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Bridging Digital Marketing and Tourism Development: The Role of Social Media Marketing in Enhancing Business Performance

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Abstract

This study examines the influence of technological, organizational, and environmental factors on the adoption of social media marketing and its impact on the performance of Micro, Small, and Medium Enterprises (MSMEs) in Labuan Bajo, a tourism destination. Grounded in the Diffusion of Innovation (DOI) theory and the Technology-Organization-Environment (TOE) framework, it explores how internal and external factors drive digital marketing adoption. A quantitative method was used, collecting data from 150 MSME actors via surveys conducted between October and December 2024. Sampling followed Hair's (2010) SEM parameter guidelines, and responses were measured using a 5-point Likert scale. The Structural Equation Modeling (SEM) results show that technological, organizational, and environmental factors significantly influence social media marketing adoption. Moreover, technological factors and social media use positively affect business performance, while organizational and environmental factors do not have a direct impact. These findings highlight the importance of digital readiness and strategic use of social media in improving MSME performance. This study contributes to the integration of DOI and TOE theories in MSME research and offers insights for enhancing digital capability in emerging tourism economies.

Keywords Adoption Social Media Marketing, Business Performance, Technology-Organization-Environment (TOE)

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Introduction

Micro, Small, and Medium Enterprises (MSMEs) form the backbone of Indonesia's economy, contributing over 60% to the country's Gross Domestic Product (GDP) and employing approximately 97% of the national workforce (Novandari, 2021). Their role is particularly critical in supporting local economies, especially in tourism-driven areas such as Labuan Bajo, East Nusa Tenggara. As one of Indonesia's National Tourism Strategic Areas (KSPN), Labuan Bajo has experienced rapid growth in the tourism sector, which has in turn fostered the emergence of diverse MSMEs including those in culinary services, local transportation, community-based accommodations, and creative economy products (Ahmad & Bakar, 2018). The COVID-19 pandemic posed significant challenges for MSMEs in the region (Hussain et al., 2024). A sharp decline in tourist numbers led to reduced revenues, disruptions in product distribution, and a decrease in operational capacity for many businesses (Bhaskara & Filimonau, 2021). In response, digital transformation, particularly through social media marketing, has become a crucial strategy for sustaining business operations and expanding market reach. Social media platforms offer an efficient, low-cost, and responsive channel for promotional activities, especially in the dynamic context of tourism (Ye et al., 2022). However, the adoption of social media among MSMEs remains uneven. Many business owners face obstacles such as limited digital literacy, insufficient technical skills, and restricted access to technological infrastructure (Gohary, 2012). Internal factors, like managerial capability and organisational readiness, along with external elements such as government support or competitive pressure also influence the success of digital marketing adoption (Andersson et al., 2024). Previous studies have mostly focused on tech-based MSMEs in developed countries or specific segments of the creative industry, making them less applicable to the realities faced by businesses operating in emerging tourism destinations like Labuan Bajo. The Technology-Organisation-Environment (TOE) framework developed by Drazin (1991) provides the main theoretical foundation for this study. The TOE model suggests that an organisation's decision to adopt new technology is shaped by three key dimensions: technological characteristics (e.g., ease of use, compatibility, relative advantage), internal organizational factors (e.g., resources, structure, preparedness), and external environmental conditions (e.g., competitive pressure, regulatory support) (Drazin, 1991). In this research, the TOE framework is used to explore how MSMEs in Labuan Bajo make strategic decisions regarding the adoption of social media for marketing, as well as to identify the most influential factors in that process. In addition to TOE, Rogers' Diffusion of Innovation (DOI) theory also serves as a relevant theoretical lens. DOI emphasises that innovation adoption including digital technologies, is shaped by the perceived characteristics of the innovation, the traits of the adopters, and the broader social context (Drazin, 1991). This study leverages DOI to deepen the understanding of how MSMEs perceive the benefits, complexity, and visibility of social media tools, and how those perceptions influence adoption rates. The theory also sheds light on variations in adoption speed among different businesses and highlights the factors that either facilitate or hinder the diffusion of innovation within local business communities (Badari, 2024). This research offers a novel contribution by integrating both the TOE and DOI frameworks within the context of a developing tourism destination. Unlike earlier studies that center on more developed sectors or regions, this study positions MSMEs within a local economic landscape that heavily

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relies on tourism (Chaves et al., 2024). It not only investigates the key factors influencing social media adoption but also empirically examines its impact on business performance such as improvements in sales, operational efficiency, and market expansion (Collazos et al., 2025). The aim of this study is to provide deeper insights into the drivers and barriers of social media marketing adoption among MSMEs in Labuan Bajo. Moreover, it seeks to understand how such adoption contributes to improved business outcomes. The findings are expected to enrich the theoretical discourse on digital technology adoption models tailored to tourism-oriented MSMEs, while also offering practical recommendations for business owners, local governments, and stakeholders in crafting adaptive, contextual, and sustainable digital strategies.

