking	Availability and ease of booking.
	Payment Options	Variety and security of payment methods.
	Security Measures	SSL certificates, privacy policies, and data protection practices.
Additional Functions	Website Accessibility	Compliance with web accessibility standards.
	Mobile Responsiveness	Usability on different devices.
	Privacy Policies	Clarity and comprehensiveness of privacy statements.

The information stresses the significance of content quality, which includes the accuracy, relevance, and timeliness of the information presented on the website. Multimedia integration, like the use of images, videos, and virtual tours, enhances the user's virtual experience and can serve as a preview of what tourists can expect (Firmansyah et al., 2023; Huang, 2020). Operational details such as hours, schedules, and pricing, along with cultural representations, contribute to the site's comprehensiveness and cater to the practical and cultural interests of potential tourists (Hornig & Tsai, 2010; Buhalis & Law, 2008; Cristobal-Fransi et al., 2020).

The communication dimension reflects the website's capacity to facilitate interaction between the service provider and the user. Sub-dimensions such as social media integration and contact information highlight the need for a platform to effectively engage users and provide essential details for inquiries and support (Burgess et al., 2010; Das Gupta & Utkarsh, 2014). The importance of interactive features like chatbots and forums emphasizes the trend towards interactive user experiences in digital tourism marketing (Chiou et al., 2010; Pencarelli, 2020; van Nuenen & Scarles, 2021).

In the context of Electronic Commerce, online booking systems are evaluated for their user-friendliness and efficiency, with payment options and security measures forming the basis of trust in online transactions (Cristobal-Fransi et al., 2020; Kim et al., 2009). The variety of payment methods and the implementation of security measures like SSL certificates are indicators of a website's credibility and reliability (Kim et al., 2009; Escobar-Rodríguez & Carvajal-Trujillo,

2013). Additional Functions assess the technical prowess of the website, such as mobile responsiveness, which is increasingly vital as mobile internet usage grows (Firmansyah et al., 2023; Domínguez Vila et al., 2018; Jantan et al., 2023). Additionally, the clarity and depth of privacy policies are paramount in ensuring users' trust and compliance with data protection regulations (Kim et al., 2009; Godovykh & Tasci, 2020).

METHOD AND APPROACHES

To accomplish the stated objectives, the study employed a mixed-methods research design, combining quantitative data analysis with qualitative insights. The initial phase involved an extensive review of existing tourism websites, focusing on user interface, functionality, and content relevance. This review helped in identifying best practices and key features that contribute to a user-friendly and informative website. Subsequently, a series of surveys and interviews will be conducted with potential visitors and local entrepreneurs to gather firsthand insights into user preferences and expectations. This dual approach had ensured a holistic understanding of the requirements for an effective tourism website.

In the development of the research design for the study on tourism websites, the study employed a mixed-methods approach. The combination of qualitative exploration and quantitative analysis allows researchers to gain an in-depth understanding of user needs while supporting the findings with measurable evidence (Godovykh & Tasci, 2020; Cristobal-Fransi et al., 2020). This approach enables a more comprehensive understanding of tourism website requirements and stakeholder expectations. Studies in tourism website evaluation have demonstrated the importance of combining different sources of data to better understand user behaviour, website effectiveness, and visitor experiences (Huang, 2020; Firmansyah et al., 2023). This strategy not only enhances the depth of understanding but also ensures methodological rigor, which is critical in achieving reliable results. Additionally, the integration of qualitative and quantitative data allows researchers to address research questions from multiple perspectives and generate richer insights into complex tourism-related issues (Godovykh & Tasci, 2020).

Finally, content analysis and stakeholder-based evaluations have highlighted the importance of methodological clarity and systematic data interpretation when examining tourism websites and user experiences (Hsieh & Shannon, 2005; Cristobal-Fransi et al., 2020). This awareness had guided the present study in ensuring that both qualitative and quantitative phases are well integrated and contribute effectively to the overall research objectives. Together, these studies reinforce the methodological framework adopted in this research and support the use of mixed methods as an appropriate approach for investigating tourism website requirements and stakeholder perspectives.

