

## Strategies for improving ASEAN MSME competitiveness by applying digital marketing, business management quality and crowdfunding by applying product innovation and operational efficiency as intervening variables

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**Abstract:** This study aims to analyze strategies to improve the competitiveness of micro, small, and medium enterprises (MSMEs) in the ASEAN region through the application of digital marketing, business management quality, and crowdfunding. It also emphasizes product innovation and operational efficiency as intervening variables that mediate the direct influence of these strategies on enhancing MSME competitiveness. Using a mixed methods approach, which combines quantitative and qualitative techniques, the study seeks to provide a comprehensive understanding of strategies to improve MSME competitiveness in the ASEAN region. The results indicate that digital marketing, quality business management, and crowdfunding significantly contribute to product innovation and operational efficiency. These two intervening variables, in turn, positively impact MSME competitiveness in regional and global markets. The findings highlight the importance of integrating technology and innovation-based strategies as the foundation for sustainable MSME development in the digital era.

**Keywords:** ASEAN, Competitiveness, MSMEs.

### 1. Introduction

Micro, Small, and Medium Enterprises (MSMEs) are strategic economic sectors that play an important role in national and regional economic development in Southeast Asia. Based on data from the ASEAN Secretariat and ERIA (Economic Research Institute for ASEAN and East Asia), MSMEs account for more than 90% of total business units in ASEAN countries and provide more than 80% of overall employment [1]. In Indonesia, for example, the number of MSMEs reaches 65.5 million units and absorbs up to 97% of the workforce, and contributes 60.5% to Gross Domestic Product [2].

Despite their significant contribution to the economy, MSMEs in the ASEAN region face serious challenges in improving their competitiveness, especially in the midst of digital disruption and global market dynamics. Inequality in the adoption of digital technology, limited access to formal financing, and weak business management quality are the main obstacles in the transformation of MSMEs into a competitive and sustainable sector. Recent data shows that only some countries such as Singapore and Malaysia have a high level of MSME digitization, while other countries such as Myanmar, Laos, and Cambodia still face infrastructure and digital literacy barriers.

Digital marketing is one strategic approach that has been proven to significantly expand the market reach of MSMEs, both domestically and internationally [3]. On the other hand, improving the quality of business management directly correlates to MSMEs' ability to manage risk, production efficiency, and product innovation. In recent years, crowdfunding has also begun to develop as an alternative financing solution, especially for MSMEs that have not been served by conventional financial institutions [4].

However, for the strategy to be effective, intervening variables are needed that can strengthen its influence on improving the competitiveness of MSMEs. In this context, product innovation and operational efficiency are two important elements that cannot be ignored. Innovation drives value-added creation and product differentiation in a competitive market, while operational efficiency contributes to cost reduction and productivity improvement.

Against this background, this study aims to analyze strategies to improve the competitiveness of MSMEs in the ASEAN region through the application of digital marketing, quality of business management, and crowdfunding, by considering product innovation and operational efficiency as intervening variables. This study is expected to provide theoretical and practical contributions in the formulation of policies and strategies for the development of MSMEs that are more adaptive to the challenges of the digital economy and regional competition.

**Table 1.**

Data on MSMEs in ASEAN Countries.

Country	Number of MSMEs (million)	Contribution to GDP (%)	Contribution to Employment (%)	MSME Digitalization Level (Descriptive)	Crowdfunding Access (Descriptive)
Philippines	1.1	35.7	63.2	Medium: Social media utilization is dominant	Limited, still in regulatory stage
Vietnam	0.9	41	77	Medium: Digital transformation is becoming widespread	Thriving in the startup and technology sector
Singapore	0.2	45	70	Very high: Digital access is equitable and AI adoption is rapid	Moving forward, many crowdfunding platforms are active
Myanmar	0.7	38	89	Low: Limited digital infrastructure	Very limited
Laos	0.1	28	82	Low: Focus is still on traditional	Not yet developed
Cambodia	0.5	30	73	Low-medium: Slowly growing	Not commonly used
Brunei Darussalam	0.01	27	58	Medium: Government starts to push digitization	Limited, still early
Indonesia	2.1	30	72	Medium: Social media utilization is dominant	Limited, still in regulatory stage
Malaysia	0.7	31	75	Medium: Digital transformation is becoming widespread	Thriving in the startup and technology sector
Thailand	0.9	35	71	Medium: Digital transformation begins to expand	Thriving in the Startup and technology sector
Timor Leste	0.3	23	60	Low: Limited digital infrastructure	Very limited

The table provides an overview of the state of MSMEs in the ten ASEAN member states, with five main aspects analyzed: number of MSMEs, contribution to Gross Domestic Product (GDP), contribution to employment, level of MSME digitization, and access to crowdfunding platforms.

### 1.1. Number and Role of MSMEs

The country with the largest number of MSMEs is Indonesia with around 65.5 million MSMEs, reflecting the economic structure that relies heavily on this sector. Countries such as Laos, Brunei, and Singapore have a much smaller number of MSMEs, in line with their smaller geographical size and population. Despite the small number of MSMEs in these countries, their contribution to GDP remains significant.