Literature review

The TOE framework, initially proposed by Drazin (1991) provides a comprehensive model for understanding the factors that influence the adoption of technological innovations within organisations. This framework categorises the influencing elements into three dimensions: technological factors (both internal and external technologies available), organisational factors (resources, size, and structure), and environmental factors (competitive pressure, external support, and regulatory conditions) (Nguyen et al., 2022). In the context of this study, which focuses on the role of social media marketing (SMM) in enhancing Business Performance in the tourism destination of Labuan Bajo, the TOE framework serves to identify the key determinants that drive the adoption of SMM (Abera et al., 2024). This research evaluates not only the technological readiness of MSMEs but also examines their internal capabilities and the external pressures or supports that influence digital marketing adoption. Thus, TOE offers a robust theoretical foundation for formulating hypotheses about the drivers of SMM adoption and its subsequent impact on business performance (Al-Shaikh & Hanaysha, 2023). The use of social media in marketing has become increasingly essential for MSMEs in the face of growing digital competition. Technological factors are among the primary enablers of innovation adoption. For instance, Salah & Ayyash (2024) found that perceived benefits and technology readiness significantly influenced the adoption of social media in small businesses in Yemen. Similarly, Yusrini (2024) emphasised the importance of usability and reliability in digital marketing technology adoption. In the Malaysian context, Aldao and Mihalic 2020 reported that having access to appropriate technologies was critical for effective social media utilisation among MSMEs.

H1: Technological factors influence the adoption social media marketing.

Organisations possess varying internal characteristics that affect how they manage and adopt new technologies, including social media platforms. Elements such as organisational structure and resource readiness are key in shaping the success of digital strategies (Almohaimmeed, 2019). Amin et al. (2024) found that digital competence and employee skills contribute directly to organisational readiness for social media use. Ao et al. (2023) noted that strong management support and innovation-oriented organisational structures facilitate faster digital adoption. Hasanah et al. (2025) also emphasised that firm size and operational flexibility significantly impact decisions regarding digital transformation.

H2: Organisational factors influence the adoption social media marketing.

In a competitive business landscape, MSMEs are compelled to adapt their marketing strategies to remain relevant. External pressures such as industry trends and policy support play a crucial role in shaping adoption decisions (Nguyen et al., 2022). Banerji & Singh (2024) highlighted that customer and competitor pressure were major drivers for adopting social technologies. (Alalwan, 2018) observed that tourism industry actors who responded to consumers' digital expectations were quicker to integrate social media. Armutcu et al. (2023) also found that government regulatory support and access to digital training helped accelerate the digital transformation of MSMEs in Indonesia.

H3: Environmental factors influence the adoption social media marketing.

Technology adoption not only streamlines marketing activities but also enhances business efficiency and productivity. When properly utilised, technology can offer a competitive edge in rapidly evolving markets. Al-Dmour et al. (2022) demonstrated that effective use of information technology positively impacts organisational efficiency. Anim et al. (2023) noted that digital tools like social media expand market reach and improve customer relationships. Similarly, Nguyen et al. (2022) reported that technological readiness among tourism MSMEs in developing countries correlates directly with increased sales and business expansion.

H4: Technological factors influence business performance.

An organisation’s internal strengths in terms of management and resource capabilities play a vital role in determining business success. Firms that can effectively manage their internal resources tend to perform better in implementing digital strategies (Ahmad et al., 2024). Ariani (2023) showed that internal competencies, including staff training and HR management, have a direct effect on productivity. Alqahtani & Uslay (2020) emphasised that internal innovation and an adaptive organisational culture support successful digitalisation. Odoom & Mensah (2019) further highlighted that strong internal strategies enhance the effectiveness of social media in driving business performance.

H5: Organisational factors influence business performance.

External factors such as market pressure, regulatory support, and access to business networks also contribute to business performance. A supportive external environment can open new opportunities and accelerate growth (Al-Shaikh & Hanaysha, 2023). Schutte (2022) found that competitive pressure and favourable government policies influence the effectiveness of IT implementation. Dong et al. (2024) underscored the role of community collaboration and strategic partnerships in enhancing business visibility and reputation. Sifolo (2023) also stated that consumer engagement and a strong digital presence on social media are crucial for the success of tourism-related businesses.

H6: Environmental factors influence business performance.

Adoption social media marketing

The adoption of SMM has emerged as a crucial strategy for businesses particularly micro, small, and medium enterprises (MSMEs) in addressing marketing challenges in the digital age (Hernandez & Lee, 2025). The successful adoption of SMM is influenced by an enterprise's technological readiness, organisational resources, and the dynamics of its external environment, all of which shape managerial decision-making (Hasanah et al., 2025). In the tourism sector, particularly in destinations such as Labuan Bajo, social media adoption by MSMEs plays a pivotal role in promoting local products and tourism attractions to broader audiences. MSMEs that effectively leverage social media can expand their customer networks, add value to their offerings, and enhance competitiveness (Liu and Chong, 2023). The adoption of SMM goes beyond mere technological implementation; it also encompasses communication strategies and the organization's capacity to adapt to evolving digital consumer preferences (Restianto, 2022). Understanding the adoption process is therefore essential for formulating policies aimed at fostering digital MSME development in the tourism industry. Previous studies have demonstrated a significant link between social media adoption and improved business performance. For instance, Kim et al. (2017) found that MSMEs adopting social media reported substantial gains in brand visibility and customer loyalty, both of which contributed to revenue growth. Similarly, Bhandari & Bansal (2019) emphasised that the strategic use of social media platforms enhances customer satisfaction and enables market expansion. In the tourism context, Hussain et al. (2024) revealed that customer interactions through social media can shape positive perceptions of destinations, ultimately improving the business performance of local tourism enterprises.

