

# Hierarchical Framework for Determining E-Commerce Platforms for SMEs: AHP Approach Based on Marketing and Operational Perspectives

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**ABSTRACT.** The rapid growth of digital commerce has created new opportunities for small and medium-sized enterprises (SMEs) to expand market reach and improve business efficiency through e-commerce platforms. However, the increasing number of available platforms makes the selection process more complex, as each platform offers different marketing and operational features. This study aims to develop a hierarchical decision-making framework to determine the most suitable e-commerce platform for SMEs by integrating marketing and operational perspectives. The research applies the Analytic Hierarchy Process (AHP) to evaluate multiple criteria and rank alternative platforms. The evaluation framework consists of two main perspectives—marketing and operational—with twelve sub-criteria derived from the literature on digital platforms and SME digitalization. Data were collected through expert judgments using pairwise comparison questionnaires and analyzed using the AHP method to determine criteria weights and platform priorities. The results show that the marketing perspective has a higher priority weight than the operational perspective, indicating that SMEs prioritize market reach, promotional tools, and customer engagement when selecting platforms. The final ranking reveals that Shopee is the most suitable platform for SMEs, followed by Tokopedia, TikTok Shop, and Lazada. This study provides a structured decision-support framework that can help SMEs evaluate and select e-commerce platforms more systematically.

Keyword: Analytic Hierarchy Process; Digital Platforms; E-Commerce Platform Selection; Marketing Capability; Operational Efficiency.

JEL Classification: M15; L81; D81; O33.

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## INTRODUCTION

The rapid development of digital technologies has significantly transformed business activities, particularly in commerce and marketing. One of the most influential developments is the expansion of electronic commerce (e-commerce), which enables businesses to conduct transactions, promote products, and interact with customers through digital platforms. E-commerce platforms allow firms to reach broader markets and create new opportunities for business growth in increasingly digitalized environments. As digital ecosystems continue to evolve, digital platforms have become a central infrastructure supporting business activities and economic value creation (Liébana-Cabanillas et al., 2021; Sussan & Acs, 2017).

Small and medium-sized enterprises (SMEs) play a critical role in economic development by contributing to employment creation, innovation, and regional growth. However, SMEs often face various structural constraints such as limited financial resources, restricted access to markets, and lower technological capabilities compared to large enterprises. In this context, the adoption of e-commerce platforms provides SMEs with opportunities to overcome these limitations by enabling wider market access, integrated digital payment systems, and logistics support that facilitate online transactions (Abebe, 2020; Kraus et al., 2019). As a result, digital platforms have increasingly become an essential tool for SMEs seeking to remain competitive in the digital economy.

Despite the opportunities offered by e-commerce, the rapid proliferation of digital platforms has also created new challenges for SMEs. Various platforms offer different service ecosystems, including marketing tools, payment systems, logistics integration, and customer engagement features. These differences make the selection of an appropriate platform a strategic decision that can influence SMEs' business performance, market visibility, and operational efficiency. Therefore, SMEs need to carefully evaluate alternative platforms in order to determine which one best aligns with their business objectives and operational capabilities (Cenamor et al., 2019; Verhoef et al., 2021).

In practice, however, many SMEs still select e-commerce platforms based on informal considerations such as platform popularity, peer recommendations, or perceived ease of use. Such decision-making approaches may overlook important strategic and operational factors that influence platform effectiveness. Without systematic evaluation, SMEs risk choosing platforms that do not fully support their long-term business strategies or operational requirements (Abebe, 2020; Kraus et al., 2019).

The complexity of e-commerce platform selection arises from the multidimensional characteristics of digital platforms. From a marketing perspective, SMEs must consider factors such as market reach, promotional tools, brand visibility, and customer engagement. At the same time, operational factors such as transaction costs, payment systems, logistics integration, and ease of platform use are equally important for ensuring efficient business operations. Balancing these marketing and operational considerations requires structured evaluation methods capable of handling multiple decision criteria simultaneously (Cenamor et al., 2019; Verhoef et al., 2021).