### 1.2. Contribution to GDP and Employment

Most ASEAN countries show MSME contributions to national GDP ranging from 27% to 60%. Indonesia has the highest MSME contribution to GDP (60.5%), while Brunei and Laos are still below 30%. Contribution to employment is also very high, especially in Myanmar (89%) and Indonesia (97%), signaling that MSMEs are a key pillar of job creation in the region.

### 1.3. MSME Digitalization Level

Digitalization is an important indicator in this study. Countries such as Singapore, Malaysia, and Thailand show high levels of MSME digitalization, reflecting adequate technological readiness and digital infrastructure. Meanwhile, countries such as Myanmar, Laos and Cambodia are still relatively low in the utilization of digital technology, especially in the aspects of digital marketing and the use of information systems in business operations.

### 1.4. Access to Crowdfunding

Crowdfunding platform as one of the funding alternatives still faces challenges in most ASEAN countries. Singapore and Malaysia have shown positive developments in the utilization of crowdfunding for the MSME sector, even with the support of established regulations and platforms. Indonesia is also becoming active through the development of fintech P2P lending. However, in countries such as Myanmar, Laos, and Cambodia, crowdfunding is still not significantly developed due to regulatory barriers, lack of digital financial literacy, and the lack of a financial technology ecosystem.

### 1.5. Relevance to Intervening Variables

This data shows that countries with better digitization and business management tend to have greater opportunities for product innovation and operational efficiency. Countries such as Singapore, Malaysia, and Vietnam are examples where technology support and access to finance contribute to improved MSME competitiveness. On the other hand, countries with low digitization and limited access to finance tend to lag behind in innovation and efficiency, which negatively impacts their competitiveness in the regional market.

### 1.6. Problem Identification

Based on the background that has been explained, several main problems faced by MSMEs in the ASEAN region can be identified, including:

1. Low adoption of digital marketing by MSMEs in most ASEAN countries, especially in regions with limited digital infrastructure and literacy.
2. The quality of business management is not optimal, which results in low business efficiency and resilience in the face of competition.
3. Limited access to alternative funding, such as crowdfunding, in some countries due to lack of regulation, financial literacy, and public trust.
4. Lack of product innovation that can compete in domestic and international markets.
5. Low operational efficiency leading to high production costs and low productivity.
6. There is no comprehensive strategy model that integrates digital marketing, management quality, and crowdfunding with innovation and efficiency as intervening factors in improving MSME competitiveness.

### 1.7. Problem Formulation

Based on the problem identification above, the problem formulation in this study can be described as follows:

1. How does digital marketing affect the competitiveness of MSMEs in the ASEAN region?
2. How does the quality of business management affect the competitiveness of MSMEs in the ASEAN region?

3. How does crowdfunding affect the competitiveness of MSMEs in the ASEAN region?
4. Does product innovation mediate the influence of digital marketing, business management quality, and crowdfunding on MSME competitiveness?
5. Does operational efficiency mediate the effects of digital marketing, business management quality, and crowdfunding on MSME competitiveness?

### 1.8. Hypothesis Study

Main Hypothesis:

1. H1: Digital marketing has a positive effect on the competitiveness of MSMEs.
2. H2: The quality of business management has a positive effect on the competitiveness of MSMEs.

3. H3: Crowdfunding has a positive effect on the competitiveness of MSMEs.

Mediation (Intervening) Hypothesis:

4. H4: Product innovation mediates the effect of digital marketing on MSME competitiveness.
5. H5: Product innovation mediates the effect of business management quality on MSME competitiveness.
6. H6: Product innovation mediates the effect of crowdfunding on the competitiveness of MSMEs.
7. H7: Operational efficiency mediates the effect of digital marketing on MSME competitiveness.
8. H8: Operational efficiency mediates the effect of business management quality on MSME competitiveness.
9. H9: Operational efficiency mediates the effect of crowdfunding on MSME competitiveness.

### 1.9. Framework Think

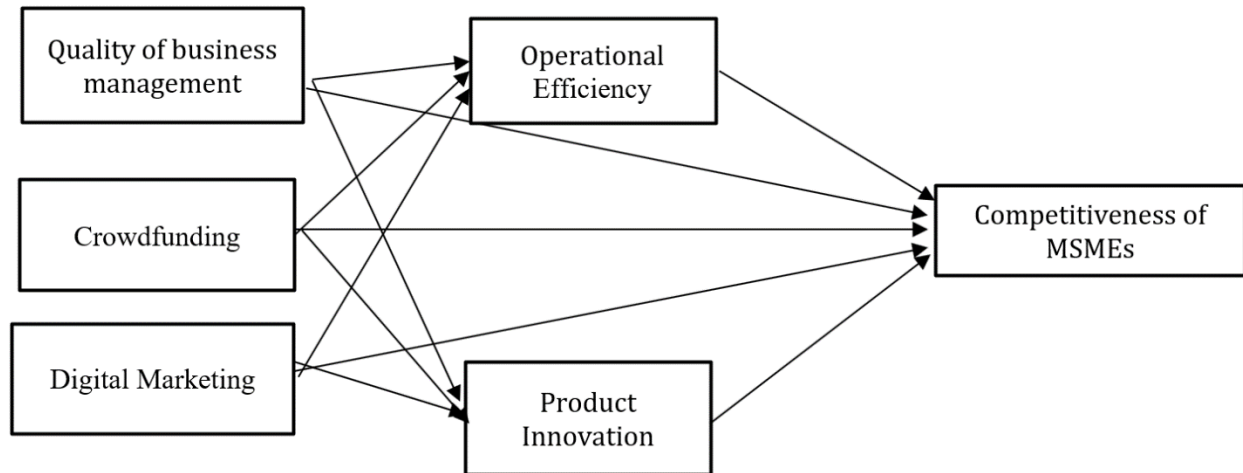
MSMEs in the ASEAN region are faced with increasingly complex competitive challenges, particularly due to globalization, economic digitalization, and changing consumer preferences. In this context, it is important for MSMEs to not only survive but also thrive and improve their competitiveness. The competitiveness of MSMEs is not only determined by internal factors such as management quality, but also by their ability to access markets more broadly and innovatively.