H7: Adoption social media marketing has an impact on business performance.

The performance of MSMEs

Business Performance encompasses multiple dimensions, including sales growth, profit increases, operational efficiency, market expansion, and the ability to survive and compete in dynamic market environments (Alqahtani & Uslay, 2020). In the context of an increasingly digital and globally competitive economy, MSMEs are expected not only to sustain their operations but also to continuously innovate in business processes, marketing strategies, and technology utilisation (Badari, 2024). Strong performance reflects managerial effectiveness in leveraging available resources to achieve business objectives. In tourism-driven regions such as Labuan Bajo, business performance plays a critical role, as these enterprises are key contributors to the tourism value chain (Badari, 2024). High-performing MSMEs not only support local economic growth but also enhance the overall visitor experience through improved products and services (Mantovani et al., 2024). Factors such as technological adaptability, organisational efficiency, and responsiveness to external environmental changes significantly influence business performance in this sector. As such, strengthening business performance should be a strategic priority in sustainable tourism development planning.

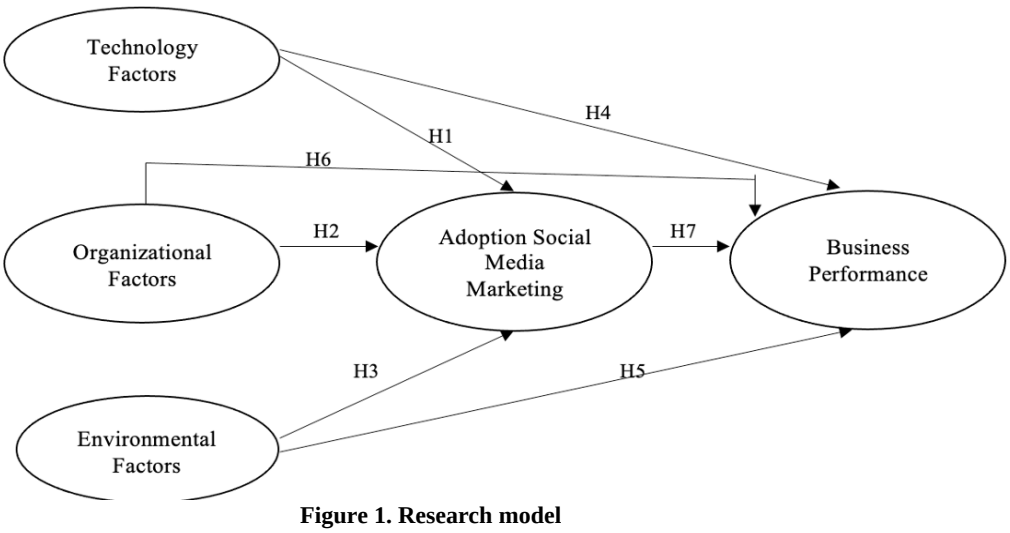

Figure 1. Research model

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Method

This study adopts a quantitative approach with a causal research design, selected to examine the effects among multiple variables including technological, organisational, and environmental factors, SMM adoption, and business performance. A causal research approach is appropriate for identifying cause-and-effect relationships and testing hypotheses derived from theoretical frameworks such as the DOI and the TOE models. The sampling technique employed in this study is purposive sampling, as not all MSMEs in Labuan Bajo meets the criteria relevant to the research, particularly those actively utilising social media in their marketing strategies. Out of a total of 254 identified MSMEs operating within the Labuan Bajo tourism destination area, 150 respondents were selected as the sample. This number was determined based on the guidelines of Hair et al. 2014, which recommends a minimum sample size of five times the number of indicators for studies using structural equation modelling (SEM). Data collection was conducted through direct distribution of questionnaires over a three-month period from October to December 2024. The research instrument consisted of closed-ended statements measured using a five-point Likert scale, where 1 indicated "strongly disagree" and 5 indicated "strongly agree." This scale was chosen to consistently capture respondents' perceptions across all measured variables. The technological factor variable was measured using five indicators adapted from Drazin (1991): technology readiness, technology compatibility, technology complexity, relative advantage, and technology security. Similarly, the organisational factor variable included five indicators from the same source: organisational size, managerial structure, resource availability, top management commitment, and quality and availability of human resources. The environmental factor variable comprised five indicators adapted from Drazin (1991): competitive pressure, government support, pressure from business partners, market conditions, and social environment. Meanwhile, the SMM adoption variable was measured using five indicators based on Gao et al. (2023): perceived relative advantage, perceived cost, top management support, perceived competitor pressure, and perceived vendor pressure. Lastly, business performance was assessed using eight indicators adapted from Dwivedi et al. (2021), including revenue, sales growth, net profit, market share, customer satisfaction, customer retention, operational efficiency, and product innovation. With clearly defined indicators grounded in robust literature, this study aims to offer meaningful contributions to the formulation of digital strategies for MSME development in the tourism sector, particularly in Labuan Bajo.

