

Exploring e-Commerce Potential: Improving Sales Performance Through Product Innovation in the Agriculture Sector

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ABSTRACT

This study explores the impact of e-commerce on sales performance, mediated by innovation, among agricultural business entrepreneurs in Polewali Mandar, West Sulawesi Province. Utilizing a quantitative research design, data were collected from 97 agricultural entrepreneurs who have adopted technology in their sales processes. The study employed WarpPLS 8.0 for data analysis to test the hypothesized relationships between e-commerce, innovation, and sales performance. Results indicate that e-commerce significantly enhances sales performance both directly (path coefficient = 0.727, $p < 0.001$) and through innovation (path coefficient = 0.207, $p = 0.001$). Additionally, e-commerce positively impacts innovation (path coefficient = 0.901, $p < 0.001$), and innovation itself significantly boosts sales performance (path coefficient = 0.230, $p < 0.001$). These findings corroborate prior research, underscoring the importance of effective resource management, strategic goal alignment, and employee competencies in improving sales outcomes. Advanced technologies, such as machine learning, further enhance businesses' ability to predict and optimize sales strategies. For agribusiness entrepreneurs in Polewali Mandar, the study highlights the necessity of embracing digital transformation. Despite initial scepticism, the integration of e-commerce platforms and innovative marketing strategies can expand market reach, improve operational efficiency, and build consumer trust. This research provides practical recommendations for leveraging digital technologies to drive growth and profitability. By focusing on consistent and relevant digital content, agribusinesses can overcome barriers and achieve sustainable competitive advantages. The findings underscore the critical role of digital and technological innovations in fostering business success in the agricultural sector.

INTRODUCTION

Sales performance is a critical metric for business success, encompassing factors such as effective resource management, strategic goal alignment, and employee competency. Key Performance Indicators (KPIs) are widely used to measure and improve sales activities and ensure they align with organizational goals. (Shcherbyna, 2023) Both objective metrics, such as sales volume, and subjective evaluations, such as customer satisfaction, play important roles in assessing performance. (Kerr & Marcos-Cuevas, 2022). Employee factors, including self-efficacy and emotional intelligence, significantly impact sales outcomes, with higher levels correlating with improved performance (Musau, 2023). (Musau, 2023). The integration of advanced technologies, such as machine learning algorithms, further enhances the ability to predict and optimize sales strategies (Wang & Aviles, 2023). As businesses continue to evolve, these elements collectively highlight the importance of a comprehensive approach to improving sales performance, particularly in the rapidly growing e-commerce sector. (Kadam et al., 2023).

E-commerce has revolutionized the digital marketing paradigm by providing a wider and more efficient platform for businesses to reach consumers. Through digital technology, companies can leverage data analytics to understand consumer behavior and optimize their marketing strategies. (Sihare, 2022;

Turchyn & Kunešová, 2022). The use of advanced algorithms and machine learning enables more accurate personalization of content and product offerings. (Kyaw et al., 2023).. In addition, e-commerce platforms support direct interaction between sellers and buyers, enhancing customer experience and brand loyalty (Kim et al., 2023). (Kim et al., 2023). The integration of social media with e-commerce significantly increases consumer visibility and engagement, which in turn drives an increase in sales conversion rates (Jallouli & Kaabi, 2022). These developments show how e-commerce serves not only as a sales channel but also as a strategic tool in modern digital marketing (Azaryan & Makhnonosov, 2023)..

Innovation plays a critical role in driving business growth and competitiveness by enabling companies to develop new products, improve processes, and increase customer satisfaction. The adoption of product and process innovation significantly improves the performance of small and medium-sized enterprises (SMEs), driving market competitiveness and operational efficiency. (Naveen & Nair, 2023). In the banking sector, innovations such as internet banking and standalone cash accounts positively impact financial performance by improving operational efficiency and customer access to services (Fareed et al., 2015). (Fareed et al., 2023).. In addition, the integration of technological and organizational innovations has been shown to improve productivity and sales performance (Domnich, 2022). (Domnich, 2022). These examples highlight how innovation is directly linked to improved sales performance, demonstrating its important role in maintaining competitive advantage and achieving business growth. (Ahmad, 2022).