Digital marketing is one of the key strategies in expanding markets and reaching consumers efficiently at low cost. On the other hand, the quality of business management plays an important role in strategic decision-making, resource efficiency, and business sustainability. Crowdfunding has emerged as an alternative source of financing that supports innovation and expansion of MSMEs that have been constrained by limited access to conventional financial institutions.

However, the influence of the three strategies does not necessarily directly increase competitiveness. There are two important factors that are believed to have an intervening role, namely:

1. Product Innovation, which enables MSMEs to create uniqueness and differentiation in the market.

2. Operational Efficiency, which reduces costs, speeds up processes, and increases productivity.
- Thus, this study builds a conceptual model that connects digital marketing, management quality, and crowdfunding as independent variables, MSME competitiveness as dependent variable, and product innovation and operational efficiency as intervening variables.



**Figure 1.**  
Framework Thinking.

The direct arrows from the three independent variables to the intervening variables indicate that the strategies influence innovation and efficiency. Product innovation and operational efficiency then influence the competitiveness of MSMEs. The model also opens up the possibility to test the direct relationship from the independent variables to the dependent variable.

## 2. Literature Review

### 2.1. MSMEs in the ASEAN Region

Micro, Small, and Medium Enterprises (MSMEs) are the backbone of the economy in ASEAN countries. According to the ASEAN [1] MSMEs account for more than 97% of total business units and absorb up to 85% of the workforce in the region. However, MSMEs still face various challenges, such as limited access to markets, financing, and technology. Therefore, strategies to increase competitiveness are urgent so that MSMEs are able to adapt and grow in the digital era and globalization.

### 2.2. Digital Marketing

Digital marketing is one of the main strategies to increase the visibility and reach of MSMEs [5]. Digital marketing allows businesses to reach a wider market at a more efficient cost than conventional methods. In ASEAN Kiani and Nor [6] the use of social media and e-commerce such as Shopee, Tokopedia, and Lazada provides a great opportunity for MSMEs to increase sales and interaction with customers. Digital marketing research has a significant positive effect on the competitiveness of MSMEs [7].

### 2.3. Quality of Business Management

Good business management is the foundation of MSME sustainability. Skills in planning, financial management, human resources, and innovation are crucial factors in improving MSME performance. MSMEs in ASEAN often have weaknesses in managerial aspects due to lack of training and experience, so improving management capacity is a necessary strategy to develop long-term competitiveness [8].

### 2.4. Crowdfunding

Crowdfunding is a relevant financing alternative for MSMEs in the digital era. According to Maxwell [9] crowdfunding not only provides access to funds, but also early market validation and customer engagement [10]. Platforms such as Kickstarter, Indiegogo, and Kitabisa have helped many MSMEs and startups in the ASEAN region to grow their businesses. The study by Hidayatullah, et al.

[11] confirms that crowdfunding can significantly improve innovation capabilities and market access, especially for unbankable businesses [12].

### *2.5. Product Innovation as an Intervening Variable*

Product innovation acts as a link between external strategies such as digital marketing and crowdfunding to competitiveness. Lee [13] product innovation creates added value and differentiates MSME products amid market competition. Clark and Meyer [14] concluded that digital marketing has an indirect impact on competitiveness through increased product innovation. Innovations made can be in the form of design development, adding features, or adjusting to local preferences in ASEAN [15].

### *2.6. Operational Efficiency as Intervening Variable*

Operational efficiency allows MSMEs to manage resources optimally. Research by Slack, et al. [16] shows that efficiency in production, distribution and logistics management will lead to competitive pricing and customer satisfaction. In the ASEAN context, efficiency is particularly important given the high logistics costs between countries. Hernandez [17] that operational efficiency significantly strengthens the influence of business management on the competitiveness of MSMEs [18].

### *2.7. Competitiveness of MSMEs*

The competitiveness of MSMEs is measured by their ability to survive and grow amid domestic and international market competition [19] that competitiveness is influenced by internal company factors [20] demand conditions, company strategy, and government support. In the ASEAN context [21] MSME competitiveness is increasingly challenged by regional market integration (AEC), so integrated and innovative strategies are a must [22].

## **3. Research Methodology**

This research uses a mixed methods approach, which combines quantitative and qualitative approaches to gain a comprehensive understanding of strategies to improve the competitiveness of MSMEs in the ASEAN region.