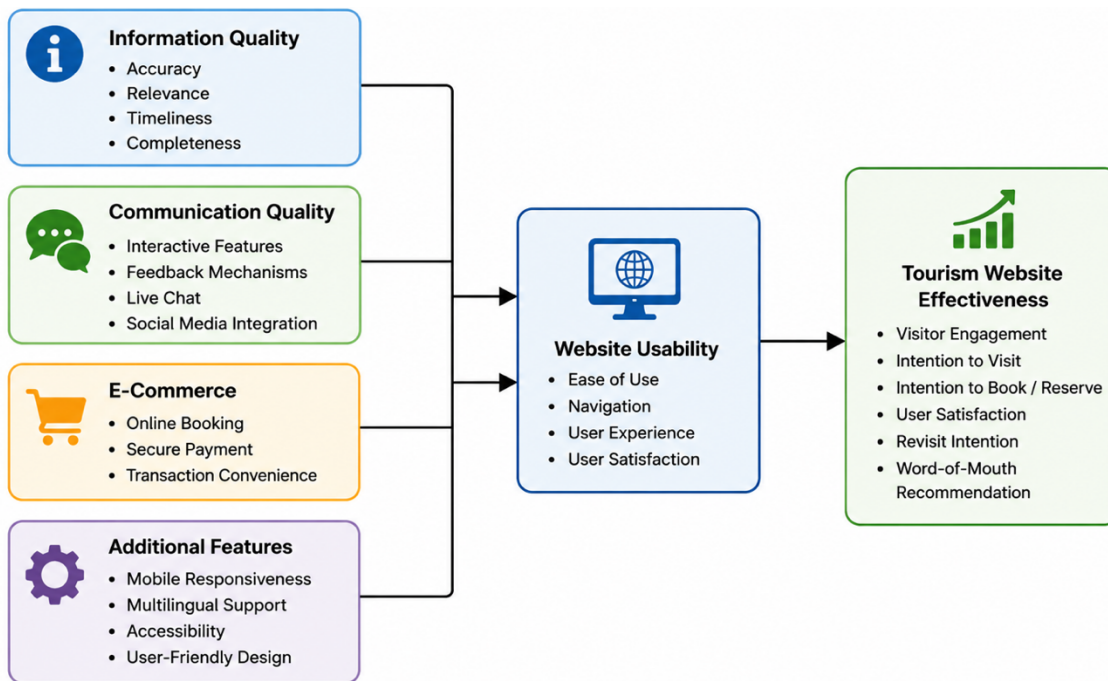


FIGURE 3. *Conceptual Framework*

FIGURE 3. illustrates the conceptual framework presented the central role of website content in aligning the interests and objectives of visitors and entrepreneurs within the tourism industry. This synthesis of content strategies comprises four main domains:

a) **Information:** The website must offer accurate, relevant, and current information to assist visitors in their decision-making process (Horng & Tsai, 2010; Vila et al., 2021). This content serves as the bedrock of the website, educating visitors about what Pugu, Lundu has to offer, from local attractions to cultural practices.

b) **Communication:** Interactive features, such as user feedback mechanisms and live chat services, are key in establishing a two-way communication channel between the destination and the visitor (Burgess et al., 2010; Gonçalves et al., 2018). This interactivity not only enhances the user experience but also serves as a valuable touchpoint for entrepreneurs to engage with and learn from potential customers.

c) **E-Commerce:** The convenience of online transactions is essential for modern tourism websites. With the incorporation of secure booking and payment systems, the e-commerce aspect facilitates the actual conversion of visitors into tourists, reflecting the operational effectiveness of the website (Cristobal-Fransi et al., 2020; Kim et al., 2009).

d) **Additional Features:** These include aspects such as multilingual support, mobile responsiveness, and accessibility, ensuring that the website is user-friendly for a diverse audience, including those with disabilities (Domínguez Vila et al., 2018; Gonçalves et al., 2018). Features like these not only widen the reach of the website but also adhere to universal design principles, reflecting an inclusive approach to digital tourism.

