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The Role of E-Commerce Adoption in Driving Business Growth of Micro MSMEs: Evidence from Semarang City

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Abstract

Micro, Small, and Medium Enterprises (MSMEs) in Indonesia are currently the backbone of the national economy, contributing 61.07% to the national gross domestic product (GDP) and absorbing 97% of the workforce. Digitalization has become one of the keys to MSME growth. Many micro-enterprise actors are keeping up with technological developments by expanding their businesses through the use of technology, one of which is utilizing e-commerce. This study is an explanatory research. The population consists of micro MSMEs in the city of Semarang, with a total sample of 41 respondents. Data collection was carried out by distributing questionnaires via Google Forms. The results of the study indicate a significant influence of e-commerce adoption on business growth.

Keywords:e-commerce adoption, business growth, micro MSMEs

INTRODUCTION

Micro, Small, and Medium Enterprises (MSMEs) in Indonesia are the backbone of the national economy, contributing 61.07% to the Gross Domestic Product (GDP) (BPS, 2023) and employing up to 97% of the workforce (Ministry of Cooperatives and SMEs, 2024). In 2024, the number of MSMEs in Indonesia reached 65.5 million units, of which 98% are micro-enterprises. These figures highlight the strategic role of MSMEs in driving national economic growth, as well as the importance of developing and enhancing the competitiveness of this sector.

Business growth, according to Zimmerer & Scarborough (2008), is a phenomenon that occurs when business owners, employees, and external factors seek ways to

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improve the success of a business. Business success is achieved when the company's objectives are met, influenced by factors such as economic conditions, social and cultural aspects, resource availability, and family support.

E-commerce, as defined by Nurhadi (2015), refers to business activities conducted electronically through computer networks to meet trading and information exchange needs in a digital format. E-commerce adoption is the process of integrating e-commerce technology into MSME operations, both through hardware and software. Business success can be measured by indicators such as increased capital, production volume, customer base, business expansion, market area growth, improvement of physical facilities, and revenue growth (Benedicta Prihatin Dwi, 2003).

A study by Ananda Putri Harfie and Anies Lastiati (2022) found that e-commerce adoption has a positive and significant effect on MSME performance. However, this finding contrasts with research conducted by Frialdo Etanim, which reported that the use of e-commerce had no significant effect on MSME performance.

Research Problem

Based on the above explanation, the research problem in this study is: "How does e-commerce adoption influence business growth among micro-MSMEs in Semarang City?"

This research formulates the research question as follows:

1. Can e-commerce adoption influence the business growth among micro-MSMEs in Semarang City?
2. How significant is the influence of e-commerce adoption on the Business growth of micro-MSMEs in Semarang City?

E-Commerce Adoption

Electronic Commerce (e-commerce) is a modern concept that can be described as the process of buying and selling goods or services over the World Wide Web, or the process of trading or exchanging products, services, and information through information networks, including the internet. According to Kotler and Armstrong (2012), e-commerce refers to an online network accessed via gadgets or computers, utilized by business owners to carry out their business activities in order to obtain and provide information. This process begins with delivering information to consumers, enabling them to make informed decisions about which products or services to purchase. E-commerce adoption,

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as defined by Nurhadi (2015), is the process of integrating e-commerce technology into MSMEs through the use of both hardware and software.

Indicators of e-commerce adoption are (Sawlani et al., 2021):

- Internet Access
- Ease of Information
- Human Resource Capability
- Managerial Responsibility

Business Growth

Business success is an essential component of a company, as all business activities are ultimately aimed at achieving it. Business success refers to the condition in which a business or enterprise has reached its intended goals or targets. Business growth is a phenomenon that occurs when business owners, employees, and other external factors seek ways to enhance and improve the overall performance and experience of the business.

Business growth refers to an increase in the scale of a company's operations. Indicators of business growth include:

- Production
  The company produces more output due to an increase in production capacity.
- Sales and Profit
  The company sells more goods, contributing positively to increased revenue and profit.
- Number of Employees
  As the company grows, it needs more workers.
- Number of Customers
  If the number of customers increases, the company can sell more products and be encouraged to increase production.
- Company Value
  For public companies, growing companies see their share prices rise, increasing market capitalization.

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RESEARCH METHODS

The type of research conducted in this study is explanatory research and it adopts a quantitative approach. The survey data were collected using Google Forms.

Population and Sample

The population of this study consisted of micro-enterprises (Micro UMKM) in Semarang City. The sampling technique applied was purposive sampling, with specific criteria for sample selection. First, the micro-enterprises had to be actively operating in Semarang City. Second, they needed to utilize e-commerce as part of their business operations. Third, the respondents had to be willing to complete the questionnaire. Based on these criteria, a total of 41 respondents were obtained for the study.

Data Analysis Method

The testing of the model and hypotheses in this study was conducted using multiple regression equation analysis to examine the relationship between the independent variable, e-commerce adoption, and the dependent variable, business growth. The analysis involved the t-test to determine the partial significance of the independent variable by comparing the calculated t-value with the critical t-value at a 0.05 significance level, as well as the coefficient of determination test (Adjusted R^2) to assess the proportion of variance in business growth explained by e-commerce adoption, adjusted for the number of predictors. This method provided a thorough evaluation of the effect of e-commerce adoption on the business growth of micro-enterprises (Mikro UMKM) in Semarang City.

Validity Test

The validity test is used to measure the validity or legitimacy of a questionnaire (Ghozali, 2014). The validity calculation resulted in (df) = 39, so the table value of r with (df) = 41 at a significance level of 5% is 0.2605.

