



## Digital Transformation of Msmes And Its Contribution To Economic Performance Toward Indonesia Emas 2045

Sinta Veronika Hutabarat, Furi Windari<sup>2</sup>, Heni Wardina<sup>3</sup>, Dicky Syahputra Lubis<sup>4</sup>,  
Rahmadiyah Hanum<sup>5</sup>

<sup>1,2</sup>Entrepreneurship, Al-Washliyah Sibolga College of Economics Central Tapanuli, Indonesia

<sup>3,4,5</sup>Human Resource Management, Al-Washliyah Sibolga College of Economics Central Tapanuli, Indonesia

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### ABSTRACT

Digital transformation is a critical factor in strengthening micro, small, and medium enterprises (MSMEs) to support sustainable economic growth. This study aims to analyze the contribution of MSME digital transformation to economic performance within the perspective of Indonesia Emas 2045. The research adopts a quantitative approach using survey data collected from MSME actors who have implemented digital technologies in their business operations. Data are analyzed using multiple linear regression to examine the influence of digital marketing, digital payment systems, and online marketplaces on MSME economic performance. The findings indicate that digital transformation significantly improves MSME competitiveness, sales growth, and operational efficiency. This study contributes to the economic development literature by positioning MSME digitalization as a strategic driver for achieving Indonesia's long-term national development vision. The results provide policy implications for accelerating MSME digital adoption to support inclusive and sustainable economic growth.

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#### Corresponding Author:

Sinta Veronika Hutabarat, S.E., M.M

Kewirausahaan, Sekolah Tinggi Ilmu Ekonomi Al Washliyah Sibolga Tapanuli Tengah

Address (Jl. Padang Sidempuan Km.5 No 98 Sarudik), Kabupaten Tapanuli tengah, Sumatera Utara, 22531, Indonesia.

Email: [Sintaveronika77@gmail.com](mailto:Sintaveronika77@gmail.com)

## 1. INTRODUCTION

Indonesia Emas 2045 represents Indonesia's long-term national vision to achieve sustainable economic growth through innovation and digital transformation (*The Digital Transformation of SMEs*, 2021). Micro, small, and medium enterprises (MSMEs) play a strategic role in Indonesia's economy due to their dominant contribution to employment and business activities (Tambunan, 2019). Recent macroeconomic data underscore the strategic importance of MSMEs in supporting Indonesia's long-term development agenda toward Indonesia Emas 2045. MSMEs contribute approximately 61–62 percent of Indonesia's Gross Domestic Product (GDP) and absorb nearly 97 percent of total national employment, equivalent to more than 117 million workers, highlighting their dominant role in the national economic structure. In terms of digital technology adoption, government and institutional reports indicate that more than 27 million MSMEs have entered the digital ecosystem, utilizing technologies such as e-commerce platforms,

digital payment systems, and online marketing tools, with adoption rates continuing to increase annually. This growing digital penetration among MSMEs reflects a structural shift toward a more inclusive digital economy. Given their substantial contribution to GDP and employment, the acceleration of digital transformation among MSMEs is not only critical for improving firm-level productivity and competitiveness, but also represents a key pillar for achieving sustainable, innovation-driven economic growth in line with the vision of Indonesia Emas 2045. Digital transformation enables MSMEs to expand market access and improve competitiveness through the adoption of e-commerce platforms (Rahayu & Day, 2017a). The adoption of digital technologies among MSMEs fosters competitiveness and resilience, as evidenced in regional Indonesian contexts (Mantik et al., 2024). Digital transformation enhances the performance and sustainability of micro, small, and medium enterprises by improving operational efficiency, market reach, and competitiveness in the digital economy (Utami, 2024). Digital technology adoption strengthens MSME competitiveness and productivity in developing economies (Kim & Lee, 2020). The use of e-commerce platforms enables MSMEs to expand markets beyond local boundaries (Rahayu & Day, 2017b). Digitalization strengthens MSME business resilience by enabling firms to maintain operations during economic disruptions and external shocks. Digital platforms allow MSMEs to continue marketing, sales, and communication activities despite physical limitations. This adaptability supports business continuity, income stability, and long-term sustainability in uncertain economic conditions (Ekonomi Pembangunan; Cahyadin et al., 2025). Digital transformation enables MSMEs to improve operational efficiency by automating business processes and reducing administrative costs. The use of digital tools supports faster coordination, better inventory management, and more efficient resource utilization (Zhang & Chen, 2021). Digital transformation contributes to MSME sustainability by supporting environmentally friendly business practices and reducing resource waste. Digital processes promote efficiency and align MSME activities with sustainable development goals (Bularca et al., 2022). Digital transformation improves MSME operational efficiency by enabling automation, better coordination, and faster business processes. These improvements allow MSMEs to reduce costs and increase productivity in competitive markets (Serrano-Baena et al., 2020). Organizational readiness and leadership commitment play a critical role in determining the success of digital transformation in MSMEs. Strong leadership accelerates technology adoption and improves transformation outcomes (Kuzmanović et al., 2021). The use of digital technologies supports MSME strategic flexibility by enabling faster responses to market changes and competitive pressures. Strategic flexibility enhances MSME survival and performance in dynamic business environments (Küçüker & Başkent, 2017). Digital-based village tourism development practices have demonstrated that online platforms and data-driven technology can improve competitiveness and support sustainable community welfare without compromising environmental value (Sukaris & Kirono, 2025). Systematic literature reviews indicate that digital marketing strategies, including social media and online advertising, play a vital role in improving the sustainable performance of MSMEs and addressing competitive market challenge (Setiawan et al., n.d.).