### *3.1. Population and Sample*

The population in this study is all MSME players in ASEAN countries who are actively running their businesses, especially those who have started implementing digital technology or are involved in non-conventional funding schemes such as crowdfunding.

Samples were taken using purposive sampling, which is a sampling technique based on certain criteria, namely (1) MSMEs have been active for at least 2 years, (2) have implemented at least one of the following: digital marketing, documented business management, or crowdfunding. The sample size is a minimum of 250 respondents spread across ASEAN countries, namely the Philippines, Vietnam, Singapore, Myanmar, Laos, Cambodia, Brunei Darussalam, Indonesia, Malaysia, Thailand, Timor Leste.

**Table 2.**  
Respondent Demographics.

Demographics		Frequency	Percentage
Enterprises scale	Small	194	77,6%
	Medium	56	22,4%
	Total	250	100%
Enterprises age	6-10 years	168	67,2%
	11-15 years	67	26,8%
	16-20 years	10	4%
	>20 years	5	2%
	Total	250	100%
Gender	Male	165	66%
	Female	85	34%
	Total	250	100%
Age of respondent	21-30 years	49	19,6%
	31-40 years old	87	34,8%
	41-50 years old	75	30%
	>51 years	39	15,6%
	Total	250	100%
Collaboration skills	Yes	250	100%
	No.	0	0%
	Total	250	100%

### 3.2. Study Variables

This study uses variables consisting of (X1) Application of digital marketing, (X2) Utilization of crowdfunding, (3) Quality of business management, (Y1) Product innovation, (Y2) Operational efficiency, (Z) Competitiveness of MSMEs.

**Table 3.**  
Research Variables.

Variables		Indicator
Quality of Business Management (X1)	X1.1	Clear and structured business planning
	X1.2	Efficient financial management
	X1.3	Good management leadership
	X1.4	. Business risk mitigation capability
	X1.5	Data-driven decision making
Crowdfunding (X2)	X2.1	Knowledge of crowdfunding platforms
	X2.2	Easy access to crowdfunding platforms
	X2.3	Trust in the crowdfunding system
	X2.4	Success in obtaining funds from crowdfunding
Use of Digital Marketing (X3)	X3.1	Frequency of promotion on social media
	X3.2	Use of marketplace/e-commerce platforms
	X3.3	Use of marketplace/e-commerce platforms
	X3.4	Use of paid digital advertising
	X3.5	Consistency of digital marketing content
Operational Efficiency (Y1)	Y1.1	Operational cost savings
	Y1.2	Efficient use of labor and time
	Y1.3	Optimization of production or service processes
	Y1.4	Reduction of error rate/defective products
	Y1.5	Increased output with the same input
Product Innovation (Y2)	Y2.1	Regular new product launches
	Y2.2	Product customization to consumer needs
	Y2.3	Technology utilization in innovation
	Y2.4	Changes in product design or features
	Y2.5	Development of unique product variants
Competitiveness of MSMEs in ASEAN (Z)	Z1	Ability to export products to ASEAN countries
	Z2	Product differentiation compared to regional competitors

	Z3	Competitive product prices
	Z4	Brand recognition in the ASEAN market
	Z5	. Adaptation to ASEAN market regulations

### 3.3. Quantitative Approach

a. Instrument with a closed questionnaire using a Likert scale (1-5) which includes (X1) Application of digital marketing, (X2) Utilization of crowdfunding, (3) Quality of business management, (Y1) Product innovation, (Y2) Operational efficiency, (Z) Competitiveness of MSMEs.

b. Data Collection Techniques with Online survey through Google Forms or similar platforms, Questionnaires were distributed to MSME players in ASEAN countries (such as Indonesia, Malaysia, Philippines, Thailand, and Vietnam) through MSME associations, digital business communities, and social media.

c. Purposive sampling technique, with the following criteria: (1) MSMEs are active for at least 2 years, (2) have used at least one of the main strategies (digital marketing / crowdfunding / technology-based business management), (3) operating in the ASEAN region.

d. Number of Respondents At least 250 respondents, according to the needs of the SEM (Structural Equation Modeling) model test.

### 3.4. Qualitative Approach

a. Semi-structured interview guide, covering (1) MSMEs' experiences in implementing digital marketing and crowdfunding, (2) challenges and solutions in improving operational efficiency and product innovation, (3) the impact of these strategies on their business competitiveness.

b. Data Collection Techniques in-depth interviews were conducted in person or through online platforms (Zoom/Google Meet), Interviews were recorded with the consent of the interviewees and transcribed for analysis.

c. Sampling technique, namely using Snowball sampling: starting with several MSME actors recommended by the association, then developing through references from initial sources, the sources include: (1) MSME owners/managers, (2) Crowdfunding platform managers, (3) Officials of MSME associations in ASEAN.

d. Number of Interviewees 10 key informants, until data saturation is reached (no new findings emerge).

3. Data Integration (Data Triangulation), namely (1) Quantitative data will be analyzed using SEM (Structural Equation Modeling) to see the relationship between variables, (2) Qualitative data is used to support and explain quantitative results in more depth, (3) The results of the two approaches will be consolidated in the discussion section to gain a fuller understanding of strategies to improve the competitiveness of MSMEs in ASEAN. Uses a quantitative approach with an explanatory research type. This approach is used to examine the direct and indirect effects of independent variables (digital marketing, business management quality, and crowdfunding) on MSME competitiveness with product innovation and operational efficiency as intervening variables. The data will be analyzed statistically to determine the relationship between variables through a path analysis model using SmartPls4.