Results and discussion

Path diagram

The researchers in this study used structural equation modelling to examine the intricate connections between the study's variables. Models incorporating both latent and observable variables can be tested using structural equation modelling. Creating a path diagram, which serves to visually represent the relationship between variables, is the first stage in performing structural equation modelling analysis with the AMOS analysis tool (Hair et al., 2014). A path diagram illustrates the relationship between variables that may be measured, providing a visual depiction of a theoretical model. Circles and ovals stand for latent variables in a path diagram, whereas rectangles indicate indicators. The direction and relationship between these variables are shown by lines or arrows. A cause-and-effect link is shown by a single arrow, and a correlation or two-way arrow by a pair of arrows (Hair et al., 2014).

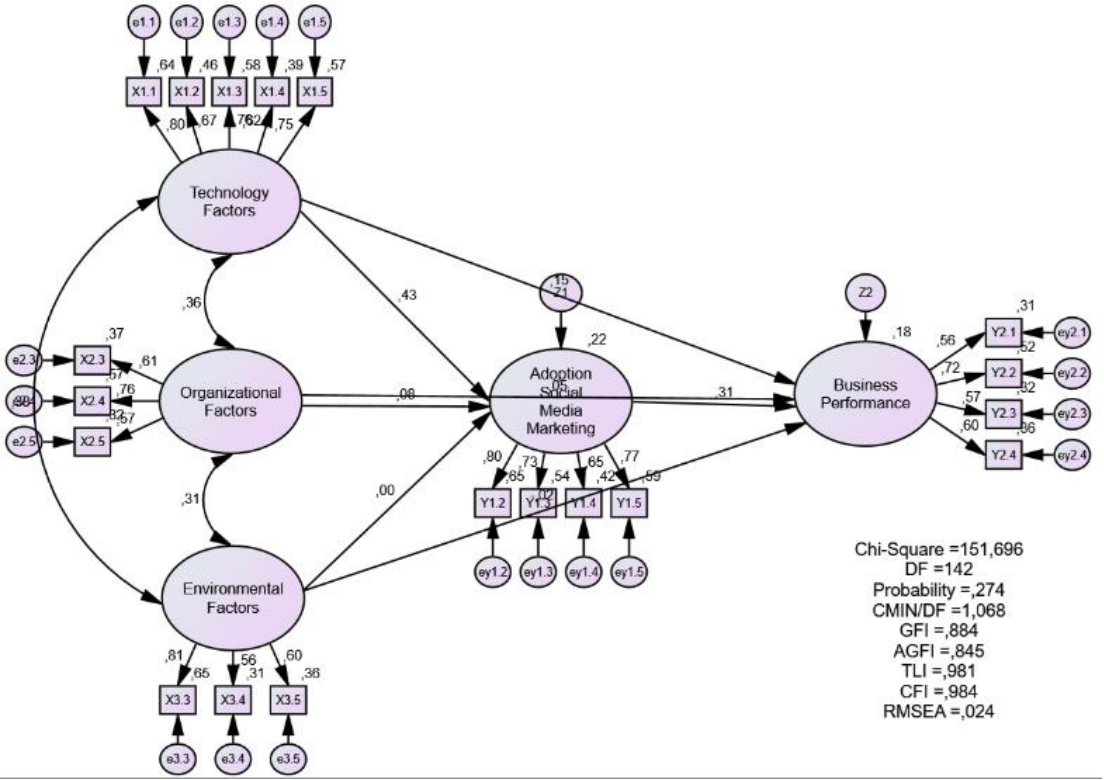

Figure 2. Path diagram model specification

Structural equation modelling (SEM)

Model goodness-of-fit test

While there are a few signs of a marginal category, the model evaluation findings using the Goodness of Fit Index (GFI) show that the applied model fits the expected data well. At a significance level of 0.01, there is a difference between the table value (105.757 for df = 142) and the Chi-Square (X^2) value of 151.696. Nevertheless, a high Chi-Square value is typically anticipated in structural equation modelling analyses, particularly when working with large sample sizes; this finding suggests that this model remains marginal. The model fits the data well, though, and the probability value of 0.274 is higher than 0.05, therefore it can be considered acceptable. Plus, being under the target upper limit of 2.00, the CMIN/DF ratio of 1.068 shows a satisfactory fit. Overall, this demonstrates how well the model captures the interdependencies between the variables.