Previous studies on SME digitalization have primarily focused on the determinants of technology adoption, including technological readiness, organizational capabilities, and environmental influences. While these studies provide valuable insights into why SMEs adopt digital technologies, limited attention has been given to how SMEs should systematically evaluate and select among different e-commerce platforms once the adoption decision has been made (Liébana-Cabanillas et

al., 2021; Sussan & Acs, 2017). This gap highlights the need for a structured decision-making framework that can assist SMEs in comparing platform alternatives based on relevant criteria. To address this issue, multi-criteria decision-making methods provide useful analytical tools for evaluating complex decisions involving multiple criteria and alternatives. The Analytic Hierarchy Process (AHP) is widely recognized as an effective approach for structuring decision problems hierarchically and determining the relative importance of criteria through pairwise comparisons. By applying AHP to the context of e-commerce platform selection, this study aims to develop a hierarchical framework that integrates marketing and operational perspectives in determining the most suitable platform for SMEs (Darko et al., 2019; Saaty & Vargas, 2018).

## LITERATURE REVIEW

The rapid diffusion of digital technologies has accelerated the adoption of e-commerce among small and medium-sized enterprises (SMEs). E-commerce enables SMEs to access wider markets, improve customer interaction, and streamline transaction processes through digital platforms. Compared with traditional channels, e-commerce provides SMEs with opportunities to overcome geographical constraints and enhance business scalability (Kraus et al., 2019; Liébana-Cabanillas et al., 2021). Consequently, digital platforms have become a critical component of SME digital transformation strategies.

However, SMEs often face significant challenges when adopting digital technologies, including limited financial resources, technological capabilities, and managerial expertise. These constraints may influence the ability of SMEs to effectively utilize digital platforms and maximize their benefits (Abebe, 2020; Verhoef et al., 2021). Therefore, selecting the most appropriate e-commerce platform becomes a crucial strategic decision that can determine the success of SMEs in digital markets.

Several studies have examined the determinants of e-commerce adoption among SMEs. These determinants generally include technological readiness, organizational capability, and environmental pressures. While these factors explain why SMEs adopt e-commerce, relatively limited research has focused on how SMEs should evaluate and choose among different e-commerce platforms once the adoption decision has been made (Cenamor et al., 2019; Liébana-Cabanillas et al., 2021).

E-commerce platforms function as digital infrastructures that facilitate interactions between sellers and buyers through integrated technological systems. These platforms typically provide various services such as digital marketing tools, payment processing, logistics integration, and customer service support. Such features enable SMEs to conduct business activities efficiently while reaching broader customer segments (Cenamor et al., 2019; Verhoef et al., 2021).

The characteristics of e-commerce platforms may vary significantly across providers. Some platforms focus on marketing visibility and promotional campaigns, while others emphasize operational efficiency through logistics integration and transaction management systems. These differences highlight the importance of evaluating multiple criteria when selecting an appropriate platform (Hänninen et al., 2018; Rietveld & Schilling, 2021). Given the diversity of platform features, SMEs must assess how well each platform supports their strategic objectives. A comprehensive evaluation requires considering both marketing capabilities and operational functionalities of the platform ecosystem.

From a marketing perspective, e-commerce platforms serve as channels for customer acquisition, brand visibility, and customer engagement. Digital marketplaces provide SMEs with access to large

consumer bases and offer various promotional tools such as advertising features, discount campaigns, and recommendation algorithms. These capabilities can significantly influence a firm's market reach and brand recognition (Verhoef et al., 2021; Hänninen et al., 2018).

Another important aspect of marketing performance is customer trust and engagement. E-commerce platforms often incorporate rating systems, reviews, and reputation mechanisms that affect consumer perceptions of product quality and seller reliability. These mechanisms play a crucial role in influencing consumer purchase decisions and enhancing customer loyalty (Rietveld & Schilling, 2021; Liébana-Cabanillas et al., 2021). Consequently, SMEs must evaluate marketing-related platform characteristics, including user base size, promotional support, and customer engagement features when selecting e-commerce platforms.