## 4. Result

### 4.1. Data Output from interviews and FGDs

#### 4.1.1. Theme: Implementation of Digital Marketing

Findings: (1) MSME players in Indonesia, Malaysia, and the Philippines stated that social media such as Instagram, Facebook, and TikTok are the main means of promotion, (2) Digital marketing is considered to be able to reduce promotional costs and increase market reach across countries.

Interviewee Quotes:

"We can reach customers from Singapore and Brunei just through TikTok. It used to be impossible without huge costs." (Interviewee 1, F&B MSME, Malaysia)



## 2. Theme: Quality of Business Management

Findings: (1) MSMEs that have a simple organizational structure and a clear division of tasks are more adaptive in facing market changes, (2) Many MSME actors do not have adequate financial management skills, especially in recording and managing cash.

### Interviewee Quotes:

"We still record our expenses and income in a notebook. Sometimes we don't know for sure whether our business is profitable or loss-making." (Interviewee 4, Craft MSME, Indonesia)

## 3. Theme: Crowdfunding Utilization

Findings: (1) Crowdfunding is seen as an alternative solution to bank loans that are often difficult for MSMEs to access, (2) However, many MSMEs are not familiar with crowdfunding platforms, let alone how to create attractive campaigns.

### Interviewee Quotes:

"Platforms like Kitabisa or Gandengtangan are good, but we don't know where to start. We need training." (Interviewee 7, Retail MSME, Indonesia)

## 4. Theme: Product Innovation (Intervening Variable)

Findings: (1) Product innovation occurs when MSME actors get direct input from customers through social media, (2) Products that are successfully marketed digitally are usually unique, both in terms of packaging, local raw materials, and presentation methods.

	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
AlphaZ	0.777	0.808	0.842	0.519
X1	0.743	0.761	0.838	0.567
X2	0.785	0.817	0.85	0.535
X3	0.795	0.814	0.86	0.554
Y1	0.776	0.811	0.85	0.539
Y2	0.773	0.809	0.85	0.542

### 4.2. Interviewee Quotes

"After it became popular on TikTok, we started making new flavors based on customer comments. It turned out to be a big seller." (Interviewee 3, Beverage MSME, Philippines)

## 5. Theme: Operational Efficiency (Intervening Variable)

Findings: (1) MSMEs that use stock and financial management applications such as Moka POS or BukuWarung can reduce operational costs by up to 15%, (2) Digitalization of production processes and records makes it easier to predict demand.

### 4.3. Interviewee Quotes

"Before using the app, a lot of raw materials were wasted. Now, it is more targeted and efficient." (Interviewee 5, Fashion MSME, Vietnam)

## 6. Theme: Competitiveness of MSMEs

FGD findings: (1) The competitiveness of MSMEs is significantly improved if there is a combination of digital strategy, good management, and product innovation, (2) Government support and the ASEAN business community are very helpful in building networks and new market access.

### 4.4. FGD Excerpt

"We need an ecosystem, we can't just rely on ourselves. Collaboration and digital training are important." (FGD participant, ASEAN MSME representative)

### Qualitative Output Conclusion

From the results of interviews and FGDs, it can be concluded that: (1) The application of digital marketing drives increased demand and market reach, (2) Management quality is still a challenge, but is key in managing growth, (3) Crowdfunding is effective if accompanied by education and guidance on

campaign strategies, (4) Product innovation and operational efficiency are proven to be the main links that strengthen the influence of key strategies on the competitiveness of MSMEs in ASEAN.