The research framework underlined the pivotal role that well-crafted website content plays in aligning the objectives of visitors and entrepreneurs within the tourism industry. At its core lies information domain related to the foundational content that informs potential visitors about the destination's offerings, from attractions to cultural insights, facilitating informed decision-making (Hornig & Tsai, 2010; Buhalis & Law, 2008). Communication is the next crucial domain, enabling a dynamic two-way interaction through feedback mechanisms and live chats, enhancing the visitor experience while offering businesses valuable insights (Burgess et al., 2010). E-Commerce functionality is integral as well, streamlining the transition from browsing to booking, with secure payment systems reflecting the website's operational effectiveness (Cristobal-Fransi et al., 2020; Kim et al., 2009). Lastly, additional features such as multilingual support and mobile responsiveness ensures the website's accessibility to a diverse audience and adherence to inclusive design principles (Domínguez Vila et al., 2018). This comprehensive approach to website content is presented as essential for the success and growth of the tourism sector, ensuring a seamless and engaging online user experience. The framework underscores the need for a holistic strategy where each component works in concert to create a synergistic user experience. Entrepreneurs can utilize this framework to identify key areas for development or enhancement in their digital offerings, ensuring their websites serve as effective portals for promoting tourism to Pugu, Lundu (Cristobal-Fransi et al., 2020; Pencarelli, 2020).

FINDINGS AND DISCUSSION

This study targeted 100 respondents involving 50 from entrepreneur and 50 from visitor. However, it only managed to get a total respondent of 60 with 30 entrepreneurs and 30 visitors.

Descriptive analysis in communication, information, E-Commerce and additional Features

There were 60 respondents of the study which involved 30 entrepreneurs in the tourism industry and 30 visitors. The findings are presented according to four dimensions: Information, Communication, E-Commerce, and Additional Features. The analysis focuses on the mean and standard deviation values to identify the relative importance of each feature from the perspectives of entrepreneurs and visitors. Overall, both entrepreneurs and visitors rated all information elements highly, indicating the importance of accurate, relevant, and accessible information on the website (Table 4). The highest-rated item was the provision of accurate information on visit duration, opening times, pricing, and tour schedules (entrepreneurs = 4.900; visitors = 4.767). The use of real images, virtual tours, and accurate destination information also received high ratings from both groups. Although information in multiple languages received the lowest mean scores, it was still considered important.

TABLE 4. *Descriptive Analysis in Information Variable*

Item	Entrepreneur		Visitor	
	Mean	Standard Deviation	Mean	Standard Deviation
The website needs to accurately describes the location, including its economic activity, address, origin, and history	4.833	0.531	4.333	0.844
The website needs show the real and use images, and virtual tours.	4.867	0.434	4.500	0.630
The website should show and listed accurate visual information about visit duration, opening times, pricing, and tour schedules.	4.900	0.403	4.767	0.504
The website should represent local cultures and attractions.	4.667	0.661	4.300	0.794
The website should be available of information in multiple languages.	4.433	0.935	4.100	0.845

Entrepreneurs and visitors generally agreed on the importance of communication features for the tourism website (Table 5). Social media integration received the highest rating from entrepreneurs (M = 4.967), while clear and accessible contact information was highly rated by both groups. Feedback mechanisms were also considered important, reflecting the need for continuous interaction and service improvement. Although chatbots received the lowest mean scores, they were still viewed positively. The standard deviation values indicated a relatively high level of agreement among respondents, with greater variation observed among visitors regarding the use of chatbots. These findings are consistent with previous studies that highlight the importance of communication and interactive features in enhancing user engagement and supporting tourism marketing efforts (Pencarelli, 2020; Firmansyah et al., 2023).

