Key Factors for Digital Marketing Adoption in the Tourism Industry: Case Study of the Mandalika Special Economic Zone

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Abstract: The tourism industry is a very dynamic and competitive sector, where the adoption of digital technology is the key to increasing competitiveness and operational efficiency. The Mandalika Special Economic Zone (KEK), as one of the leading tourism destinations in Indonesia, faces challenges and opportunities in adopting digital marketing to attract tourists and investment. This research aims to identify key factors that influence digital marketing adoption in the Mandalika SEZ using a technology–organization–environment (TOE) framework. Based on data collected from 310 respondents through an online survey, the research results show that compatibility, entrepreneurship, competitive pressure, changes in the digital environment, and shortage of human resources have a significant influence on digital marketing adoption. Compatibility was found to be the most significant factor influencing digital marketing adoption, while relative advantage and complexity had no significant influence. These results provide practical and theoretical insights for stakeholders in the tourism industry to implement effective and efficient digital marketing strategies. In this way, the Mandalika SEZ can maximize its potential as a world-class tourism destination and contribute to regional and national economic growth.

Keyword: Technology, marketing, digital, tourism, KEK, Mandalika, TOE.

INTRODUCTION

The tourism industry is a highly dynamic and competitive sector, where the adoption of digital technology is key to improving competitiveness and operational efficiency (Kurniati & Suryanto, 2023). In the context of globalization and rapid technological development, tourism destinations around the world are competing to utilize digital technology to attract tourists and meet increasingly complex market expectations (Hartarto & Azizurrohman, 2022). Digital technology allows tourism destinations to interact with potential tourists through various online

platforms, provide more accessible information, and create a more personalized and satisfying experience for tourists (Armutcu et al., 2023).

Mandalika Special Economic Zone (SEZ), as one of the leading tourism destinations in Indonesia, faces challenges and opportunities in adopting digital marketing to attract tourists and investment (Azizurrohman et al., 2023; Yuli et al., 2023). Mandalika SEZ has great potential with stunning natural beauty and various modern facilities being developed. However, to be able to compete with other international destinations, KEK Mandalika needs to utilize digital marketing effectively. Digital marketing, which includes the use of internet technology, social media, and search engines, offers various advantages such as lower costs, wider reach, and the ability to customize marketing messages more effectively compared to traditional marketing.

The use of digital marketing is not just about following trends, but also an important strategy to achieve sustainability and growth in the tourism industry (Armutcu et al., 2023). Digital marketing allows destinations to reach a wider audience in a more cost-effective way, as well as utilize data and analytics to measure the effectiveness of marketing campaigns (Ilmi et al., 2023). In addition, digital marketing provides the flexibility to adjust marketing strategies in real-time based on consumer feedback and behavior.

This study aims to identify the key factors influencing the adoption of digital marketing in Mandalika SEZ. Using the technology-organization-environment (TOE) framework, this study analyzes various aspects that influence tourism organizations' decision to adopt digital marketing. These factors include competitive pressure, changes in the digital environment, technology suitability, entrepreneurship, and human resource and cost limitations.

Competitive pressures are driving tourism destinations to constantly innovate and find new ways to attract travelers. Changes in the digital environment, such as the increased use of smartphones and social media, create new opportunities as well as challenges for destinations to remain relevant and attractive. Technological fit refers to the extent to which digital technologies can be integrated easily into existing organizational structures and processes. Entrepreneurship in this context refers to the organization's ability to adopt creative and innovative approaches to implementing digital technologies. Limited human resources and costs are often major barriers to the adoption of new technologies, making it important to identify strategies that can overcome these obstacles.

Through this analysis, a better understanding of how Mandalika SEZ and similar tourism destinations can utilize digital marketing to increase tourist attraction and operational efficiency is expected. The findings of this study are also expected to provide practical recommendations for stakeholders in the tourism industry to implement effective digital marketing strategies. Thus, Mandalika SEZ can maximize its potential as a world-class tourism destination and contribute to regional and national economic growth.