#### 4.5. Validity and Reability Output

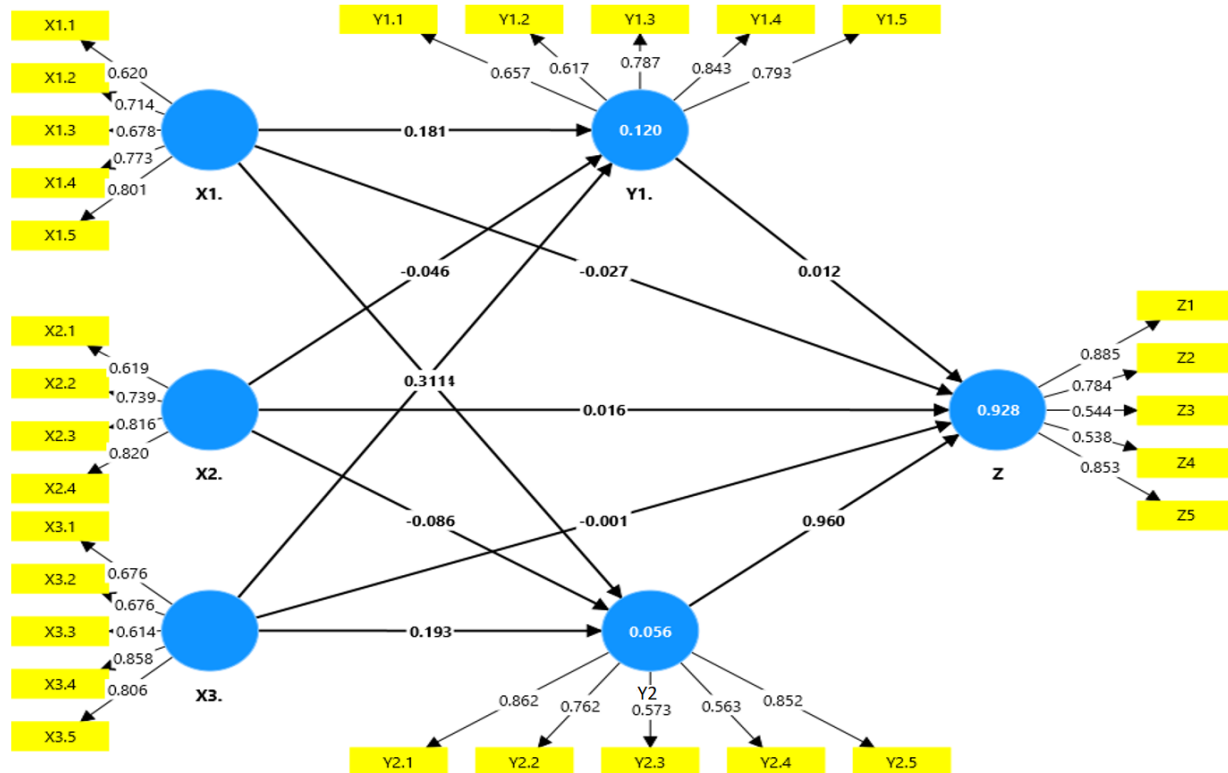
**Table 4.**  
Validity and Reliability.

	<b>Cronbach's alpha</b>	<b>Composite reliability (rho_a)</b>	<b>Composite reliability (rho_c)</b>	<b>Average variance extracted (AVE)</b>
<b>AlphaZ</b>	0.777	0.808	0.842	0.519
<b>X1</b>	0.743	0.761	0.838	0.567
<b>X2</b>	0.785	0.817	0.85	0.535
<b>X3</b>	0.795	0.814	0.86	0.554
<b>Y1</b>	0.776	0.811	0.85	0.539
<b>Y2</b>	0.773	0.809	0.85	0.542

All variables analyzed showed excellent reliability and validity. The Cronbach's alpha, Composite Reliability (rho\_a and rho\_c), and Average Variance Extracted (AVE) values are all within the range indicating that the measurement instruments are reliable and the measured constructs have good validity. This indicates that the data used to analyze Quality of Business Management (X1), Crowdfunding (X2), Use of Digital Marketing (X3), Operational Efficiency (Y1), Product Innovation (Y2), and Competitiveness of MSMEs in ASEAN (Z) are very solid and can be used for further analysis with a high level of confidence.

#### 4.6. Data Processing Output

Here are the results



**Figure 2.**  
SEM-PLS Structural Model.

#### 4.7. Main Hypotheses

*H<sub>1</sub>: Digital Marketing (X3) has a positive effect on MSME Competitiveness (Z)*

- Interpretation: Based on the diagram, there is a direct relationship between X3 (Digital Marketing) and Z (Competitiveness of MSMEs). The coefficient showing this relationship is 0.056, which is positive, but fairly small. This shows that digital marketing has a fairly small positive influence on the competitiveness of MSMEs.

*H<sub>2</sub>: Business Management Quality (X1) has a positive effect on MSME Competitiveness (Z)*

- Interpretation: The diagram shows a direct relationship between X1 (Quality of Business Management) and Z (Competitiveness of MSMEs) with a coefficient of 0.120, which is positive. Although small, this relationship shows that the quality of business management has a positive influence on the competitiveness of MSMEs, although the impact is not very large.

*H<sub>3</sub>: Crowdfunding (X2) has a positive effect on MSME Competitiveness (Z)*

- Interpretation: In the diagram, there is a positive relationship between X2 (Crowdfunding) and Z (MSME Competitiveness) with a coefficient of 0.311. This indicates that crowdfunding has a moderate positive influence on MSME competitiveness, greater than the influence of digital marketing and business management quality.

#### 4.8. Intervening Hypotheses

*H<sub>4</sub>: Product Innovation (Y2) mediates the effect of Digital Marketing (X3) on MSME Competitiveness (Z)*

- Interpretation: (1) The diagram shows a direct relationship between X3 (Digital Marketing) and Y2 (Product Innovation) with a coefficient of 0.056. In addition, there is a positive relationship between Y2 (Product Innovation) and Z (Competitiveness of MSMEs) with a coefficient of 0.573.,

(2) Therefore, Y2 (Product Innovation) can be considered as a mediator that strengthens the influence of digital marketing on the competitiveness of MSMEs.

*H<sub>3</sub>: Product Innovation (Y2) mediates the effect of Business Management Quality (X1) on MSME Competitiveness (Z).*

- Interpretation: (1) There is a positive relationship between X1 (Quality of Business Management) and Y2 (Product Innovation) with a coefficient of 0.193, as well as a positive relationship between Y2 (Product Innovation) and Z (Competitiveness of MSMEs) with a coefficient of 0.573., (2) Therefore, Product Innovation mediates the positive influence of the quality of business management on the competitiveness of MSMEs.