TABLE 5. *Descriptive Analysis in Communication Variable*

Item	Entrepreneur		Visitor	
	Mean	Standard Deviation	Mean	Standard Deviation
The website needs to link social media pages and engagement enhancement.	4.967	0.183	4.300	0.750
The website need to provide clear and accessible contact information, including telephone and e-mail, for inquiries and support.	4.833	0.461	4.667	0.606
The website should provide chatbot to ask enquiries.	4.533	0.730	3.933	1.048
The website should provide feedback for improvement and comment.	4.933	0.254	4.600	0.563

Both entrepreneurs and visitors place strong importance on e-commerce features (Table 6). A variety of payment methods received the highest ratings from both groups, followed closely by online booking functionality and the protection of user privacy. The relatively low standard deviation values suggest consistent responses across all items. These results highlight the importance of secure, convenient, and user-friendly transaction features in supporting tourism website effectiveness. Similar findings have been reported by Cristobal-Fransi et al. (2020) and

Gonçalves et al. (2018), who noted that online booking systems, secure payment options, and data protection are important factors influencing user trust and online transactions.

TABLE 6. *Descriptive Analysis in E-Commerce Variable*

Item	Entrepreneur		Visitor	
	Mean	Standard Deviation	Mean	Standard Deviation
The website should be available for direct online booking.	4.867	0.434	4.467	0.681
The website should be able to variety payment method such FPX, Debit, S-Pay etc.	4.900	0.305	4.667	0.547
The user privacy should be protected include all the data after doing payment or booking.	4.867	0.434	4.883	0.379

Entrepreneurs and visitors considered additional website features important for improving usability and accessibility (Table 7). Compliance with web accessibility standards received the highest rating among entrepreneurs, while visitors placed greater emphasis on clear privacy statements. Accessibility across multiple devices was also viewed positively by both groups. The standard deviation values indicate moderate agreement among respondents, suggesting that these features contribute to a trustworthy and inclusive user experience. This finding supports previous studies that emphasize the role of accessibility, mobile responsiveness, and user-centred design in improving website usability and user satisfaction (Huang, 2020; Vila et al., 2021; Firmansyah et al., 2023).

TABLE 7. *Descriptive Analysis in Additional Features Variable*

Item	Entrepreneur		Visitor	
	Mean	Standard Deviation	Mean	Standard Deviation
The website should have compliance with web accessibility standards.	4.733	0.521	4.400	0.724
The website is accessible with different devices such laptop, tablet etc.	4.300	0.837	4.433	0.728
The website should have clarity and comprehensiveness of privacy statements.	4.167	0.747	4.533	0.629

Entrepreneur perspectives on technology improvement and essential website features

Overall, entrepreneurs emphasized the need for stronger technological infrastructure and a comprehensive digital platform to support tourism development (Figure 4). The most common concern was the lack of adequate digital infrastructure, particularly internet connectivity. Respondents suggested the installation of additional communication towers to improve network coverage, as reliable connectivity is viewed as a prerequisite for supporting digital tourism initiatives and online business operations (Pencarelli, 2020; Kontogianni & Alepis, 2020).