Digital Marketing in the Tourism Industry

Digital marketing is a new approach to marketing that uses digital technology and online channels to promote and sell various company services, brands, and products to customers (Musliha & Adinugraha, 2022). In the context of the tourism industry, digital marketing includes various technologies and techniques such as email marketing, affiliate marketing, display advertising, pay-per-click, mobile marketing, social media marketing, SMS marketing, SEO, search engine marketing, digital marketing analytics, and content marketing (Chamboko-Mpotaringa & Tichaawa, 2021). The advantages of digital marketing compared to traditional marketing include greater exposure to customers, cost-effectiveness, ease of measuring marketing activities through tools such as Google Analytics, customer engagement through interactive communication, the ability to easily redefine strategies, better brand development, and equal opportunities for small businesses (Mkwizu, 2019).

Digital marketing enables tourism destinations such as the Mandalika Special Economic Zone (SEZ) to reach a wider audience in a more cost-efficient manner, and utilize data and analytics to measure the effectiveness of marketing campaigns. As such, destinations can adjust marketing strategies in real-time based on consumer feedback and behavior. This is particularly important in the highly competitive tourism industry, where attraction and customer satisfaction are key factors in attracting tourists and investment.

Technology-Organization-Environment (TOE) Framework

The technology-organization-environment (TOE) framework developed by L. G. Tornatzky & Fleischer (1990) has been widely used in information technology (IT) adoption research in various organizations. This framework identifies three main contexts that influence technology adoption: technological context, organizational context, and environmental context. In the technological context, variables often analyzed include relative advantage, complexity, and compatibility of the new technology with existing technologies. In the organizational context, variables such as shared goals, entrepreneurship, financial costs, and limited human resources are the main focus. Meanwhile, in the environmental context, competitive pressures and changes in the digital environment are important factors (AlSharji et al., 2018; Qalati et al., 2021).

In this study, the TOE framework is used to analyze the factors influencing the adoption of digital marketing in Mandalika SEZ. The relative advantages of digital marketing, such as cost efficiency and personalization capabilities, are expected to increase the adoption of these technologies among tourism organizations. However, the complexity of understanding and using digital technology can be a barrier to adoption, especially if the technology is perceived as difficult by users (Kosasi, 2019).

Technology Adoption in Tourism

Research on technology adoption in the tourism industry shows that technology compatibility with organizational values and practices has a strong positive influence on new technology adoption (Cai et al., 2021; Tyan et al., 2020). In the context of tourism, high acceptance of digital technology can improve operational efficiency and destination attractiveness (Pratisto et al., 2022). For example, the Mandalika SEZ can leverage digital technologies to strengthen destination marketing and management, enhance the tourist experience, and improve global competitiveness.

Competitive pressures and changes in the digital environment are also key factors driving the adoption of digital marketing in the tourism industry. Destinations that are able to adapt quickly to these changes tend to be more successful in attracting and retaining tourists. Therefore, tourism organizations in Mandalika SEZ need to develop adaptive and innovative digital marketing strategies to remain relevant and competitive in the ever-changing global market.

Through this literature analysis, it is expected to gain deeper insights into the key factors influencing the adoption of digital marketing in the tourism industry, particularly in Mandalika SEZ. This understanding is important for developing practical recommendations for stakeholders in the tourism industry to implement effective and efficient digital marketing strategies.

Hypothesis

To develop hypotheses, we use a research model that is based on the technology-organization-environment (TOE) framework and reflects the characteristics of tourism organizations in Mandalika SEZ. This research model posits that variables in the three areas of TOE technology context (relative advantage, complexity, and compatibility), organizational

context (shared goals, entrepreneurship, financial costs, and human resource shortages), and external environmental context (competitive pressures and changes in the digital environment) influence the adoption of digital marketing by tourism organizations.

H1 : Relative advantage positively influences the adoption of digital marketing in Mandalika SEZ.

H2 : Complexity negatively influences digital marketing adoption in Mandalika SEZ.

H3 : Compatibility positively influences the adoption of digital marketing in Mandalika SEZ.

H4 : Shared goals positively influence the adoption of digital marketing in Mandalika SEZ.

H5 : Entrepreneurship positively influences the adoption of digital marketing in Mandalika SEZ.

