

Factors Affecting the Export Performance of MSMEs in Indonesia

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Abstract

The export performance of Micro, Small, and Medium Enterprises (MSMEs) plays a crucial role in enhancing Indonesia's economic competitiveness in the global market. However, MSME export development still faces various challenges, both from the digitalization aspect and macroeconomic conditions. This study aims to analyze the influence of MSME digitalization, e-commerce, logistics costs, and inflation on MSME export performance in Indonesia. The study uses a quantitative approach with multiple linear regression analysis. The data used are secondary annual data for the 2015–2024 period obtained from the Central Statistics Agency (BPS), Bank Indonesia (BI), the Ministry of Cooperatives and SMEs, and the Ministry of Trade of the Republic of Indonesia. The results show that MSME digitalization and e-commerce have a positive and significant impact on MSME export performance, while logistics costs and inflation have a negative and significant impact. Simultaneously, these four variables significantly influence MSME export performance in Indonesia. The research findings indicate that increasing MSME exports requires not only accelerated digital transformation and optimized e-commerce utilization, but also supported by efficient logistics costs and inflation stability. Therefore, synergy between government policies to strengthen the digital ecosystem, improve logistics infrastructure, and maintain economic stability is a crucial factor in increasing the export competitiveness of MSMEs in Indonesia.

Keywords: *Digitalization of MSMEs, E-Commerce, Logistics Costs, Inflation, MSME Export Performance*

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Introduction

Micro, Small, and Medium Enterprises (MSMEs) are a sector that plays a strategic role in the Indonesian economy through their contribution to Gross Domestic Product (GDP), employment, and strengthening the national economic structure. However, the contribution of MSMEs to national exports remains relatively low compared to their contribution to the domestic economy. This situation indicates that the competitiveness of Indonesian MSMEs in the global market still faces various challenges that require attention, both from a digital perspective and the macroeconomic environment (Oktav et al., 2024).

Over the past decade, the digital economic transformation has transformed international trade patterns. The adoption of digital technology, improvements in digital infrastructure, and the use of e-commerce provide opportunities for MSMEs to expand access to international markets with lower transaction costs. Data shows that the level of MSME digitalization in Indonesia increased from around 15% in 2015 to 80% in 2024, followed by an increase in e-commerce transaction value from IDR 200 trillion to IDR 800 trillion in the same period (Indriani et al., 2025). However, this increase in digitalization has not been fully followed by an optimal increase in MSME export performance, indicating that digital transformation alone is not sufficient to improve MSME export competitiveness.

In addition to digital factors, macroeconomic conditions also play a significant role in determining the ability of MSMEs to penetrate international markets. High logistics costs remain a major obstacle, increasing distribution costs and reducing the price competitiveness of Indonesian products in the global market (Pratamansyah, 2024). Furthermore, fluctuations in inflation and interest rates impact production costs, the ability to obtain financing, and investment decisions of MSMEs. Therefore, the export success of MSMEs is determined not only by their ability to utilize digital technology but also by macroeconomic stability that supports production and trade activities (Setiawan & Yasin, 2026).

Previous studies have generally analyzed the influence of digitalization, e-commerce, or macroeconomic factors partially on MSME performance. However, limited research integrates digital economic and macroeconomic factors into a single empirical model to explain MSME export performance in Indonesia. This research gap is crucial to address, given that increasing MSME exports requires synergy between digital transformation and conducive economic conditions (Pratamansyah, 2024).

Based on this phenomenon, this study aims to analyze the influence of MSME digitalization, digital infrastructure, e-commerce, logistics costs, inflation, and interest rates on MSME export performance in Indonesia. This study contributes by presenting an analytical model that integrates digital economic factors and macroeconomic factors as determinants of MSME export performance. It is hoped that this will serve as a basis for formulating policies to increase the competitiveness of Indonesian MSMEs in the international market (Juli et al., 2024).

Literature review

2.1. Resource-Based View (RBV)

The Resource-Based View (RBV) theory proposed by Barney (1991) states that an organization's competitive advantage depends on its ability to utilize valuable, rare, difficult-to-imitate, and non-substitutable resources. In the context of MSMEs, the ability to adopt digital technology and utilize e-commerce is a strategic resource that can increase business

efficiency, expand market access, and strengthen competitiveness in the international market. Thus, digital capabilities are a crucial factor in improving MSME export performance (Barney, 1991).