In addition to marketing considerations, operational efficiency plays a critical role in determining the suitability of e-commerce platforms. Platforms that provide efficient transaction processing, secure payment systems, and reliable logistics integration can significantly improve SMEs' operational performance (Cenamor et al., 2019; Verhoef et al., 2021).

Transaction costs and platform usability are also important operational factors. SMEs often operate with limited resources; therefore, platforms that offer low transaction fees and user-friendly interfaces are more attractive for small businesses. Ease of use can reduce operational complexity and improve the efficiency of online business management (Abebe, 2020; Kraus et al., 2019). Additionally, logistics integration and payment security are critical components of digital commerce operations. Efficient logistics systems enable timely product delivery, while secure payment systems enhance transaction reliability and customer confidence (Hänninen et al., 2018; Rietveld & Schilling, 2021).

The selection of e-commerce platforms involves multiple criteria and competing alternatives. Such decisions cannot be adequately addressed using single-factor evaluation approaches. Instead, multi-criteria decision-making (MCDM) methods provide systematic tools for evaluating complex problems that involve multiple evaluation dimensions (Darko et al., 2019).

Among the various MCDM techniques, the Analytic Hierarchy Process (AHP) is widely used to support decision-making processes in management, engineering, and information systems research. AHP allows decision makers to decompose complex problems into hierarchical structures consisting of goals, criteria, sub-criteria, and alternatives (Saaty & Vargas, 2018).

Through pairwise comparison matrices, AHP enables decision makers to determine the relative importance of each criterion and generate priority rankings among alternative options. This approach is particularly suitable for evaluating e-commerce platforms because it accommodates both qualitative and quantitative evaluation criteria. Table 1 summarizes selected previous studies related to digital platforms, SME digitalization, and multi-criteria decision-making.

**Table 1.** Synthesis of Previous Studies

Author	Year	Context	Method	Key Findings
Kraus et al.	2019	Digital entrepreneurship	Literature review	Digital platforms enable new business models
Abebe	2020	SMEs digital platforms	Empirical	Institutional factors influence platform adoption

Author	Year	Context	Method	Key Findings
Verhoef et al.	2021	Digital transformation	Conceptual	Platforms drive customer-centric ecosystems
Liébana-Cabanillas et al.	2021	Digital payment adoption	SEM	Trust and perceived usefulness drive adoption
Cenamor et al.	2019	Platform servitization	Case study	Platforms improve service innovation
Hänninen et al.	2018	Retail platform ecosystems	Empirical	Platforms enable omni-channel strategies
Rietveld & Schilling	2021	Platform ecosystems	Review	Platform governance affects participation
Darko et al.	2019	Decision models	MCDM	AHP effective for complex decision problems
Saaty & Vargas	2018	Decision science	AHP theory	Hierarchical decision models improve evaluation
Tiago & Veríssimo	2014	Digital marketing	Empirical	Online marketing increases firm competitiveness

Source: research data based on selected articles

Based on the literature review, the criteria for evaluating e-commerce platforms can be categorized into two main perspectives: marketing and operational. We present these two perspectives in Table 2. The hierarchical model proposed in this study follows the Analytic Hierarchy Process (AHP) structure which we illustrate in Figure 1.

**Table 2.** Perspectives Categorized

Marketing Perspective		Operational Perspective	
Criteria	Description	Criteria	Description
Market reach	Number of active users and potential customers	Transaction cost	Fees charged by the platform
Promotion tools	Availability of advertising and promotion features	Ease of use	User-friendly interface
Brand visibility	Ability to increase brand exposure	Payment system	Availability of secure digital payments
Customer engagement	Interaction with customers through reviews and ratings	Logistics integration	Integration with delivery services
Customer trust	Consumer confidence in platform transactions	Customer service	Platform support for sellers

Marketing Perspective		Operational Perspective	
Criteria	Description	Criteria	Description
Recommendation system	Algorithm-driven product visibility	Order management	Tools for managing sales transactions