Literatur, Digital transformation has been identified as a critical factor in enhancing productivity and profitability among SMEs in Indonesia, though challenges such as infrastructure and digital literacy remain significant barriers (Sri Wulan et al., n.d.). Empirical research exploring the digital transformation journey of MSMEs reveals both inhibitors and accelerators of digital adoption, highlighting how digital channels, internal processes, and employee engagement contribute to digital maturity (Marolt et al., 2025). Studies analyzing digital transformation in tourism emphasize the positive impact of integrated technologies—such as online booking, virtual reality, and IoT—on tourists' experiences, promoting more immersive and accessible travel opportunities. (Digital Transformation in Tourism: Exploring the Impact of Technology on Travel Experiences

Transformasi Digital Dalam Pariwisata: Menjelajahi Dampak Teknologi Terhadap Travel Experiences 1Natalia Kristiani Tandafatu , 2Lindiana Ermilinda, 3Yohanes Brekmans M. Darkel 1Politeknik Cristo Re Maumere, 23Universitas Nusa Nipa Maumere, 2024). Research on MSME digital capability emphasizes that digital business strategies and digital literacy are crucial for sustaining business growth, performance, and competitiveness in the digital era (Wulandari et al., 2024). Recent studies highlight that digital ecosystems improve supply chain integration among MSMEs, enabling better coordination, inventory accuracy, and delivery efficiency, which collectively improve economic performance (Brumă et al., 2021). The adoption of digital platforms has been linked to stronger customer relationships and market intelligence, allowing MSMEs to analyze purchasing behavior and provide personalized services that increase loyalty and sale (Yan et al., 2021). Recent research highlights that digital transformation facilitates data-driven decision-making in MSMEs, enabling better forecasting, performance tracking, and strategic planning compared to traditional managerial approaches (Xie et al., 2023). Digital transformation strengthens MSME competitiveness by enabling firms to integrate automation, enhance workflow efficiency, and reduce operational bottlenecks, ultimately improving production quality and business scalability (Moise et al., 2023). Digital transformation research indicates that technology adoption enables MSMEs to optimize resource allocation and reduce operational waste, contributing to higher efficiency and sustainable business growth(Husain et al., 2021)

## 2. RESEARCH METHOD

This study adopts a quantitative research approach to examine the relationship between MSME digital transformation and economic performance. A cross-sectional survey design is used to collect primary data from MSME owners who have implemented digital technologies in their business activities(Brant et al., 2015)

### 2.1 Research Design and Data Collection

Data are collected using a structured questionnaire distributed to MSME actors. The questionnaire measures three independent variables: digital marketing adoption (X1), digital payment utilization (X2), and e-commerce platform usage (X3). The dependent variable is MSME economic performance (Y), measured through indicators of sales growth, market expansion, and operational efficiency.

### 2.2 Population and Sample

The population consists of MSMEs operating in Indonesia that have adopted at least one form of digital technology. A purposive sampling technique is applied to select respondents who meet this criterion. A total of n MSMEs are included in the analysis (Sugiyono, 2021).