Table 1. Goodness of fit

Goodness of fit Index	*Cut-off Value*	Model Results	Information
χ2- Chi-Square	*Smaller*	151,696	**X^2 Table df (0.01,142) = 105.757 is smaller than 151.696 (marginal category)** **Marginal**
Probability	*≥ 0,05*	0,274	Great
CMIN/DF	*≤2,00*	1,068	Great
GFI	*≥0,90*	0,884	Marginal
AGFI	*≥0,90*	0,845	Marginal
TLI	*≥0,95*	0,981	Great
CFI	*≥0,95*	0,984	Great
RMSEA	*≤0,08*	0,024	Great

Nevertheless, two indices—GFI (0.884) and AGFI (0.845)—show only moderate results, falling short of the target cut-off value of 0.90. This suggests that while the model is still solid, it could use some tweaks to make it more fitting. In contrast, both the TLI (0.981) and the CFI (0.984) indices are above the target cut-off value of 0.95, indicating excellent performance. This means the model accurately represents the relationship between variables and fits the data well. Last but not least, the RMSEA value of 0.024 is lower than the upper limit of 0.08, further confirming that the model fits the data well and has minimal or no significant model error. In general, this model still demonstrates a satisfactory fit according to other indicators like likelihood, CMIN/DF, TLI, CFI, and RMSEA, even though a few of them, like Chi-Square, GFI, and AGFI, reveal marginal categories. This demonstrates that the model is generally excellent and deserving of acceptance, despite the fact that it has some room for development (Hair et al., 2014).

Reliability test

All of the study's constructs demonstrate an exceptionally high degree of reliability, according to the reliability test findings shown in Table 2. The high level of internal consistency of the instrument is indicated by the fact that all constructs have Cronbach's Alpha (α) values greater than 0.7. With a Cronbach's Alpha of 0.969, the items in the technology factor construct are very dependable. This extremely high number shows that the technology factor measurement tool is quite reliable (Hair et al., 2014).

Table 2. Reliability test

Construct	α
Technology Factors	0,969
Organizational Factors	0,899
Environmental Factors	0,910
Social Media Marketing Adoption	0,966
Business Performance	0,907

Although it is marginally lower than the technology factor, the Organisation Factor build likewise demonstrates great dependability with a Cronbach's Alpha score of 0.899. Even so, it's clear that this construct may be trusted to measure organisational variables because the result is still significantly higher than the intended threshold. With a Cronbach's Alpha of 0.910, the Environmental Factor construct demonstrated excellent construct stability. According to this value, environmental influences are measured in this study with a high degree of reliability. Moreover, with a Cronbach's Alpha of 0.966, Social Media Marketing Adoption has extremely robust internal consistency. The tool used to measure the use of social media as a marketing approach has very good dependability, as indicated by this number. Lastly, with a Cronbach's Alpha of 0.907, Business Performance demonstrated a good level of reliability. This shows that there is a high degree of consistency in the study's measurement of company performance. The reliability and validity of the instrument used to measure each construct in this study are supported by the Cronbach's Alpha values that were obtained for each construct.

Convergent validity test

Having convergent validity is crucial for indicators of a latent concept. This means that the indicators should correlate strongly with each other and measure the same construct; alternatively, they should share a significant proportion of variance. Examining the value of the loading factor is one way to evaluate construct validity (Hair et al., 2014). When the loading factor is large, it means that the indicators are pointing in the same direction, or convergent, to the construct at issue. All indicators must have loading factor values more than 0.5, with 0.7 being the optimal, in order to guarantee strong convergent validity. To rephrase, an indicator's ability to measure a construct improves as the loading factor number rises. In this investigation, all loading factors demonstrated statistical significance and fulfilled the convergent criteria, with loading factor values greater than 0.5, according

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to the results of the standardised loading estimate output. This demonstrates that the indicators utilised to assess each construct are reliable and have strong convergent validity for this study.

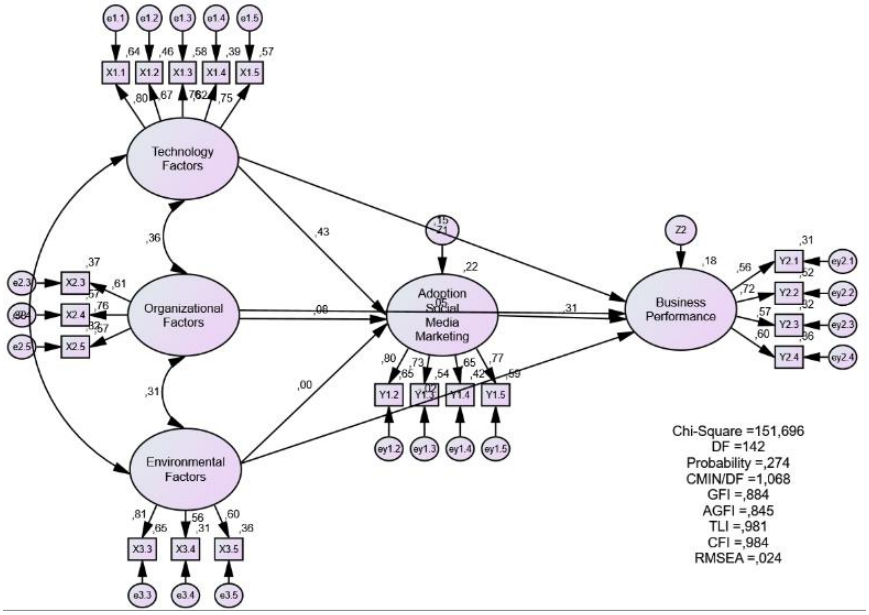

Figure 3. Loading factor variable

Variance extract

A measure of the variance from indicators extracted by the latent construct generated is known as Variance Extract (Hair et al., 2014). The permissible variance extract limit value in structural equation modelling is alpha 0.50 (Hair et al., 2014).