Source: research data based on selected articles

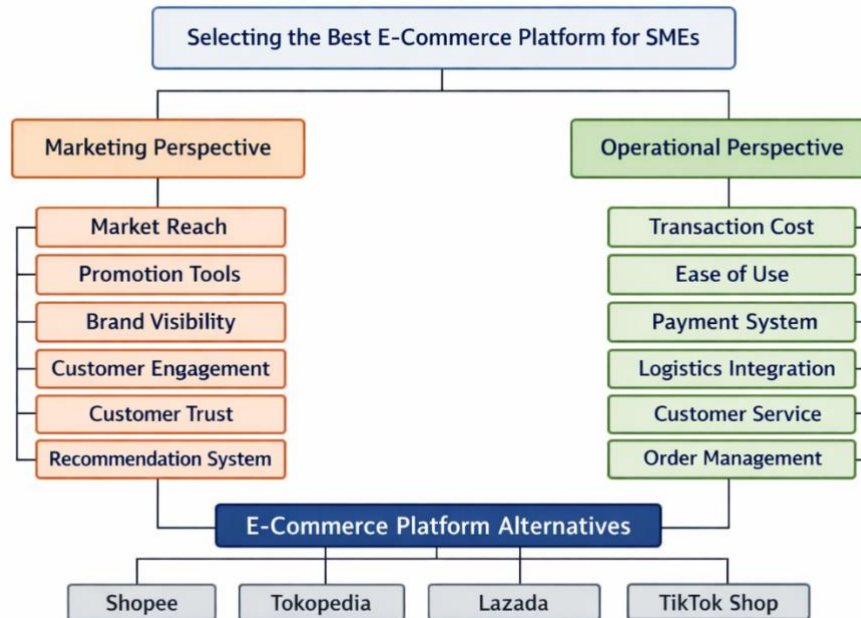


Figure 1. Hierarchical Framework For Determining E-Commerce Platforms For SMEs

## METHODS

### Research Design

This study adopts a quantitative decision-support approach to determine the most suitable e-commerce platform for small and medium-sized enterprises (SMEs). The research employs the Analytic Hierarchy Process (AHP) as the main analytical method because it enables complex decision problems involving multiple criteria and alternatives to be structured hierarchically and evaluated systematically (Saaty & Vargas, 2018; Darko et al., 2019). The research process consists of several stages, including identifying evaluation criteria through literature review, constructing a hierarchical decision model, collecting expert judgments using pairwise comparison questionnaires, and analyzing the data using the AHP method to determine criteria weights and rank alternative e-commerce platforms.

### Identification of Decision Criteria

The evaluation criteria used in this study are derived from prior literature related to digital platforms, SME digitalization, and e-commerce adoption. Based on the literature synthesis presented in Section 2, the criteria are categorized into two main perspectives: marketing perspective and operational perspective. The marketing perspective reflects the ability of an e-commerce platform to support customer acquisition, brand visibility, and customer engagement, including criteria such as market reach, promotion tools, brand visibility, customer engagement, customer trust, and recommendation systems (Verhoef et al., 2021; Hänninen et al., 2018).

Meanwhile, the operational perspective represents the efficiency of business operations conducted through the platform, including transaction cost, ease of use, payment system, logistics integration, customer service, and order management, which are considered essential for ensuring efficient and reliable digital commerce transactions (Cenamor et al., 2019; Abebe, 2020).

### **Development of the Hierarchical Decision Model**

Following the principles of the Analytic Hierarchy Process, a hierarchical decision model is developed to structure the decision problem into several levels. The first level represents the decision goal, which is to determine the most appropriate e-commerce platform for SMEs. The second level consists of the main evaluation criteria, namely the marketing perspective and operational perspective. The third level includes twelve sub-criteria derived from the literature, where the marketing perspective includes market reach, promotion tools, brand visibility, customer engagement, customer trust, and recommendation system, while the operational perspective includes transaction cost, ease of use, payment system, logistics integration, customer service, and order management. The final level of the hierarchy consists of the alternative e-commerce platforms evaluated in this study, namely Shopee, Tokopedia, Lazada, and TikTok Shop, which are widely used digital marketplaces in Southeast Asia.