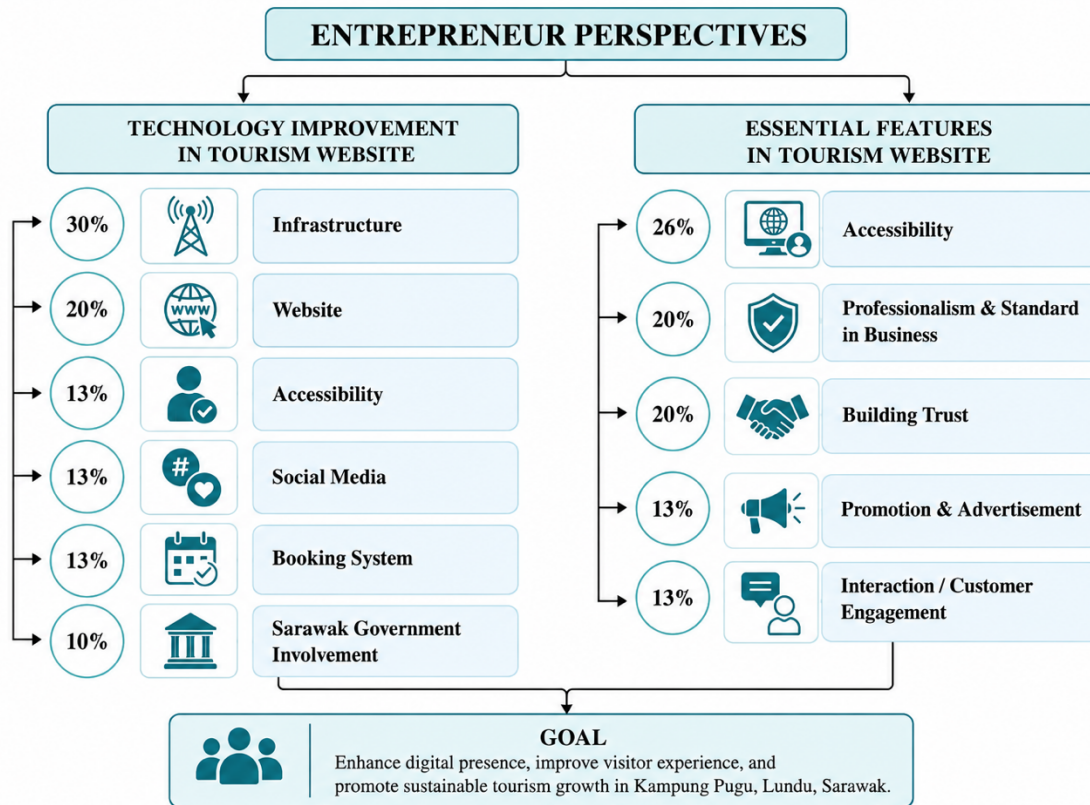


FIGURE 4. *Entrepreneurs Perspectives on Technology Improvement and Essential Website Features*

A recurring theme among the respondents was the need for a centralized tourism website that serves as a one-stop platform integrating local tourism-related businesses and services. Such a platform would improve access to information, simplify booking processes, and strengthen interactions between tourists and service providers (Heripracoyo et al., 2021). Entrepreneurs also highlighted the importance of digital marketing, particularly through social media, to increase the visibility of Kampung Pugu and attract both domestic and international visitors (Afren, 2024). The implementation of e-commerce solutions, including online booking systems and digital payment facilities, was viewed as an important step towards improving convenience and enhancing the visitor experience (Cristobal-Fransi et al., 2020; Huang, 2020).

The findings indicated that entrepreneurs regard accessibility as the most essential feature of a tourism website. Accessibility encompasses ease of navigation, user-friendliness, and the ability to cater to a diverse range of users. Professionalism, business standards, and trust-building were also identified as important considerations, reflecting the need for a credible and well-organized online presence (Chung et al., 2015). Respondents emphasized that tourism websites should contain high-quality images, videos, accurate destination information, interactive booking systems, clear contact information, and social media integration. Interactive features such as chatbots, feedback mechanisms, and user engagement tools were also considered valuable in enhancing communication and visitor experience (Firmansyah et al., 2023; Vila et al., 2021).

In addition, entrepreneurs had stressed the importance of transparency through the display of licensing information, terms and conditions, and other formal documentation that can strengthen user trust (Das Gupta & Utkarsh, 2014). Social media integration was viewed as a useful tool for promotion, customer engagement, and community building (Pencarelli, 2020). Collectively, these findings suggest that entrepreneurs view a tourism website as more than a source of information; it is a strategic platform for promotion, communication, customer engagement, and business transactions. By improving infrastructure, strengthening digital marketing efforts, implementing e-commerce capabilities, and developing a centralized tourism platform, Kampung Pugu has the potential to enhance its digital tourism presence and attract a wider audience of visitors (Buhalis & Law, 2008; Pencarelli, 2020).