*H<sub>6</sub>: Product Innovation (Y2) mediates the effect of Crowdfunding (X2) on MSME Competitiveness (Z)*

- Interpretation: (1) The diagram shows a direct relationship between X2 (Crowdfunding) and Y2 (Product Innovation) with a coefficient of 0.193, as well as a positive relationship between Y2 (Product Innovation) and Z (MSME Competitiveness) with a coefficient of 0.573, (2) Therefore, Product Innovation also mediates the effect of crowdfunding on MSME competitiveness, although the effect is relatively small.

*H<sub>7</sub>: Operational Efficiency (Y1) mediates the effect of Digital Marketing (X3) on MSME Competitiveness (Z).*

- Interpretation: (1) There is a positive relationship between X3 (Digital Marketing) and Y1 (Operational Efficiency) with a coefficient of 0.056, as well as a relationship between Y1 (Operational Efficiency) and Z (MSME Competitiveness) with a coefficient of 0.928, (2) With a very large coefficient between Y1 and Z, Operational Efficiency can be considered as a very strong mediator between digital marketing and MSME competitiveness.

*H<sub>8</sub>: Operational Efficiency (Y1) mediates the effect of Business Management Quality (X1) on MSME Competitiveness (Z).*

- Interpretation: (1) The diagram shows a positive relationship between X1 (Quality of Business Management) and Y1 (Operational Efficiency) with a coefficient of 0.181, as well as a very strong relationship between Y1 (Operational Efficiency) and Z (Competitiveness of MSMEs) with a coefficient of 0.928, (2) Therefore, Operational Efficiency mediates the positive effect of business management quality on the competitiveness of MSMEs with a very strong influence.

*H<sub>9</sub>: Operational Efficiency (Y1) mediates the effect of Crowdfunding (X2) on MSME Competitiveness (Z).*

- Interpretation: (1) The diagram shows a positive relationship between X2 (Crowdfunding) and Y1 (Operational Efficiency) with a coefficient of 0.311, as well as a very strong positive relationship between Y1 (Operational Efficiency) and Z (MSME Competitiveness) with a coefficient of 0.928., (2) Therefore, Operational Efficiency mediates the positive effect of crowdfunding on MSME competitiveness, with a strong effect.

#### 4.9. Conclusion Quantitative Output

From the results of data processing, it can be concluded that (1) Digital Marketing (X3), Quality of Business Management (X1), and Crowdfunding (X2) all have a positive influence on MSME Competitiveness (Z), but the influence of Crowdfunding is stronger than the other two factors. (2) Product Innovation (Y2) and Operational Efficiency (Y1) function as mediators that strengthen the relationship between independent variables (X) and MSME Competitiveness (Z). Operational Efficiency (Y1) shows the strongest influence as a mediator .

#### 4.10. Data triangulation

##### 4.10.1. Data and Source Triangulation Conclusion

In this study, the analysis was conducted using qualitative and quantitative approaches, with triangulation of data and sources to provide a more comprehensive understanding of the influence of

factors affecting the competitiveness of MSMEs in ASEAN. The following are the conclusions from the triangulation results:

#### 4.11. *Quality of Business Management (X1)*

- Qualitative: The quality of business management is considered a major challenge for many MSMEs, but remains a key factor in managing business growth and development. Good management quality can help MSMEs manage risks and capitalize on opportunities in the market.
- Quantitative: The quality of business management also has a positive influence on the competitiveness of MSMEs, although the effect is slightly smaller than that of crowdfunding and digital marketing. However, the quality of business management remains an important factor in the long-term success of MSMEs.

#### 4.12. *Crowdfunding (X2)*

- Qualitative: Crowdfunding is considered highly effective if accompanied by good education and proper campaign strategy coaching. Many MSMEs experienced difficulties in managing their crowdfunding campaigns, but those that succeeded showed a positive impact on venture capital and business expansion.
- Quantitative: Crowdfunding is proven to have a stronger influence than other factors (digital marketing and business management quality) on MSME competitiveness. This shows that funding strategies through crowdfunding have a significant impact on the competitiveness of MSMEs in ASEAN.

#### 4.13. *Digital Marketing (X3)*

- Qualitative: Digital marketing is proven to be effective in increasing demand and expanding the market reach of MSMEs. This suggests that MSMEs that utilize digital marketing can increase their market visibility and penetration, which in turn increases their competitiveness in the ASEAN market.
- Quantitative: Digital marketing has a positive influence on the competitiveness of MSMEs, although the effect is smaller than crowdfunding and operational efficiency. However, the role of digital marketing remains significant as a factor influencing competitiveness.

#### 4.14. *Operational Efficiency (Y1)*

- Qualitative: Operational efficiency is considered key in ensuring viability and optimal resource management in MSMEs. MSMEs that are efficient in their operations can reduce costs and increase profitability, leading to better competitiveness.
- Quantitative: Operational efficiency shows the strongest influence as a mediator in the relationship between the key factors (digital marketing, quality of business management, and crowdfunding) and MSME competitiveness. This suggests that operational efficiency is critical in improving MSME competitiveness, especially in terms of resource management and cost reduction.