### **Data Collection**

Data for the AHP analysis are collected through expert judgment using pairwise comparison questionnaires designed according to the Saaty comparison scale. The respondents consist of individuals with relevant knowledge and experience in e-commerce and SME digitalization, including SME owners, digital marketing practitioners, and academic experts in digital business. A purposive sampling approach is used to ensure that respondents possess adequate expertise to evaluate the importance of each decision criterion. The questionnaire requires respondents to compare the relative importance of two criteria at a time using the Saaty 1–9 scale, where a value of 1 indicates equal importance and a value of 9 indicates extreme importance of one criterion over another (Saaty & Vargas, 2018).

### **Analytical Procedure**

The analytical procedure follows the standard steps of the Analytic Hierarchy Process to determine the priority weights of criteria and rank the alternative platforms. First, pairwise comparison matrices are constructed based on expert judgments for criteria, sub-criteria, and alternatives. Second, the priority weights of each element are calculated using the normalized eigenvector method, which represents the relative importance of each criterion in the decision hierarchy. Third, the consistency of the comparisons is evaluated using the Consistency Index (CI) and Consistency Ratio (CR) to ensure logical consistency in the judgments provided by respondents. According to Saaty's guideline, a CR value below 0.10 indicates an acceptable level of consistency. Finally, the overall priority scores of the alternative e-commerce platforms are calculated by aggregating the weights across all hierarchical levels to determine the most suitable platform for SMEs (Saaty & Vargas, 2018; Darko et al., 2019).

### **Research Procedure**

The overall research procedure consists of several sequential steps designed to ensure systematic analysis. The study begins with a literature review to identify relevant criteria for evaluating e-

commerce platforms, followed by the development of a hierarchical decision framework based on the AHP structure. Next, a pairwise comparison questionnaire is designed and distributed to selected experts to collect judgment data. The collected data are then used to construct pairwise comparison matrices and calculate the priority weights of criteria using the AHP method. Consistency tests are performed to ensure the reliability of the comparisons, and finally, the weighted scores of each platform alternative are aggregated to determine the ranking of e-commerce platforms that are most suitable for SMEs.

## RESULT AND DISCUSSION

### Results

#### Operational Definition of Variables

The evaluation criteria used in this study are derived from prior literature related to digital platforms, digital marketing, and SME digitalization. The criteria are categorized into two main perspectives, namely marketing perspective and operational perspective, which reflect the ability of e-commerce platforms to support market expansion and operational efficiency. Digital platforms play a crucial role in enabling SMEs to improve market reach, customer engagement, and transaction efficiency through integrated digital infrastructures (Verhoef et al., 2021; Kraus et al., 2019). Table 3 presents the operational definitions of the variables used in this study.

**Table 3.** Operational Definition of Variables

Perspective	Variable	Operational Definition	Source
Marketing	Market Reach	The ability of the platform to provide access to a large number of potential customers	Verhoef et al. (2021)
Marketing	Promotion Tools	Availability of digital marketing tools such as advertising, campaigns, and discounts	Hänninen et al. (2018)
Marketing	Brand Visibility	The extent to which a platform increases brand exposure to consumers	Verhoef et al. (2021)
Marketing	Customer Engagement	Platform features that facilitate interaction between sellers and customers	Rietveld & Schilling (2021)
Marketing	Customer Trust	Consumer confidence in the reliability and security of platform transactions	Liébana-Cabanillas et al. (2021)
Marketing	Recommendation System	Algorithm-based product recommendations that enhance product discoverability	Rietveld & Schilling (2021)
Operational	Transaction Cost	Fees charged by the platform for transactions and services	Abebe (2020)
Operational	Ease of Use	The simplicity and usability of the platform interface	Hänninen et al. (2018)
Operational	Payment System	Availability and security of digital payment methods	Liébana-Cabanillas et al. (2021)