H6 : Financial costs negatively affect the adoption of digital marketing in Mandalika SEZ.

H7 : Human resource shortages negatively affect the adoption of digital marketing in Mandalika SEZ.

H8 : Competitive pressure positively influences the adoption of digital marketing in Mandalika SEZ.

H9: Changes in the digital environment positively influence the adoption of digital marketing in Mandalika SEZ.
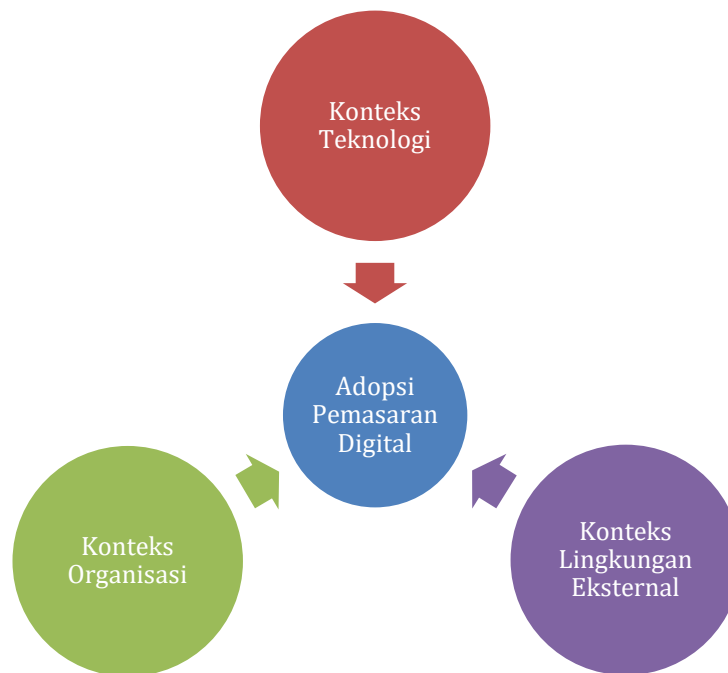

Figure 1. Research Framework

METHOD

To collect data related to digital marketing adoption in the Mandalika Special Economic Zone (KEK), we visited various tourism organizations in the area to explain the purpose of this study and seek cooperation in data collection. Data were collected online from members of tourism organizations using a mobile questionnaire. A total of 310 questionnaires were successfully collected. Among the respondents, 131 were male and 179 were female, with 80% aged 40 years or older. The majority of organizations that participated in the survey were homestay industries, and about 77% of these organizations had less than 50 permanent staff.

The measures for relative advantage, complexity, and compatibility were developed by adapting from a study conducted by Yoon (2024). The measures for shared purpose and entrepreneurship in an organizational context were developed specifically for this study. The

measures for financial costs and human resource shortages were developed by adapting from (Kwak et al., 2023). The measures for competitive pressure and digital environmental change were adapted from Yoon et al. (2024).

The reliability and validity of the measurement items for the constructs were verified based on the measurement model calculated through confirmatory factor analysis (CFA). The reliability results showed that the Cronbach's alpha and composite reliability (CR) values representing the internal consistency of the constructs were all much higher than the recommended value of 0.70 (Golafshani, 2015). Therefore, this indicates that there is reliability for all measurement items for the constructs.

Table 1. Reliability and Validity

Contruct	Cron. Alpha	CR	AVE
Relative advantage	0.931	0.956	0.879
Complexity	0.861	0.915	0.782
Compatibility	0.879	0.926	0.807
Common goals	0.936	0.969	0.940
Entrepreneurship	0.894	0.934	0.825
Lack of human resources	0.877	0.942	0.889
Financial costs	0.900	0.952	0.901
Competitive pressure	0.876	0.941	0.889
Changes in the digital environment	0.819	0.893	0.734
Adoption of Digital Marketing	0.960	0.960	0.962

Source : Research Data

In the measurement model, when the average variance extracted (AVE) of a construct is higher than 0.50, the convergent validity of a construct is verified (Gefen and Straub 2005). The AVE values for all constructs far exceed the recommended value of 0.5. The discriminant validity of a construct is confirmed when the correlation value between constructs is smaller than the square root of the AVE of the construct (Golafshani, 2015).