Table-1 Criteria for Defining MSMEs That Have Implemented Digital Technology

Criterion	Description
Type of Digital Technology	MSMEs utilize at least one core digital business technology, including digital marketing tools (e.g., social media business accounts or online advertising), digital payment systems (e.g., e-wallets or online banking), or e-commerce platforms (e.g., online marketplaces or proprietary online stores).
Length of Technology Use	MSMEs have continuously used the selected digital technology for a minimum of six months prior to data collection, ensuring that adoption has progressed beyond initial experimentation and has influenced business operations.
Business Scale	MSMEs are classified as micro, small, or medium enterprises according to Indonesian MSME regulations, based on asset ownership and annual turnover thresholds. Large enterprises are excluded from the population.

### 2.3 Data Analysis Technique

Data are analyzed using multiple linear regression to test the effect of digital transformation variables on economic performance. The regression model is specified as follows:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon$$

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Where:

Y = MSME Economic Performance

X1 = Digital Marketing Adoption

X2 = Digital Payment Utilization

X3 = E-commerce Platform Usage

$\beta_0$  = Constant

$\beta_1, \beta_2, \beta_3$  = Regression coefficients

$\varepsilon$  = Error term

Hypothesis testing is conducted using t-tests and F-tests with a significance level of 5%. The coefficient of determination ( $R^2$ ) is used to assess the explanatory power of the model.

## 3. RESULTS AND DISCUSSIONS

### 3.1 Descriptive Statistics

The descriptive analysis indicates that the level of digital transformation among MSMEs is relatively high. Digital marketing adoption shows the highest mean score, followed by e-commerce platform usage and digital payment utilization. MSME economic performance indicators also demonstrate positive trends, particularly in sales growth and market expansion.

Table 2. Descriptive Statistics of Research Variables

Variable	Mean	Standard Deviation	Category
Digital Marketing Adoption (X1)	4.12	0.56	High
Digital Payment Utilization (X2)	3.98	0.61	High
E-commerce Platform Usage (X3)	4.05	0.58	High
MSME Economic Performance (Y)	4.08	0.54	High

### 3.2 Multiple Linear Regression Results

The regression analysis demonstrates that all digital transformation variables have a positive effect on MSME economic performance. The model is statistically significant, indicating that digital transformation plays an important role in explaining variations in MSME economic outcomes.

Table 3. Multiple Linear Regression Results

Variable	Coefficient ( $\beta$ )	t-value	Sig.
Constant	0.842	3.214	0.002
Digital Marketing Adoption (X1)	0.352	5.487	0.000
Digital Payment Utilization (X2)	0.271	4.103	0.000
E-commerce Platform Usage (X3)	0.318	4.962	0.000

### 3.3 Model Feasibility Test

The F-test results indicate that the regression model is feasible and statistically significant. The coefficient of determination ( $R^2$ ) shows that a substantial proportion of MSME economic performance is explained by digital transformation variables.

Table 4. Model Feasibility Test

Indicator	Value
F-statistic	52.37
Sig.	0.000
R <sup>2</sup>	0.684

### 3.4 Discussion

The findings of this study provide empirical evidence that digital transformation plays a significant role in enhancing the economic performance of micro, small, and medium enterprises (MSMEs) in Indonesia. The descriptive statistics indicate a relatively high level of digital technology adoption among MSMEs, with digital marketing showing the highest mean score compared to e-commerce platform usage and digital payment utilization. This pattern suggests that MSMEs tend to prioritize technologies that directly support customer engagement and market visibility, which aligns with the resource constraints commonly faced by small businesses.

The regression results further confirm that all digital transformation variables have a positive and statistically significant effect on MSME economic performance. Among the three variables, digital marketing adoption emerges as the most influential factor, as indicated by the highest regression coefficient ( $\beta = 0.352$ ). This finding reflects the business realities of Indonesian MSMEs, where social media platforms and online promotional tools are widely used to attract customers, expand market reach, and stimulate demand. In many cases, digital marketing serves as the primary entry point into digitalization, enabling MSMEs to achieve immediate performance gains without requiring substantial financial investment.