Perspective	Variable	Operational Definition	Source
Operational	Logistics Integration	Integration of delivery services and order tracking	Cenamor et al. (2019)
Operational	Customer Service	Support services provided by the platform to assist sellers	Abebe (2020)
Operational	Order Management	Tools for managing orders, inventory, and transaction records	Cenamor et al. (2019)

Source: research data

### Pairwise Comparison Matrix (Criteria Level)

The pairwise comparison matrix is used to determine the relative importance of the main evaluation criteria. Based on expert judgment, the marketing perspective is considered slightly more important than the operational perspective, reflecting the importance of market access and customer engagement for SMEs adopting e-commerce platforms.

**Table 4.** Pairwise Comparison Matrix (Criteria Level)

Criteria	Marketing Perspective	Operational Perspective
Marketing Perspective	1.000	3.000
Operational Perspective	0.333	1.000

Source: research data

This matrix indicates that marketing factors are moderately more important than operational factors in determining the suitability of an e-commerce platform for SMEs.

### Criteria Weights and Consistency Ratio

Using the eigenvector normalization method in AHP, the priority weights of the criteria are calculated. The results show that marketing perspective receives a higher weight, indicating that SMEs prioritize market expansion and customer engagement when selecting digital platforms. This finding is consistent with previous research suggesting that digital platforms are primarily adopted to improve market access and customer interaction (Kraus et al., 2019; Verhoef et al., 2021).

**Table 5.** Criteria Weights and Consistency Ratio

Criteria	Weight
Marketing Perspective	0.750
Operational Perspective	0.250

Consistency Index (CI) = 0.000

Consistency Ratio (CR) = 0.000

Since the CR value is below the threshold of 0.10, the pairwise comparison matrix is considered consistent according to the guidelines proposed by Saaty (Saaty & Vargas, 2018).

### Global Priority Ranking of E-Commerce Platforms

The final step of the AHP analysis is the calculation of the global priority scores of the alternative e-commerce platforms. The global priority score is obtained by aggregating the weights of criteria and sub-criteria with the evaluation scores of each platform alternative. The results indicate that Shopee has the highest overall priority score, followed by Tokopedia, TikTok Shop, and Lazada.

**Table 6.** Global Priority Ranking of E-Commerce Platforms

Rank	Platform	Global Priority Score
1	Shopee	0.356
2	Tokopedia	0.284
3	TikTok Shop	0.214
4	Lazada	0.146

Source: research data

The results suggest that Shopee is perceived as the most suitable platform for SMEs because it offers strong marketing features, including extensive promotional tools and a large user base. Tokopedia ranks second due to its strong ecosystem and integration with digital payment systems. TikTok Shop ranks third, reflecting its growing popularity in social commerce, while Lazada ranks fourth due to relatively lower perceived advantages in both marketing and operational features. These findings align with previous studies emphasizing that digital platforms with strong marketing ecosystems and large customer bases are more attractive to SMEs seeking to expand their market presence and improve digital competitiveness (Kraus et al., 2019; Verhoef et al., 2021; Rietveld & Schilling, 2021).

## Discussion

### Importance of Marketing Perspective in Platform Selection

The results of the AHP analysis indicate that the marketing perspective receives a higher priority weight (0.750) compared to the operational perspective. This finding suggests that SMEs place greater emphasis on marketing-related capabilities when selecting e-commerce platforms. In particular, access to large customer bases, promotional tools, and brand visibility are perceived as crucial factors for enhancing business performance in digital markets. Digital platforms enable SMEs to overcome geographical limitations and reach broader consumer segments, which is often the primary motivation for adopting e-commerce technologies (Kraus et al., 2019; Verhoef et al., 2021).

The importance of marketing capabilities is also closely related to the competitive dynamics of online marketplaces. Platforms that offer advanced promotional features, algorithm-based recommendations, and consumer engagement mechanisms provide sellers with greater opportunities to increase product visibility and attract customers. These capabilities are particularly beneficial for SMEs that typically lack the marketing resources available to larger firms. Previous research emphasizes that digital platforms play a key role in enabling SMEs to improve customer interaction and strengthen their market presence through integrated marketing ecosystems (Hänninen et al., 2018; Rietveld & Schilling, 2021).

