

The Effect of E-Commerce Platform Use on the Income of Micro, Small, and Medium Enterprises: A Case Study of Ornamental-Plant Businesses in Pekalongan

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Abstract

This study analyses the effect of e-commerce platform use on the income of ornamental-plant micro, small, and medium enterprises (MSMEs) in Pekalongan District, East Lampung. The growth of digital technology and e-commerce offers significant opportunities for MSMEs, yet the contribution of e-commerce to the income of ornamental-plant enterprises remains under-examined. A quantitative associative method was applied, with a census sample of 20 ornamental-plant MSMEs. Data were collected using a Likert-scale questionnaire that was tested for validity and reliability, and were analysed using simple linear regression in SPSS, preceded by classical assumption tests of normality, linearity, and homogeneity. The results show that e-commerce use has a positive and significant effect on the income of ornamental-plant MSMEs, with a t-value of 4.619 exceeding the critical value and a significance below 0.05, and it explains 54.2 percent of the variance in income. The most influential aspects of e-commerce were ease of access and time efficiency in transactions and the security of and trust in electronic transactions. The study concludes that optimising e-commerce raises MSME income and provides a reference for MSMEs and local governments pursuing business digitalisation. Because the study is based on a small census of a single sub-district, the results should be interpreted with caution.

Keywords: *E-commerce; Income; MSMEs; Ornamental plants; Business digitalisation*

1. Introduction

In Indonesia, the use of internet technology and social-media platforms has grown significantly and now affects many aspects of life, including the economy. By using internet technology, business actors can conduct activities electronically, promote and introduce products to consumers, and thereby drive the growth of electronic commerce (e-commerce). E-commerce provides security and convenience in transactions, reduces costs, conveys detailed product and price information online, and enables enterprises to compete with similar businesses and achieve better results, with the effect of increasing income and broadening customer reach (Rahayu & Day, 2015; Savrul et al., 2014).

The development of micro, small, and medium enterprises (MSMEs) has been facilitated by advances in information and telecommunications technology. Through e-commerce systems, MSMEs can enter wider and even real-time markets, with the internet a favoured channel because of its convenience (Abebe, 2014; Jahanshahi et al., 2013). Electronic commerce offers short- and long-term benefits, opening new markets, reaching new consumers, and simplifying the conduct of business, with benefits for consumers and society more broadly.

MSMEs are distributed throughout Indonesia, including Lampung Province, where their numbers grew by around nine to ten percent between 2020 and 2022. East Lampung Regency had more than 232,800 MSMEs in 2022, with each village producing its own leading products. Among the businesses favoured in Pekalongan District is ornamental-plant agribusiness; the district is a major supplier of ornamental plants that distributes products across Indonesia at competitive prices, supported by the strategic location of Lampung near Jakarta and good transport infrastructure.

Prior studies report that e-commerce adoption raises MSME sales and income, although evidence specific to agribusiness and ornamental-plant enterprises in smaller districts remains limited (Chatterjee & Kar, 2020; Effendi et al., 2020; Tambunan, 2019). This study addresses that gap by examining the effect of e-commerce platform use on the income of ornamental-plant MSMEs in Pekalongan.

Accordingly, this study analyses the effect of e-commerce platform use on the income of ornamental-plant MSMEs. The study contributes to the literature on MSME digitalisation in agribusiness and provides a reference for MSMEs and local governments. The objective is to analyse the effect of e-commerce use on MSME income.

2. Literature Review and Theoretical Framework

2.1 Theoretical Foundation

E-commerce is a form of trade conducted electronically through the internet, encompassing types such as business-to-business, business-to-consumer, and consumer-to-consumer, in which the exchange of goods and information occurs across digital platforms (Chaffey, 2022). For MSMEs, e-commerce reduces transaction costs, expands market reach, and improves competitiveness, and its adoption is associated with improved enterprise performance (Abebe, 2014; Rahayu & Day, 2015).

Income is the reward received by the factors of production, such as labour, land, and capital, for their involvement in producing goods or services, and it reflects the results of business activity. In the digital context, e-commerce adoption is expected to raise MSME income by widening markets and improving efficiency (Jahanshahi et al., 2013; Savrul et al., 2014). MSME digitalisation is shaped by technological, organisational, and environmental factors and contributes to enterprise growth in developing countries (Chatterjee & Kar, 2020; Qalati et al., 2022).