Table 3. Variance extract test

Construct	α
Technology Factors	0,944
Organizational Factors	0,793
Environmental Factors	0,816
Social Media Marketing Adoption	0,941
Business Performance	0,789

Based on the results of the Variance Extract Test presented in Table 3, each construct in this study shows a significant contribution to the variability or influence that can be explained by the measured variables. The Variance Extract value reflects the extent to which the variables in the construct can explain the variability in the measured construct (Hair et al., 2014). The Technology Factor obtained a Variance Extract value of 0.944, indicating that most of the variability in this construct can be explained by the underlying variables. This indicates that the variables used to measure the technology factor are very relevant and make a large contribution to the construct. The Organisation Factor recorded a Variance Extract value of 0.793, which, although lower than the Technology factor, is still in the acceptable category. This indicates that the variables in this factor are quite good at explaining the intended construct, although there is room for improvement. The Environmental Factor has a value of 0.816, indicating a fairly strong contribution from the variables that support this construct. This indicates that environmental factors have a significant influence on the measured performance. Social Media Marketing Adoption obtained a Variance Extract value of 0.941, which means that almost all of the variability in this construct can be explained by the variables measured. This indicates a very strong validity for this construct. Finally, Business Performance has a Variance Extract value of 0.789, which still shows quite good explanatory power in explaining the variability of this construct. Although slightly lower than other constructs, this value still reflects a significant contribution to the variability measured. Overall, the Variance Extract values obtained in this study indicate that the constructs measured have adequate explanatory power and strong validity. Thus, the instrument used in this study can be relied on to measure the relationship between the existing variables.

Discriminant validity test

Discriminant validity measures that a construct is different from other constructs. The way to test it is by comparing the AVE root value with the correlation square between constructs (Hair et al., 2014). The following is the square root of the Latent Construct

Technology Factors	$= \sqrt{0{,}944}$	= 0,971
Organizational Factors	$= \sqrt{0{,}793}$	= 0,890
Environmental Factors	$= \sqrt{0{,}816}$	= 0,903
Adoption of Social Media Marketing	$= \sqrt{0{,}941}$	= 0,970
Business Performance	$= \sqrt{0{,}789}$	= 0,888

Table 4. Discriminant validity test

	Technology Factors	Organizational Factors	Environmental Factors	Social Media Marketing Adoption	Business Performance
Technology Factors	**0,971**				
Organizational Factors	0,133	**0,890**			
Environmental Factors	0,140	0,096	**0,903**		
Social Media Marketing Adoption	0,214	0,059	0,036	**0,970**	
Business Performance	0,097	0,018	0,014	0,152	**0,888**

Based on the table above, it can be explained that all latent variables have a higher AVE root value than the correlation square between constructs. This indicates good discriminant validity (Hair et al., 2014).

Hypothesis testing

We tolerate a 5% error rate if we mistakenly reject the null hypothesis (H_0) because we employ a 95% significance level (or alpha = 0.05) in hypothesis testing (Hair et al., 2014). Looking at the p-value allows us to decide if the hypothesis is accepted or rejected. The test result is considered statistically significant if the p-value is less than 0.05 ($p < 0.05$), which means that the null hypothesis is rejected and the alternative hypothesis is accepted. In contrast, the alternative hypothesis is not rejected if the p-value is equal to or higher than 0.05 ($p \geq 0.05$), indicating that there is insufficient evidence to back it up. To determine if a link is statistically significant, researchers utilise the Critical Ratio (CR) value in structural or regression analysis. We accept the related hypothesis and declare the association significant if the p-value of CR is less than 0.05. As a result, we can draw conclusions about the results of the hypothesis testing by looking at the p-value; a p-value of less than 0.05 signifies a significant result, whereas a p-value of 0.05 or above suggests an inconsequential result.

Table 5. CR (critical ratio) values and p value

	Variable	CR	P value	Kesimpulan
1	Technology factors on adoption social media marketing adoption	3,242	0,001	Significant
2	Organizational factors on adoption social media marketing adoption	2,091	0,036	Significant
3	Environmental factors on adoption social media marketing adoption	2,709	0,007	Significant
4	Technology factors on business performance	2,883	0,004	Significant
5	Organizational factors on business performance	0,645	0,519	Insignificant
6	Environmental factors on business performance	1,004	0,316	Insignificant
7	Adoption social media marketing adoption on business performance	2,604	0,009	Significant