Moreover, the findings highlight the growing importance of customer trust and engagement in digital commerce environments. Online marketplaces rely heavily on reputation systems such as ratings and reviews to reduce information asymmetry between buyers and sellers. Platforms that facilitate trust-building mechanisms can enhance customer confidence and increase the likelihood of successful transactions (Liébana-Cabanillas et al., 2021). Therefore, marketing-related features that strengthen trust and engagement are critical determinants in SMEs' platform selection decisions.

### **Importance of Operational Perspective in Platform Selection**

Although the marketing perspective receives a higher weight, the operational perspective remains an essential consideration in the evaluation of e-commerce platforms. Operational capabilities such as secure payment systems, efficient logistics integration, and reliable order management tools play a crucial role in ensuring smooth transaction processes and customer satisfaction. These operational features help SMEs manage online business activities more efficiently and reduce potential operational risks associated with digital transactions (Cenamor et al., 2019; Abebe, 2020). The importance of operational efficiency is particularly evident in the context of logistics and payment systems. Effective logistics integration enables faster delivery and better order tracking, which can significantly influence customer satisfaction and repeat purchases. Similarly, secure and flexible payment systems enhance transaction reliability and build trust between buyers and sellers in online marketplaces (Liébana-Cabanillas et al., 2021; Hänninen et al., 2018).

Furthermore, ease of use and platform usability are critical operational considerations for SMEs. Many small businesses have limited technical expertise, making user-friendly interfaces and simplified management tools highly valuable. Platforms that provide intuitive dashboards, automated order management systems, and responsive customer service can significantly reduce operational complexity and improve business efficiency. As a result, operational capabilities remain a fundamental component of platform evaluation despite the stronger emphasis on marketing factors.

### **Evaluation of E-Commerce Platform Alternatives**

The global priority ranking obtained from the AHP analysis indicates that Shopee ranks first, followed by Tokopedia, TikTok Shop, and Lazada. Shopee's leading position can be attributed to its strong marketing ecosystem, extensive promotional campaigns, and large user base, which provide significant advantages for SMEs seeking to expand their market reach. Digital marketplaces with large consumer communities and advanced promotional infrastructures are often more attractive to sellers because they increase product exposure and sales opportunities (Verhoef et al., 2021; Kraus et al., 2019).

Tokopedia ranks second due to its strong ecosystem integration, particularly in terms of digital payment systems and local market support. The platform has developed partnerships with various digital payment services and logistics providers, which enhance transaction efficiency and operational reliability. These capabilities make Tokopedia an attractive platform for SMEs operating in digital marketplaces.

TikTok Shop ranks third, reflecting the growing importance of social commerce in the digital economy. Social commerce platforms integrate entertainment, social interaction, and online shopping into a single ecosystem, allowing sellers to engage directly with consumers through content-based marketing. Previous studies suggest that social commerce platforms can significantly influence consumer behavior by combining social media engagement with online purchasing mechanisms (Liébana-Cabanillas et al., 2021; Verhoef et al., 2021).

Lazada ranks fourth in the evaluation results. Although Lazada provides comprehensive e-commerce infrastructure and logistics capabilities, its marketing ecosystem and user engagement features are perceived as relatively less competitive compared to the other platforms evaluated in this study. This finding suggests that the effectiveness of platform ecosystems plays a critical role in determining their attractiveness to SMEs.

### **Managerial Implications for SMEs**

The findings of this study provide several managerial implications for SMEs seeking to adopt or expand their presence in e-commerce platforms. First, SMEs should evaluate platform alternatives not only based on popularity but also based on their ability to support marketing performance and operational efficiency. Platforms that provide strong promotional tools, recommendation systems, and large customer bases can significantly improve SMEs' market reach and sales potential (Verhoef et al., 2021).