Visitors’ perspectives on technology improvement and essential website features

Generally, visitors emphasized the importance of strengthening digital infrastructure, improving access to information, and enhancing the online presence of the destination (Figure 5). The findings indicated that the most important area for improvement is the provision of detailed and comprehensive information (40%), followed by accessibility, promotion and advertisement, building trust, and interaction. These findings suggested that visitors value technology that enabled them to obtain accurate information, interact with service providers, and make informed travel decisions.

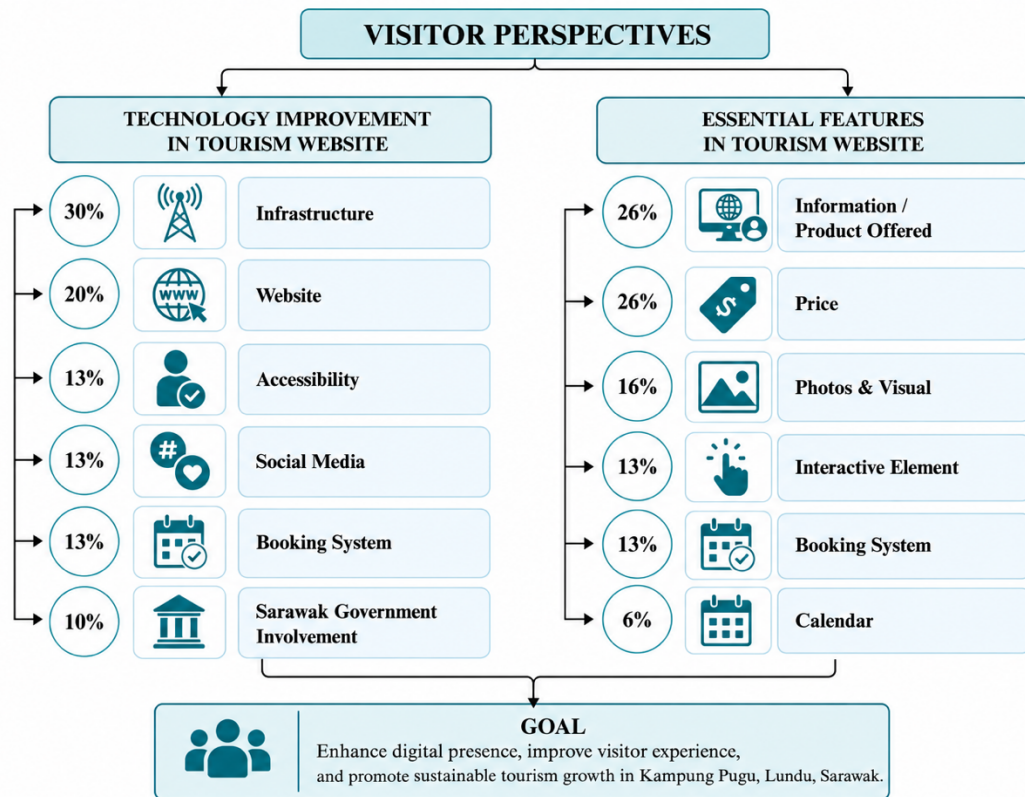


FIGURE 5. Visitors Perspectives on Technology Improvement and Essential Website Features

Respondents highlighted the need for stronger digital infrastructure and more interactive websites that provide detailed information about local attractions, cultural activities, accommodations, and tourism products. Similar to the entrepreneurs' perspectives, visitors emphasized the importance of utilizing digital marketing strategies and social media platforms such as Facebook, Instagram, TikTok, and travel-related applications to increase the visibility of Kampung Pugu and attract a wider audience (Afren, 2024; Pencarelli, 2020). Visitors also suggested the development of a centralized tourism platform containing information on local attractions, events, and tourism services, supported by interactive maps and digital guides (Heripracoyo et al., 2021).