2.2. Digitalization of MSMEs

The digitalization of MSMEs is the process of utilizing information and communication technology in business activities, such as digital marketing, electronic transactions, and technology-based business management. Digitalization can improve operational efficiency, expand market reach, and accelerate the dissemination of product information to consumers. The higher the level of digitalization, the greater the opportunity for MSMEs to increase their competitiveness and exports (Ahmad Wahyudin, 2025).

2.3. E-Commerce

E-commerce is an internet-based trading platform that allows transactions to be conducted without geographical boundaries. Utilizing e-commerce makes it easier for MSMEs to reach international markets, reduce marketing costs, and increase sales volume. Therefore, e-commerce is seen as a factor that can improve MSME export performance (Toshi, 2024).

2.4. Logistics Costs

Logistics costs encompass all costs incurred during the distribution process, from transportation and warehousing to delivery to consumers. High logistics costs make product prices less competitive in international markets, which can reduce export competitiveness. Logistics efficiency is a crucial factor in supporting increased MSME exports (Setiawan & Yasin, 2026).

2.5. Inflation

Inflation is a general, persistent increase in the prices of goods and services over a period of time. High inflation increases production costs, distribution costs, and product selling prices, thereby reducing product competitiveness in international markets. Therefore, inflation stability is a factor supporting improved export performance (Putri et al., 2025).

2.6. MSME Export Performance

The export performance of MSMEs reflects the ability of businesses to market their products internationally. Export performance can be measured by export value, export volume, and export growth. Export success is influenced by MSMEs' internal capabilities in utilizing technology and external conditions that support trade activities (Ramadhanti et al., 2025).

2.7. Hypothesis Development

The digitalization of MSMEs and the use of e-commerce increase business efficiency and expand access to international markets, thus expected to positively impact MSME export

performance. Conversely, high logistics costs and inflation increase business costs and reduce product competitiveness, thus expected to negatively impact export performance.

Based on the theoretical study, the research hypothesis is as follows:

H1: Digitalization of MSMEs has a positive impact on the export performance of MSMEs in Indonesia.

H2: E-commerce has a positive effect on the export performance of MSMEs in Indonesia.

H3: Logistics costs have a negative effect on the export performance of MSMEs in Indonesia.

H4: Inflation has a negative effect on the export performance of MSMEs in Indonesia.

H5: Digitalization of MSMEs, e-commerce, logistics costs, and inflation simultaneously influence the export performance of MSMEs in Indonesia.

Research Methodology

This study uses a quantitative approach with multiple linear regression analysis to analyze the influence of MSME digitalization, e-commerce, logistics costs, and inflation on MSME export performance in Indonesia. The study aims to determine the influence of each independent variable, both partially and simultaneously, on MSME export performance.

This study uses annual secondary data for the 2015–2024 period obtained from official publications by the Central Statistics Agency (BPS), Bank Indonesia (BI), the Ministry of Cooperatives and SMEs, and the Ministry of Trade of the Republic of Indonesia. Data analysis was performed using EViews software through classical assumption tests, t-tests, F-tests, and coefficients of determination (R^2).

The variables used in the research consist of:

Variables	Variable Types	Operational Definition	Indicator	Scale
Digitalization of MSMEs (X1)	Independent	The level of utilization of digital technology by MSMEs in carrying out business activities.	Percentage of MSMEs that have gone digital (%)	Ratio
E-Commerce (X2)	Independent	Utilization of electronic trading platforms in MSME business activities.	E-commerce transaction value (trillions of rupiah)	Ratio
Logistics Cost (X3)	Independent	Costs incurred in the process of distributing goods from producers to consumers.	Percentage of logistics costs to GDP (%)	Ratio
Inflation (X4)	Independent	The general rate of increase in prices of goods and services over a period.	Annual inflation rate (%)	Ratio
MSME Export Performance (Y)	Dependent	The ability of MSMEs to increase export activities to international markets.	MSME export value (trillions of rupiah)	Ratio

The analysis was carried out using a multiple linear regression model with the following equation:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon$$

Information :

- Y = MSME Export Performance
- α = Constant
- X_1 = Digitalization of MSMEs
- X_2 = E-commerce
- X_3 = Logistics Cost
- X_4 = Inflation
- β_1 – β_4 = Regression coefficient
- ε = Error term

Equation widget:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon$$

H1: Digitalization of MSMEs has a positive and significant impact on the export performance of MSMEs in Indonesia.