2.2 Hypothesis Development

Drawing on e-commerce-adoption theory and prior evidence, the use of e-commerce platforms is expected to raise MSME income through wider market reach, lower costs, and improved efficiency and trust (Abebe, 2014; Rahayu & Day, 2015). The hypothesis is therefore:

H1: E-commerce platform use has a positive and significant effect on the income of ornamental-plant MSMEs.

3. Research Methodology

3.1 Research Design

This study employed a quantitative associative design, grounded in a positivist approach, to test the effect of e-commerce platform use on MSME income. The study was conducted in Pekalongan District, East Lampung, with ornamental-plant MSMEs as the subjects and e-commerce platforms, such as Shopee, TikTok Shop, Lazada, and Tokopedia, as the object.

3.2 Data Collection

The population comprised all ornamental-plant MSMEs in Pekalongan District, and a census (saturated) sampling technique was applied, yielding 20 respondents. Data were collected through a five-point Likert-scale questionnaire and direct observation, and the instrument was tested for validity and reliability.

3.3 Data Analysis

Data were analysed using simple linear regression in SPSS, preceded by normality, linearity, and homogeneity tests. Hypothesis testing was conducted through the partial t-test and the coefficient of determination.

4. Results and Discussion

4.1 Results

The classical assumption tests, summarised in Table 1, confirmed that the data met the required conditions: the residuals were normally distributed, the relationship was linear, and the variances were homogeneous.

Table 1. Classical assumption test results

Test	Significance	Conclusion
Normality (K-S)	0.892	Normal
Linearity (deviation)	0.737	Linear
Homogeneity (Levene)	0.147	Homogeneous

Source: Primary data processed with SPSS, 2026

The simple linear regression results are presented in Table 2. The estimated equation is $Y = 15.155 + 0.838X$. E-commerce use recorded a t-value of 4.619, exceeding the critical value of 1.72, with a significance below 0.05, so H1 is supported.

Table 2. Simple linear regression coefficients

Model	B	Std. Error	t / Sig.
(Constant)	15.155	16.515	0.918 / 0.371
E-commerce use (X)	0.838	0.181	4.619 / 0.000

Source: Primary data processed with SPSS, 2026. Dependent variable: MSME income.

The coefficient of determination, summarised in Table 3, is 0.542, indicating that e-commerce use explains 54.2 percent of the variance in MSME income, while the remaining 45.8 percent is attributable to other factors not examined in this study.

Table 3. Coefficient of determination

Statistic	Value	Conclusion
R	0.737	-
R-squared	0.542	54.2% explained
Adjusted R-squared	0.517	-

Source: Primary data processed with SPSS, 2026

4.2 Discussion

The positive and significant effect of e-commerce use on MSME income supports H1 and indicates that adopting e-commerce platforms raises the income of ornamental-plant enterprises. The most influential aspects were ease of access and time efficiency in transactions and the security of and trust in electronic transactions, suggesting that convenience and trust are the key mechanisms through which e-commerce delivers value to small enterprises. This finding is consistent with research

showing that e-commerce adoption improves SME sales and performance through wider reach, lower costs, and greater efficiency (Abebe, 2014; Rahayu & Day, 2015; Savrul et al., 2014).

With a coefficient of determination of 54.2 percent, e-commerce use explains a substantial share of the variance in income, while the remainder reflects other factors such as product quality, pricing, capital, and digital literacy. Theoretically, the study reinforces the relevance of e-commerce adoption for MSME income in agribusiness, while practically it implies that ornamental-plant enterprises should optimise platform features, particularly transaction convenience and trust, and that local governments should support digitalisation through training and infrastructure.

5. Conclusion

This study examined the effect of e-commerce platform use on the income of ornamental-plant MSMEs in Pekalongan District, East Lampung. E-commerce use has a positive and significant effect on MSME income, explaining 54.2 percent of its variance, with ease of access, time efficiency, security, and trust as the most influential aspects. The study concludes that optimising e-commerce raises the income of ornamental-plant enterprises.

The study recommends that ornamental-plant MSMEs optimise the use of e-commerce platform features, particularly transaction convenience and trust, and that local governments support digitalisation through training, infrastructure, and access to markets. The principal limitation is the small census sample of 20 enterprises in a single sub-district, which constrains generalisability; future research should use larger and more diverse samples, incorporate additional variables such as digital literacy, capital, and product quality, and adopt comparative designs across regions.

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