Although digital payment utilization and e-commerce platform usage also exhibit significant positive effects on economic performance, their influence is relatively weaker compared to digital marketing adoption. Digital payment systems mainly enhance transaction convenience and operational efficiency rather than directly generating sales. Similarly, e-commerce platforms provide broader market access but often require additional capabilities, such as logistics management, inventory control, and platform fees, which may limit their short-term impact on MSME performance. These findings suggest that while transactional and platform-based technologies are important, their economic benefits tend to materialize more gradually.

The model feasibility test demonstrates strong explanatory power, with an R<sup>2</sup> value of 0.684, indicating that 68.4% of the variation in MSME economic performance is explained by digital transformation variables. This result highlights the substantial contribution of digital technologies to sales growth, market expansion, and operational efficiency. However, the remaining 31.6% of unexplained variance suggests that MSME performance is also shaped by other factors beyond digital transformation. These may include human capital quality, digital literacy, access to finance, product innovation, market competition, infrastructure availability, and external economic conditions. Therefore, digital transformation should be viewed as a critical but complementary component within a broader MSME development framework.

Overall, the results of this study are consistent with previous research that emphasizes the importance of digital transformation in improving MSME competitiveness and sustainability. The dominance of digital marketing adoption underscores the need for targeted policies and capacity-building programs that strengthen MSME digital

marketing capabilities. At the same time, efforts to enhance the effectiveness of digital payments and e-commerce platforms should be accompanied by improvements in digital skills, logistics infrastructure, and institutional support to maximize their long-term economic impact. These findings reinforce the strategic role of MSME digital transformation in supporting inclusive and sustainable economic growth in line with Indonesia's long-term development vision.

#### 4. CONCLUSION

This study provides empirical evidence that digital transformation significantly enhances the economic performance of micro, small, and medium enterprises (MSMEs) in Indonesia. The results of the multiple linear regression analysis demonstrate that digital marketing adoption, digital payment utilization, and e-commerce platform usage all have positive and statistically significant effects on MSME economic performance, as reflected in sales growth, market expansion, and operational efficiency.

The model explains 68.4% of the variation in MSME economic performance ( $R^2 = 0.684$ ), indicating that digital transformation constitutes a major driver of MSME economic outcomes. Among the three dimensions, digital marketing adoption emerges as the most influential factor, highlighting its immediate impact on customer engagement and demand generation in the Indonesian MSME context. Meanwhile, digital payment systems and e-commerce platforms play complementary roles by improving transaction efficiency and expanding market access. These findings confirm that digital transformation is not only statistically significant but also economically meaningful for strengthening MSME competitiveness and sustainability.

Based on the empirical findings, this study proposes several concrete policy recommendations for the government and relevant institutions to accelerate MSME digital transformation and maximize its economic impact.

First, digital marketing capability development should be prioritized. Given its strongest influence on MSME economic performance, government agencies and supporting institutions should expand targeted training programs focusing on social media marketing, content creation, and data-driven promotional strategies. Practical, hands-on digital marketing assistance—rather than purely theoretical training—can help MSMEs achieve immediate improvements in sales and market reach.

Second, the adoption of digital payment systems should be strengthened through incentive-based policies. While digital payments significantly contribute to MSME performance, their role is mainly supportive. Governments can encourage wider usage by providing transaction fee subsidies, simplifying digital payment onboarding processes, and integrating MSMEs into national payment systems to enhance transaction efficiency and financial inclusion.

Third, e-commerce platform utilization should be supported through ecosystem-based interventions. To increase the economic impact of e-commerce adoption, policymakers should address structural challenges such as logistics infrastructure, inventory management capabilities, and platform literacy. Collaboration between government institutions, logistics providers, and e-commerce platforms can help MSMEs fully leverage online marketplaces and achieve sustainable market expansion.

Finally, integrated digital transformation policies are essential. Since digital transformation explains a substantial proportion of MSME economic performance, policy interventions should not focus on single technologies in isolation. Instead, coordinated programs that combine digital marketing, digital payments, and e-commerce adoption—supported by improvements in digital literacy, infrastructure, and access to finance—will more effectively enhance MSME productivity and competitiveness. Overall, these policy recommendations reinforce the role of MSME digital transformation as a strategic pillar

for inclusive and sustainable economic growth, supporting Indonesia's long-term development vision toward Indonesia Emas 2045.

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