Hypothesis testing was conducted using a structural model that shows the causal relationships between constructs of the research model. Table 2 details the path coefficients, t-values, and p-values for the structural model.

Table 2. Hypothesis Testing Results

Variable	Path Coefficient	t value	p-value	Testing	Hypothesis
Relative Advantage→ Adoption	0.085	1.173	0.126	Rejected	H1
Complexity → Adoption	0.029	0.455	0.325	Rejected	H2
Compatibility → Adoption	0.369	4.944	0.002	Accepted	H3
Common Goal → Adoption	0.009	0.063	0.471	Rejected	H4
Entrepreneurship → Adoption	0.159	2.170	0.015	Accepted	H5
Financial Costs → Adoption	-0.078	-1.259	0.104	Rejected	H6
Lack of Human Resources → Adoption	-0.096	-2.170	0.019	Accepted	H7
Competitive Pressure → Adoption	0.173	3.358	0.002	Accepted	H8
Digital Environment Changes	0.263	3.827	0.003	Accepted	H9
R-Sq.	0.670				

Source : Research Data

The results of hypothesis testing show that not all hypothesized factors have a significant influence on the adoption of digital marketing in the Mandalika Special Economic Zone (SEZ). The first hypothesis (H1) stating that relative advantage affects digital marketing adoption is rejected, with a path coefficient of 0.085, a t-value of 1.173, and a p-value of 0.126. This indicates that relative advantage has no significant influence on the adoption of digital marketing. The second hypothesis (H2) stating that complexity affects digital marketing

adoption is also rejected, with a path coefficient of 0.029, a t-value of 0.455, and a p-value of 0.325, indicating that complexity does not significantly affect digital marketing adoption.

Conversely, the third hypothesis (H3) stating that compatibility has a positive influence on digital marketing adoption is accepted. The results show a path coefficient of 0.369, a t-value of 4.944, and a p-value of 0.002, indicating that compatibility significantly influences digital marketing adoption. The fourth hypothesis (H4) stating that shared goals have a positive influence on digital marketing adoption is rejected, with a path coefficient of 0.009, a t value of 0.063, and a p value of 0.471, indicating that shared goals have no significant effect.

Furthermore, the fifth hypothesis (H5) which states that entrepreneurship has a positive influence on digital marketing adoption is accepted, with a path coefficient of 0.159, a t-value of 2.170, and a p-value of 0.015. This indicates that entrepreneurship has a significant influence on the adoption of digital marketing. The sixth hypothesis (H6) stating that financial cost has a negative influence on digital marketing adoption is rejected, with a path coefficient of -0.078, a t value of -1.259, and a p value of 0.104, indicating that financial cost has no significant effect.

The seventh hypothesis (H7) stating that lack of human resources has a negative influence on digital marketing adoption is accepted, with a path coefficient of -0.096, a t-value of -2.170, and a p-value of 0.019. This indicates that the lack of human resources has a significant influence on the adoption of digital marketing. The eighth hypothesis (H8) stating that competitive pressure has a positive influence on digital marketing adoption is accepted, with a path coefficient of 0.173, a t value of 3.358, and a p value of 0.002, indicating that competitive pressure has a significant influence. Finally, the ninth hypothesis (H9) which states that changes in the digital environment have a positive influence on the adoption of digital marketing is also accepted, with a path coefficient of 0.263, a t value of 3.827, and a p value of 0.003, indicating that changes in the digital environment have a significant effect.

Overall, the R-Squared value of 0.670 indicates that this research model is able to explain 67% of the variation in digital marketing adoption, which indicates that the variables in the model have a fairly good predictive power of digital marketing adoption in Mandalika SEZ.

RESULTS AND DISCUSSION

The results of this study provide valuable insights into the factors that influence the adoption of digital marketing in the Mandalika Special Economic Zone (SEZ). The findings show that compatibility, entrepreneurship, human resource shortage, competitive pressure, and changes in the digital environment have a significant influence on the adoption of digital marketing.