The findings revealed that visitors place significant importance on information availability and pricing transparency, both representing the highest proportion of essential website features (26%). Visitors expected tourism websites to provide detailed descriptions of attractions, activities, products, and services, allowing them to make informed decisions before visiting the destination. High-quality photos and visual content were also identified as important features, highlighting the role of visual presentation in enhancing destination attractiveness and visitor engagement (Firmansyah et al., 2023). Interactive elements, including feedback platforms and communication tools, were viewed positively as they support engagement and improve the overall user experience (Vila et al., 2021).

In addition, respondents emphasized the importance of an efficient online booking system that enables visitors to check availability and make reservations conveniently. This finding supports previous studies that identify booking functionality and transaction convenience as important determinants of tourism website effectiveness (Cristobal-Fransi et al., 2020; Huang, 2020). Visitors also highlighted the need for multilingual support, social media integration, real-time updates, feedback mechanisms, and chatbot services to improve accessibility and communication. These features contributed to a more user-friendly and interactive digital environment while enhancing visitor confidence and satisfaction (Firmansyah et al., 2023; Peong et al., 2023).

Overall, the findings showed that visitors expected a tourism website to function as a comprehensive information and communication platform rather than merely a promotional tool. The integration of engaging content, visual elements, booking systems, interactive features, and multilingual support can significantly enhanced the visitor experience while strengthening the digital presence of Kampung Pugu, Lundu. These improvements are essential for increasing destination visibility, attracting potential tourists, and supporting the sustainable development of the local tourism sector (Buhalis & Law, 2008; Pencarelli, 2020).

CONCLUSION

This study highlighted the critical need for a robust online presence that integrates comprehensive and engaging content, high-quality visuals, user-friendly interfaces, effective online booking systems, and strong social media integration to cater to both visitors and entrepreneurs. These features are crucial in promoting tourism and improving the user experience, which in turn can significantly contribute to tourism growth and economic development in the region (Buhalis & Law, 2008; Pencarelli, 2020; Cristobal-Fransi et al., 2020). The findings suggested that by

implementing these digital strategies, Kampung Pugu, Lundu can strengthen its position as a tourism destination for both local and international tourists while leveraging digital technologies to improve visitor engagement, accessibility, and satisfaction (Domínguez Vila et al., 2018; Huang, 2020; Vila et al., 2021).

Overall, this study contributes to the growing body of knowledge on digital tourism and tourism website development, particularly within the context of rural tourism destinations. The findings provide practical recommendations for improving tourism websites and supporting destination promotion through digital platforms. These insights may serve as a useful reference for future tourism development initiatives in Kampung Pugu, Lundu and other rural tourism destinations seeking to enhance their digital presence, improve visitor experiences, and strengthen their competitiveness in the digital tourism environment (Afren, 2024; Firmansyah et al., 2023; Peong et al., 2023).

Potential topics for future study

The article outlined several areas for further investigation. Future study may include a more diverse and larger sample size which would enhance the reliability and applicability of the results to a broader context. More relevant stakeholders should be involved as either participants, partners or consultants such as the Sarawak Tourism Board, District Office or NGOs related to the economic regeneration for community. In addition, other variables that might influence the effectiveness of tourism websites may also be explored. This could include studying the impact of cultural differences on website preferences, the role of social media integration in enhancing user engagement, or the effectiveness of different types of interactive content. Understanding these variables can help in developing more tailored and effective website features. Conducting longitudinal studies could provide insights into the long-term effects of website features on tourist engagement and satisfaction. Such studies can track changes over time, providing a dynamic view of how tourists' preferences evolve and how effectively the website adapts to these changing needs.

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Artificial intelligence (AI) tools were used on a limited basis during the preparation of this manuscript. SciSpace and Perplexity were used to assist in summarising selected literature, while ChatGPT was used to assist in illustrating several figures and improving the presentation of content. Grammarly AI was used for spelling, grammar, and language refinement. All analysis, interpretations, findings, and conclusions presented in this study were independently reviewed and verified by the researcher.

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