Discussion

The statistical analysis revealed that technological factors significantly influence the adoption of social media marketing among MSMEs in Labuan Bajo, with a CR value of 3.242 and a p-value of 0.001. Since the p-value is less than 0.05, this relationship is considered statistically significant, supporting the acceptance of Hypothesis 1 (H1). This suggests that greater technological readiness, compatibility, perceived relative advantage, and security are associated with a higher likelihood of MSMEs adopting social media for marketing purposes. This finding is supported by previous studies such as Ahmad et al. (2020), which indicated that perceived ease of use and perceived benefits play a direct role in technology adoption among MSMEs. Similarly, research by Alalwan 2018 confirmed that technological compatibility and ease of integration into business operations accelerate digital adoption. From a phenomenological perspective, many MSMEs in Labuan Bajo are increasingly aware of the importance of social media in reaching wider markets and promoting products more efficiently. According to Everett 1963 Diffusion of Innovation (DOI) theory, innovation characteristics such as relative advantage, compatibility, low complexity, and trialability are key determinants in the adoption process. The technological factors observed among MSMEs in this study align with these characteristics, reinforcing the theoretical foundation and empirical evidence of DOI. The phenomenon observed in Labuan Bajo indicates that many MSMEs have begun to recognise the importance of technology in developing their businesses, particularly through social media. Improved access to digital devices and internet connectivity has accelerated technology adoption. Nevertheless, some MSME actors still face challenges related to digital literacy and technical understanding. Support in the form of training and technological assistance from government and private institutions has proven essential in driving this transformation. This suggests that technological readiness significantly influences the speed and effectiveness of social media adoption as a marketing tool.

The results show a significant influence of organisational factors on the adoption of social media marketing, with a CR value of 2.091 and a p-value of 0.036. As the p-value is below 0.05, Hypothesis 2 is accepted. This implies that internal organisational elements—such as managerial structure, resource availability, and leadership commitment—enhance the likelihood of digital marketing adoption. This result aligns with findings by Nguyen et al. 2022, who emphasised that organisational size and human resource quality significantly contribute to technology adoption decisions. Salah and Ayyash 2024 underscored the importance of top management support, and Algharabat 2017 highlighted how organisational culture and structure influence technology implementation. Within the DOI framework, innovation adoption is shaped not only by technological characteristics but also by organisational readiness and support systems. For MSMEs in Labuan Bajo, the presence of enabling internal structures fosters faster and more effective innovation adoption, reinforcing the innovation diffusion process in marketing. Field observations reveal that the organisational structure of MSMEs in Labuan Bajo tends to be simple and is often managed directly by the owner. This facilitates faster decision-making regarding the adoption of social media. However, limitations in human resources and managerial skills pose obstacles to the implementation of effective digital marketing strategies. MSMEs with more formal organisational structures tend to demonstrate greater strategic use of social media. This implies that organisational factors are critical in determining the extent to which social media can be optimally adopted.

The analysis yielded a CR value of 2.709 and a p-value of 0.007, indicating a statistically significant influence of environmental factors on the adoption of social media marketing. Therefore, Hypothesis 3 is supported. This means that external pressures—such as competition, government support, and surrounding social conditions—act as catalysts for MSMEs to adopt social media in their marketing strategies. This finding is consistent with Nguyen et al. 2022, who reported that external pressures from competitors and partners drive IT adoption. Alalwan 2018 also identified external environments such as government regulation and market trends as key drivers for technology adoption, while Hu and Zhu 2022 emphasized the role of market dynamics and external forces in motivating technology adoption. In DOI terms, social and environmental pressures serve as vital channels for innovation diffusion. As external demands increase—whether from competitors or consumer expectations—so too does the likelihood of innovation adoption by MSMEs, reinforcing the role of external dynamics in shaping strategic responses. Amid increasing business competition in the tourism destination of Labuan Bajo, pressure from competitors and consumer expectations has driven MSMEs to become more active on social media. A dynamic business environment and support from local government through digital promotion efforts further strengthen the MSMEs' digital ecosystem. Partnerships with travel agents and online platforms have also created positive pressure for MSMEs to become more adaptive. Moreover, consumer trends favouring social media as a tool for finding products and services act as significant external drivers. Thus, environmental factors play an important role in stimulating the adoption of digital marketing practices.

Statistical testing shows that technological factors significantly affect MSME performance, with a CR value of 2.883 and a p-value of 0.004. This confirms a statistically significant relationship and supports Hypothesis 4. It indicates that appropriate technological adoption positively impacts business outcomes in tourism-based MSMEs in Labuan Bajo. These findings are supported by Nguyen et al. 2022, who found that technological readiness and innovation positively affect firm performance. Similarly, Alalwan 2018 confirmed that suitable technologies enhance operational efficiency, productivity, and profitability. As outlined in DOI theory, technological attributes—such as ease of use, relevance to business needs, and relative advantage—enhance business performance when innovations are effectively adopted. Advancements in information and communication technology present substantial opportunities for MSMEs in Labuan Bajo to enhance efficiency and expand market reach. MSMEs that actively use social media have been shown to gain access to broader markets, including international ones. Increased online transactions and service speed serve as indicators of technological success in supporting business performance. However, many entrepreneurs still struggle to fully leverage technology due to infrastructure constraints or a lack of expertise. This highlights that while technology can improve business performance, its impact is contingent on the level of optimal utilisation. The results indicate that organisational factors do not significantly affect MSME performance, with a CR value of 0.645 and a p-value of 0.519, which exceeds the 0.05 threshold. Thus, Hypothesis 5 is rejected. Organisational characteristics such as size, structure, and resource availability do not appear to significantly explain performance variations among MSMEs in this context. This contrasts with some studies, such as Nguyen et al. (2022), which found that strong organisational support improves performance. However, other research, such as Denia et al. (2025) suggests that for developing MSMEs, organisational factors may not yet be primary drivers of performance, and in some cases, complexity within the organisation may even hinder optimal outcomes. According to the DOI, the lack of significant internal readiness may weaken the impact of innovation on performance, even when adoption occurs. Empirical findings suggest that most MSMEs in Labuan Bajo lack an organisational structure that supports long-term strategic development. Leadership roles and managerial commitment are often confined to daily operations, without a clear strategic direction. Consequently, despite technology adoption, the impact on business performance remains limited. MSMEs that have managerial teams with business experience and an innovation-oriented mindset exhibit better performance outcomes. This underscores the importance of organisational factors, which, although critical, have not yet been fully leveraged by most MSMEs in the area.