Compatibility emerged as the most significant factor, suggesting that when digital marketing technologies are compatible with existing values and practices in tourism organizations, the likelihood of adoption increases. This is in line with previous research that emphasizes the importance of compatibility in the adoption of new technologies (Kwak et al., 2023). Entrepreneurship was also shown to have a positive effect, reflecting that organizations with entrepreneurial traits tend to be more proactive in adopting new technologies to improve their competitiveness.

In contrast, relative advantage and complexity have no significant influence on digital marketing adoption. This may be due to the perception that although digital marketing offers many advantages, the challenges in its implementation are still a major obstacle. This finding differs from some previous studies which found that relative advantage is the main determinant of technology adoption (Alshamaila et al., 2013; Gangwar et al., 2013).

Competitive pressures and changes in the digital environment also play an important role. Tourism organizations in Mandalika SEZ face intense competition, making the adoption of digital marketing an important strategy to remain competitive. Changes in the digital

environment, such as increased use of technology and social media, encourage organizations to adapt and adopt digital marketing technologies to stay relevant.

Human resource shortages have been shown to have a significant negative influence on digital marketing adoption. Tourism organizations often face limitations in terms of skilled and knowledgeable staff in digital technology, which hinders their ability to effectively implement and leverage digital marketing.

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The findings of this study have several practical implications for stakeholders in Mandalika SEZ and similar tourism destinations. First, it is important for tourism organizations to ensure that the digital marketing technologies adopted are in line with existing organizational values and practices. Training and skill development of staff in digital technologies is also crucial to address human resource shortages.

Second, given the importance of entrepreneurship, organizational management needs to encourage a culture of innovation and creativity to take advantage of the opportunities offered by digital technologies. Digital marketing strategies should be designed to deal with competitive pressures and changes in the digital environment, ensuring that the organization remains adaptive and responsive to market changes.

Third, external support from the government and related agencies can play an important role in helping tourism organizations overcome financial and human resource constraints. Training programs, funding, and other initiatives can help accelerate the adoption of digital marketing and improve the competitiveness of tourism destinations.

Overall, this research provides practical and theoretical guidance that can help tourism organizations in Mandalika SEZ and other destinations to effectively adopt and leverage digital marketing technologies, increase tourist attraction, and drive sustainable economic growth.

CONCLUSION

This study aims to identify the key factors influencing the adoption of digital marketing in the tourism industry, with a focus on the Mandalika Special Economic Zone (SEZ). Using the technology-organization-environment (TOE) framework, this study reveals that compatibility, entrepreneurship, competitive pressures, changes in the digital environment, and human resource shortages are key determinants in the adoption of digital marketing in Mandalika SEZ.

The findings of this study indicate that compatibility is the most significant factor affecting digital marketing adoption. Tourism organizations that see digital marketing as a technology that is compatible with their values and practices are more likely to adopt it. Entrepreneurship was also shown to have a positive effect, suggesting that organizations that are innovative and proactive are more likely to take advantage of digital technology.

In contrast, relative advantage and complexity had no significant influence on the adoption of digital marketing, suggesting that despite the economic benefits of digital marketing, barriers to its use remain a challenge. Competitive pressures and changes in the digital environment are the main drivers of adoption of these technologies, underscoring the importance of adaptive responses to market and technological dynamics.

Lack of human resources is a significant barrier to the adoption of digital marketing. Tourism organizations often face limitations in terms of staff with skills and knowledge in digital technologies, which hinders their ability to effectively implement and leverage digital marketing.

This research makes a theoretical contribution by expanding the understanding of the factors influencing technology adoption in the tourism industry and makes a practical contribution by offering guidance to stakeholders in Mandalika SEZ and other tourism destinations. The practical implications of this research include the importance of training and developing staff skills in digital technology, encouraging a culture of innovation, as well as external support from the government and relevant agencies to overcome financial and human resource constraints.

Overall, this study emphasizes that the adoption of digital marketing is an important step for tourism destinations to remain competitive and relevant in the digital age. By overcoming barriers and leveraging enablers, Mandalika SEZ can maximize the potential of digital marketing to attract more tourists, enhance their experience, and drive sustainable economic growth.

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