1. Validation Test of E-Commerce Adoption Variable

Table 1 Validation Test of E-Commerce Adoption Variable

Variable	Indicator	Statement	r_{value}	r_{table}	Expl.
E	Internet Access	E1	0,774	0,2605	VALID
		E2	0,788	0,2605	VALID

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Variable	Indicator	Statement	r_{value}	r_{table}	Expl.
		E3	0,693	0,2605	VALID
	Ease of Information	E4	0,797	0,2605	VALID
		E5	0,816	0,2605	VALID
		E6	0,838	0,2605	VALID
	Human Resource Capability	E8	0,816	0,2605	VALID
		E9	0,728	0,2605	VALID
	Managerial Responsibility	E10	0,757	0,2605	VALID
		E11	0,705	0,2605	VALID

Source: Processed Primary Data, 2025

"Table 1 indicates that each item of the E-Commerce Adoption variable has a calculated $r_{value} > r_{table}$, thus indicating that all items of questions are valid.

2. Validation Test of Business Growth Variable

Table 2 Validation Test of Business Growth Variable

Variable	Indicator	Statement	r_{value}	r_{table}	Expl.
UB	Production	UB1	0,710	0,2605	VALID
		UB2	0,672	0,2605	VALID
	Sales and Profit	UB3	0,757	0,2605	VALID
		UB4	0,714	0,2605	VALID
		UB5	0,796	0,2605	VALID
		UB6	0,751	0,2605	VALID
	Number of Employees	UB7	0,649	0,2605	VALID
		UB8	0,720	0,2605	VALID
	Number of Customers	UB9	0,543	0,2605	VALID
		UB10	0,581	0,2605	VALID
		UB11	0,766	0,2605	VALID
	Company Value	UB12	0,686	0,2605	VALID
		UB13	0,682	0,2605	VALID
		UB14	0,678	0,2605	VALID

Source: Processed Primary Data, 2025

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Table 2 indicates that each item of the Business growth variable has a calculated $r_{value} > r_{table}$, thus indicating that all items of questions are valid.

Reliability Test

A questionnaire is considered reliable if an individual's responses to statements are consistent or stable over time (Ghozali, 2014). A construct or variable is considered reliable if it yields a Cronbach's Alpha value > 0.70.

Table 3 Reliability Test Results

Variable	*Cronbach's Alpha*	*Alpha Value*	*Expl.*
E-Commerce Adoption	0,924	0,70	RELIABEL
Business Growth	0,914	0,70	RELIABEL

Source: Processed Primary Data, 2025

Table 3 shows that the Cronbach's Alpha of each variable is greater than 0.70, indicating that all questionnaire items in this study are considered reliable or trustworthy.

RESULTS AND DISCUSSSION

The t statistical test essentially indicates how far the influence of one explanatory or independent variable individually explains variations in the dependent variables (Ghozali, 2014). When observed in the t-table with a significance level of 0.05 and degrees of freedom (df) = n-2 = 41-2 = 39, the obtained t-table value is 1.685. Based on the obtained t-table value of 1.685, the decision-making criteria for the t-test are as follows:

1. If the calculated t-value < table t-value or the significance value > 0.05, then H0 is accepted or Ha is rejected.
2. If the calculated t-value > table t-value or the significance value < 0.05, then H0 is rejected or Ha is accepted.

The results of the t-test in this study regarding e-commerce adoption on business growth are presented in Table 4 as follows:

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Table 4 The Results of Business Growth t-Test

Variable	t_{value}	t_{table}	Sig. Value
E-Commerce Adoption	8,034	1,685	0,000

Source: Processed Primary Data, 2025

The results of the t-test in Table 4 indicate that the e-commerce adoption variable has a t-value of 8.034, which is greater than the t-table value of 1.685, with a significance level of 0.000, which is less than 0.05. Based on the t-test decision criteria, Ha is accepted and H0 is rejected. Therefore, it can be concluded that the e-commerce adoption variable has a significant influence on business growth among micro-enterprises (Micro UMKM) in the city of Semarang.

The results of the coefficient of determination regarding the influence of e-commerce adoption on Business growth can be seen in the following Table 5:

Table 5 The Results of the Coefficient of Determination Test for Business Growth

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,790[a]	,623	,614	,57141

a. Predictors: (Constant), E-Commerce Adoption

b. Dependent Variable: Business growth

Source: Processed Primary Data, 2025

Table 5 shows that the Adjusted R Square value is 0,614 or 61,4%, which means that 61,4% of Business growth is influenced by the e-commerce adoption variable, while the remaining 38,6% is influenced by other variables.

The results of the conducted test indicate a positive and significant influence between e-commerce adoption and business growth of micro-enterprises (Micro UMKM) in the city of Semarang. The greater e-commerce adoption micro-enterprises (Micro UMKM) in the city of Semarang, the greater the business growth obtained, with a percentage influence of 61,4%. This result indicates that e-commerce adoption is also a critical factor in business growth.

The results of this study align with those of Ananda Putri Harfie and Anies Lastiati (2022) found that e-commerce adoption has a positive and significant effect on MSME

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performance. However, this finding contrasts with research conducted by Frialdo Etanim, which reported that the use of e-commerce had no significant effect on MSME performance.

CONCLUSION

The conclusion of this study, based on the responses of 41 participants, shows that the calculated t-value was greater than the critical t-value, with a significance level below 0.05. This indicates that e-commerce adoption has a significant effect on business growth, with the magnitude of influence reaching 61.4%. Business success is a core aspect of any company, as all business activities are ultimately directed toward achieving it. Business growth is a phenomenon that occurs when business owners, employees, and other external factors continuously seek ways to enhance the overall performance and experience of the enterprise.

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