The statistical test returned a CR value of 1.004 with a p-value of 0.316, indicating that environmental factors do not significantly impact MSME performance. Therefore, Hypothesis 6 is also rejected. This contradicts findings such as those by Nguyen et al. 2022, which suggested that external forces significantly influence business performance. However, it is in line with Marolt et al. 2022, who argue that in developing country contexts, environmental factors tend to influence adoption more than performance, and that impact may require sustained policy support. In DOI terms, while external environments may accelerate innovation diffusion, their influence on performance depends heavily on internal capabilities and perceptions of innovation benefits. While a competitive business environment is expected to drive performance improvement among MSMEs, not all businesses in Labuan Bajo have been able to respond to market pressures effectively. Government support such as digital training and tax incentives, has not been evenly distributed. On the other hand, increasing expectations from tourists demand higher quality and innovation from MSME actors. Some MSMEs that are able to read market conditions and adapt quickly tend to outperform their peers. However, in general, environmental factors have yet to consistently enhance business performance across the region.

The statistical findings support a significant effect of SMM adoption on MSME performance, with a CR value of 2.604 and a p-value of 0.009. Hypothesis 7 is thus accepted. Higher levels of social media adoption are associated with improved business outcomes among MSMEs. This is consistent with Lv et al. (2024), all of whom highlighted that social media helps small businesses enhance customer engagement, market expansion, revenue growth, and satisfaction. The result aligns well with DOI theory, as social media being relatively advantageous, easy to use, and compatible with business needs is more readily adopted and contributes positively to overall performance. The adoption of social media has delivered tangible benefits for MSMEs in Labuan Bajo, particularly in terms of promotion, customer engagement, and market expansion. Many entrepreneurs have reported increased sales after leveraging platforms like Instagram and TikTok to market their products. Additionally, social media has enabled MSMEs to build a strong brand image at relatively low cost. Positive customer responses and

increased online exposure provide significant added value. This phenomenon illustrates that social media adoption contributes directly to enhancing the business performance of MSMEs in the tourism sector.

Conclusion and implications

This study aimed to examine the factors influencing the adoption of social media marketing and its impact on the performance of MSMEs in the tourism destination of Labuan Bajo, DOI theory and the TOE framework. The analysis revealed that technological, organisational, and environmental factors significantly affect the adoption of social media marketing. However, only technological factors were found to have a significant influence on business performance, while organisational and environmental factors showed no meaningful relationship. The adoption of social media itself was proven to significantly enhance MSME performance, highlighting the importance of digital strategies in market expansion and business efficiency. These findings underscore that in tourism contexts like Labuan Bajo, digital transformation is a strategic necessity for the sustainability and competitiveness of MSMEs. Theoretically, the findings reinforce the relevance of the DOI theory in explaining the technological innovation adoption process among MSMEs, particularly regarding perceptions of relative advantage and technological compatibility. The TOE framework also proved to be an effective analytical model for understanding both external and internal factors in technology adoption. From a managerial perspective, the results provide strategic direction for MSME actors and stakeholders in the tourism sector to focus on strengthening technological readiness, providing digital training, and developing social media–based marketing strategies. Enhancing managerial capabilities and creating a supportive business environment for digital adoption are crucial steps in improving the competitiveness of MSMEs. Government bodies and related institutions are also encouraged to play a more active role in offering regulatory support and equitable access to digital infrastructure.

This study has several limitations that must be acknowledged. First, data were collected exclusively from MSMEs located in Labuan Bajo, which limits the generalisability of the findings to other regions in Indonesia. Second, the quantitative approach used in this study could not explore in depth the qualitative aspects, such as the personal motivations of business owners in adopting technology. Third, the data collection period was restricted to three months (October–December 2024), which may have limited the ability to capture broader external dynamics. Additionally, external variables such as national regulations, global tourism trends, and technological advancements were not examined in an integrated manner. Therefore, the results of this study should be complemented by a multidimensional approach in future research. Future studies are encouraged to broaden the geographical scope and increase the sample size to ensure more nationally representative results. A mixed-methods approach, combining quantitative and qualitative techniques, is also recommended to gain a more holistic understanding of social media adoption dynamics among MSMEs. Subsequent research could further explore the mediating or moderating roles of variables such as digital literacy, market orientation, or organisational culture in strengthening inter-variable relationships. Given the rapid development of digital technology, longitudinal studies would be beneficial to track changes in adoption behaviour and its long-term impact on business performance. Moreover, future research should also investigate how specific social media platforms (e.g., Instagram, TikTok, WhatsApp Business) differentially influence various business sectors within the MSME ecosystem.

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