#### 4.15. *Product Innovation (Y2)*

- Qualitative: Product innovation is proven to be one of the key drivers in improving the competitiveness of MSMEs. MSMEs that can innovate with unique products and in accordance with market needs are easier to compete in a competitive market.
- Quantitative: Product innovation serves as a mediator that strengthens the relationship between digital marketing, business management quality, and crowdfunding on MSME competitiveness. Product innovation has a significant positive impact in strengthening the influence of these factors.

#### Triangulation Conclusion:

By triangulating data and sources from interviews, FGD (Focus Group Discussion), and qualitative and quantitative analysis, it can be concluded that:

1. Digital marketing, business management quality, and crowdfunding play important roles in improving the competitiveness of MSMEs in ASEAN. Among the three, crowdfunding shows a stronger influence.
2. Product innovation and operational efficiency act as mediators that strengthen the relationship between the main factors (X) and MSME competitiveness. Of the two, operational efficiency has the strongest influence as a mediator.
3. Operational efficiency plays a central role in ensuring that factors affecting MSME competitiveness are well optimized, suggesting that without efficiency in operations, the influence of digital marketing, crowdfunding, and business management on MSME competitiveness may not be as strong as expected.

Overall, operational efficiency and crowdfunding have a greater impact on improving MSME competitiveness, which is further influenced by product innovation and effective management.

## 5. Discussion

This study aims to analyze strategies to improve the competitiveness of MSMEs in the ASEAN region by implementing digital marketing, business management quality, and crowdfunding, with product innovation and operational efficiency as intervening variables. Based on the findings from the qualitative and quantitative analysis, some important insights can be obtained regarding the relationship between the variables involved in this study.

### 5.1. *The Effect of Digital Marketing on MSME Competitiveness*

Digital marketing has been shown to have a positive influence on the competitiveness of MSMEs in ASEAN. Digital marketing [23] which includes the use of online platforms for product promotion and marketing, helps MSMEs expand their market reach and increase their product visibility [24]. This is especially important in an increasingly digitally connected world [25] where consumers are increasingly turning to online platforms to conduct transactions. However, while digital marketing has proven to be significant [26] its influence is relatively smaller than crowdfunding and operational efficiency. Digital marketing is an effective instrument to attract market attention [27] but it is not enough to maintain competitiveness without product innovation and efficient operational management [28].

### 5.2. *The Effect of Business Management Quality on MSME Competitiveness*

The quality of business management has a positive influence on MSME competitiveness. Nonetheless, poor management remains a major challenge faced by many MSMEs in ASEAN. The quality of business management is closely related to the ability to manage resources [25] adapt to market changes, and make the right decisions. Good management will enable MSMEs to survive in competitive conditions, and build stronger business resilience in the face of market dynamics [29].

### 5.3. *The Effect of Crowdfunding on MSME Competitiveness*

Crowdfunding has been shown to have a stronger influence than the other two factors (digital marketing and quality of business management) [30]. Crowdfunding can provide MSMEs with the financial resources they need to expand operations, improve product quality, and strengthen their market position. With crowdfunding, MSMEs can access funds that are difficult to obtain through traditional banking channels [31] which in turn increases their competitiveness. However, crowdfunding needs to be accompanied by proper education and coaching to maximize the potential success of the funding campaign [32].

#### 5.4. Product Innovation and Operational Efficiency as Intervening Variables

Product innovation and operational efficiency serve as mediators that strengthen the influence of digital marketing [33] business management quality, and crowdfunding on MSME competitiveness. Product innovation shows how important it is for MSMEs to continuously develop products that meet market needs and keep up with the latest trends. Meanwhile, operational efficiency shows how good resource management [34] cost reduction, and improved operational processes can increase the profitability and competitiveness of MSMEs [35]. Operational efficiency has the strongest influence as a mediator, as optimizing the use of resources and costs will directly improve competitiveness in the long run [36].

## 6. Conclusion

Based on the results of the research and discussion that has been carried out, it can be concluded that:

Digital Marketing, Business Management Quality, and Crowdfunding all have a positive influence on the competitiveness of MSMEs in ASEAN, with Crowdfunding having the strongest influence among the three factors. Crowdfunding gives MSMEs access to funds that support their business growth and development, which in turn improves competitiveness.

Product Innovation and Operational Efficiency serve as mediators that strengthen the relationship between the independent variables (digital marketing, business management quality, and crowdfunding) and MSME competitiveness. Product innovation improves competitiveness through the development of better and more relevant products to market needs, while operational efficiency contributes greatly in ensuring optimal management of costs and resources, which directly affects the strengthening of MSME competitiveness.

Operational Efficiency shows the strongest influence as a mediator variable, as the success of MSMEs in managing efficient operations allows them to survive and compete better in the highly competitive ASEAN market.

The MSME Competitiveness Improvement Strategy should involve a holistic approach, taking into account three main factors: digital marketing, quality of business management, and crowdfunding, as well as improving product innovation and operational efficiency as part of an overall effort to improve competitiveness.

### Transparency:

The authors confirm that the manuscript is an honest, accurate, and transparent account of the study; that no vital features of the study have been omitted; and that any discrepancies from the study as planned have been explained. This study followed all ethical practices during writing.

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