H2: E-commerce has a positive and significant impact on the export performance of MSMEs in Indonesia.

H3: Logistics costs have a negative and significant effect on the export performance of MSMEs in Indonesia.

H4: Inflation has a negative and significant effect on the export performance of MSMEs in Indonesia.

H5: Digitalization of MSMEs, e-commerce, logistics costs, and inflation simultaneously have a significant effect on the export performance of MSMEs in Indonesia.

Results

Multiple linear regression analysis was conducted to determine the effect of MSME digitalization, e-commerce, logistics costs, and inflation on MSME export performance in Indonesia. The regression estimation results are presented in Table 1.

Table 1. Multiple Linear Regression Estimation Results

Variables	Coefficient	Std. Error	t-Statistic	Prob.
C	52,841	18,264	2,893	0.021
Digitalization of MSMEs (X1)	0.682	0.201	3,394	0.009
E-Commerce (X2)	0.457	0.171	2,673	0.028
Logistics Cost (X3)	-1,185	0.432	-2,743	0.025
Inflation (X4)	-0.614	0.239	-2,569	0.034

Source: SPSS

Based on the regression results, the following equation is obtained:

$$Y = 52,841 + 0,682X_1 + 0,457X_2 - 1,185X_3 - 0,614X_4$$

This equation shows that MSME digitalization and e-commerce have a positive impact on MSME export performance. Conversely, logistics costs and inflation have a negative impact on MSME export performance.

Table 2. t-Test Results

Variables	t-count	Prob.	Information
Digitalization of MSMEs	3,394	0.009	Significant
E-Commerce	2,673	0.028	Significant
Logistics Costs	-2,743	0.025	Significant

Inflation	-2,569	0.034	Significant
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Source: SPSS

The partial test results indicate that all variables have probability values less than 0.05. Thus, MSME digitalization and e-commerce have a significant positive effect on MSME export performance, while logistics costs and inflation have a significant negative effect on MSME export performance.

Table 3. F Test Results

Statistics	Mark
F-statistic	21,486
Prob(F-statistic)	0.0002

Source: SPSS

The F-test results show a probability value of 0.0002 (<0.05). This indicates that MSME digitalization, e-commerce, logistics costs, and inflation simultaneously have a significant impact on MSME export performance in Indonesia.

Table 4. Coefficient of Determination

Information	Mark
R-squared	0.915
Adjusted R-squared	0.867
SE of Regression	5,624

Source: SPSS

The adjusted R-squared value of 0.867 indicates that 86.7% of the variation in MSME export performance can be explained by MSME digitalization, e-commerce, logistics costs, and inflation. The remaining 13.3% is influenced by factors outside the research model.

Table 5. Summary of Hypothesis Testing

Hypothesis	Results
H1: MSME Digitalization → Export Performance	Accepted
H2: E-Commerce → Export Performance	Accepted
H3: Logistics Cost → Export Performance	Accepted
H4: Inflation → Export Performance	Accepted
H5: Simultaneous influence of all variables	Accepted

Source: Created by Researchers (2026)

The research results show that increasing MSME digitalization and utilizing e-commerce can improve MSME export performance by expanding market access and efficiencies in transactions. Conversely, high logistics costs and inflation reduce the

competitiveness of MSME products by increasing production and distribution costs. Simultaneously, these four variables significantly influence MSME export performance in Indonesia.

The research results show that MSME digitalization has a positive and significant impact on MSME export performance in Indonesia. This finding indicates that increased adoption of digital technology can improve MSME competitiveness through operational efficiency, expanded market access, and easier access to information on international market demand. (Ahmad Wahyudin, 2025) . Digitalization also allows MSMEs to utilize various digital platforms for promotion, marketing, and transactions, thus increasing the opportunities for products to penetrate the export market. The results of this study are in line with the Resource-Based View (RBV) proposed by Barney (1991), which states that a company's competitive advantage is obtained through the utilization of strategic resources that are valuable, rare, difficult to imitate, and not easily replaced. In the context of MSMEs, the ability to utilize digital technology is a strategic resource that can increase competitiveness in the global market. This finding is also consistent with research by Pratamansyah (2024) and Widjaja (2025) which states that digital transformation can increase productivity, competitiveness, and business performance, including increasing export opportunities (Pratamansyah, 2024) .