Second, SMEs should also consider operational capabilities such as logistics integration, payment security, and order management systems when selecting e-commerce platforms. These features are essential for ensuring smooth transaction processes and maintaining customer satisfaction. Efficient operational systems can help SMEs reduce operational complexity and focus on business growth.

Finally, SMEs may benefit from adopting multi-platform strategies, where multiple e-commerce platforms are used simultaneously to maximize market exposure. Such strategies allow businesses to diversify their sales channels and reduce dependency on a single platform ecosystem. As digital commerce continues to evolve, SMEs that strategically leverage platform ecosystems are more likely to achieve sustainable growth and competitiveness in digital markets (Kraus et al., 2019; Rietveld & Schilling, 2021).

### **CONCLUSION**

This study aimed to develop a hierarchical decision-making framework for determining the most suitable e-commerce platform for small and medium-sized enterprises (SMEs) by integrating marketing and operational perspectives. Using the Analytic Hierarchy Process (AHP), the study evaluated multiple criteria derived from the literature on digital platforms, digital marketing, and SME digitalization. The findings indicate that the marketing perspective receives a higher priority weight compared to the operational perspective, suggesting that SMEs prioritize factors related to market reach, promotional capabilities, and customer engagement when selecting e-commerce platforms. Digital platforms provide SMEs with opportunities to expand their market presence, enhance customer interaction, and improve competitiveness in increasingly digitalized markets (Kraus et al., 2019; Verhoef et al., 2021).

The results of the global priority analysis reveal that Shopee ranks as the most suitable e-commerce platform for SMEs, followed by Tokopedia, TikTok Shop, and Lazada. Shopee's leading position can be attributed to its strong marketing ecosystem, extensive promotional tools, and large user base, which collectively enhance product visibility and increase sales opportunities for small businesses. Tokopedia ranks second due to its strong integration with payment systems and logistics services that support efficient transaction processes. Meanwhile, TikTok Shop demonstrates increasing relevance in the digital commerce landscape as social commerce platforms integrate content-driven marketing and online purchasing mechanisms. These findings highlight the importance of platform ecosystems that combine strong marketing capabilities with reliable operational infrastructure.

From a managerial perspective, the findings suggest that SME owners and managers should adopt a more systematic approach when selecting e-commerce platforms. Rather than relying solely on platform popularity or informal recommendations, SMEs should evaluate platforms based on their ability to support both marketing performance and operational efficiency. Platforms that offer strong promotional features, recommendation systems, and large consumer communities can

significantly improve market reach, while reliable payment systems, logistics integration, and order management tools can enhance operational efficiency and customer satisfaction (Cenamor et al., 2019). Additionally, SMEs may benefit from adopting multi-platform strategies to diversify their digital sales channels and reach different consumer segments across multiple platform ecosystems. Despite its contributions, this study has several limitations that should be acknowledged. First, the evaluation is based on expert judgment using pairwise comparison questionnaires, which may involve subjective assessments even though consistency tests were conducted to ensure reliability. Second, the analysis focuses on a limited number of e-commerce platform alternatives commonly used in Southeast Asia, which may limit the generalizability of the findings to other regions where different platform ecosystems dominate. Third, although the criteria used in this study were derived from relevant literature, additional factors such as technological innovation, data analytics capabilities, and platform governance mechanisms may also influence SMEs' platform selection decisions.

Future research may extend this study by applying other multi-criteria decision-making methods, such as Fuzzy AHP, Analytic Network Process (ANP), or TOPSIS, to address uncertainty and interdependencies among decision criteria. Further studies may also expand the scope by including SMEs from different industries or geographic contexts to provide comparative insights into digital platform adoption. In addition, future research could incorporate empirical performance indicators such as sales growth, customer acquisition, or platform engagement metrics to complement expert-based evaluations. Such approaches would provide a more comprehensive understanding of how digital platforms influence SMEs' performance and long-term competitiveness in the evolving digital economy (Kraus et al., 2019; Rietveld & Schilling, 2021).

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