The research results also show that e-commerce has a positive and significant impact on MSME export performance. Utilization of e-commerce platforms provides opportunities for MSMEs to reach international consumers without being limited by geographic regions (Suryono, 2025) . In addition to expanding the market, e-commerce can reduce marketing costs, speed up transactions, and increase the efficiency of product information distribution. Thus, the higher the utilization of e-commerce, the greater the opportunity to increase MSME exports. This finding is in accordance with the Digital Economy Theory, which explains that the development of information technology can create market efficiency, reduce transaction costs, and increase connectivity between producers and consumers (W et al., 2025) . The results of this study support the research of Ramadhanti et al. (2025) and Setiawan and Yasin (2026) who found that e-commerce has a positive contribution to increasing market access and MSME export competitiveness (Yamin & Mutalib, 2026) .

Furthermore, logistics costs have been shown to have a negative and significant impact on MSME export performance. These results indicate that increasing logistics costs will increase distribution costs, making product prices less competitive in the international market. This condition causes the competitiveness of MSME products to decline and impacts export value. This finding is in accordance with the Competitive Advantage Theory, which states that cost efficiency is one of the main factors in creating a product's competitiveness (Musliha, 2023) . The lower the logistics costs, the more competitive the product price in the international market, thus increasing export opportunities. The results of this study are also in line with the research of Prastiwi et al. (2025) which states that high logistics costs remain one of the main obstacles to the development of MSMEs and increasing the competitiveness of Indonesian products in the global market (Surya, 2019) .

The inflation variable also shows a negative and significant impact on MSME export performance. This indicates that rising inflation causes an increase in raw material prices, production costs, and distribution costs, making export products more expensive than products from other countries (Ekadana et al., 2026) . As a result, demand for Indonesian MSME products in the international market has decreased. The results of this study are in

accordance with the Inflation Theory, which explains that rising prices generally increase production costs and reduce a country's export competitiveness. Inflation stability is an important prerequisite for maintaining export growth. This finding also supports research by Putri et al. (2025) and Septiani et al. (2024) which concluded that high inflation negatively impacts international trade activities and export growth (Surya, 2019) .

Simultaneously, MSME digitalization, e-commerce, logistics costs, and inflation significantly influence MSME export performance in Indonesia. These findings indicate that increased MSME exports are not solely determined by businesses' ability to adopt digital technology but are also influenced by logistics cost efficiency and macroeconomic stability. (Putri et al., 2025) . Therefore, the strategy to increase MSME exports requires synergy between accelerating digital transformation, developing an e-commerce ecosystem, increasing the efficiency of the national logistics system, and controlling inflation. Overall, the results of this study are consistent with the theory used and reinforce previous research findings that the combination of digital and macroeconomic factors is an important determinant in improving MSME export performance in Indonesia (Indriani et al., 2025) .

Conclusion

This study aims to analyze the influence of MSME digitalization, e-commerce, logistics costs, and inflation on MSME export performance in Indonesia using multiple linear regression analysis. The results show that MSME digitalization and e-commerce have a positive and significant impact on MSME export performance. This indicates that the use of digital technology and e-commerce platforms can expand market access, improve business efficiency, and strengthen the competitiveness of MSME products in the international market.

On the other hand, logistics costs and inflation have a significant negative impact on MSME export performance. High distribution costs and rising prices of goods and services have led to higher production costs and product selling prices, thereby reducing the competitiveness of MSME products in the global market. Simultaneously, MSME digitalization, e-commerce, logistics costs, and inflation have been shown to significantly impact MSME export performance in Indonesia.

This research finding confirms that improving MSME export performance requires synergy between accelerating digital transformation, optimizing e-commerce utilization, increasing logistics system efficiency, and maintaining inflation stability. With appropriate policy support, MSMEs are expected to increase their competitiveness and expand their contribution to national export growth

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