Indonesia is an agrarian country where agriculture plays an important role in the economy and livelihoods of its people. As a country rich in natural resources, Indonesia has significant potential in agricultural production, including commodities such as rice, coffee, cocoa and palm oil. To fully realize this potential, the adoption of innovative technologies, particularly in marketing, is essential. The application of information and communication technology (ICT) in agricultural marketing can improve distribution efficiency, expand market reach, and increase price transparency (Jia et al., 20). (Jia et al., 2023). Innovations such as e-commerce platforms and mobile applications for agricultural transactions can help farmers connect directly with consumers, reduce dependence on middlemen and increase farmers' incomes. (Nnahiwe et al., 2023).. Ultimately, the integration of technology and innovation in marketing will positively impact sales performance, increasing the competitiveness of Indonesian agricultural products in the global market (Shehata et al., 2023). (Shehata et al., 2022)..

E-commerce has significantly impacted sales performance by expanding market reach and reducing operational costs. A study analyzing the use of e-commerce in EU companies showed substantial growth, emphasizing its economic importance. (Soava et al., 2022). In India, the growth of e-commerce driven by internet and smartphone penetration requires effective digital marketing strategies to increase sales (Kadam et al., 2022). (Kadam et al., 2023).. Innovative technologies such as automation and AI are improving trade flows and production distribution (Moshchynska & Tsalan, 2023).. Ecommerce website quality is critical for customer satisfaction and purchase intent, as seen in studies on Amazon India and Flipkart (Mittal et al., 2023).. The COVID-19 pandemic accelerated the growth of e-commerce, highlighting the need for a digital strategy (Wani & MohamadAli, 2022). Digital marketing strategies are

essential to increase sales conversions on e-commerce platforms. (Purnomo, 2023). AI improves sales forecasting and customer engagement (Biswas et al., 2023) while digital payment tools such as QRIS improve transaction efficiency and customer convenience (Wahyudin et al., 2022). (Wahyudin et al., 2022).. However, there is a gap in understanding how these elements interact when innovation acts as a mediator. This research aims to fill this gap by investigating how innovation mediates the relationship between e-commerce adoption and sales performance, offering valuable insights for optimizing e-commerce strategies. (Gao et al., 2023).

In Polewali Mandar, initial surveys show that agricultural entrepreneurs have experienced significant growth in adopting technology for sales. Many businesses have started to utilize e-commerce platforms, mobile apps, and other digital tools to increase their reach and efficiency. The adoption of these technologies has enabled them to access a wider market, streamline operations, and potentially increase their revenue. However, despite these advancements, a large number of agricultural entrepreneurs still rely on traditional sales methods. This manual sales approach persists mainly due to a lack of faith in the benefits of e-commerce and digital transactions. Many business owners remain skeptical about the safety, profitability, and overall advantages of integrating e-commerce into their sales strategies. This skepticism underscores the need for further research on the benefits of e-commerce and technological innovation. By providing comprehensive evidence and case studies that highlight the positive impact of these advancements, skeptical entrepreneurs can gain a better understanding and confidence in the potential of e-commerce and technological innovation to drive business growth and profitability. Top of the Form

In recent studies, various dimensions of influencer marketing, digital content campaigns, and their impact on consumer behavior and brand loyalty have been extensively explored. Influencer marketing has been shown to significantly increase brand awareness and consumer trust (Pandey et al., 2023; Parwal & S, 2023).. Influencer credibility is essential for effective marketing and building consumer trust (Khan, 2023; Leung et al., 2022).. Digital content campaigns increase customer engagement and perceived value, which are critical for building trust and loyalty (Anto et al., 2023). (Anto et al., 2023; Muhammad, 2022).. Customer trust mediates the relationship between brand awareness, brand association, and brand loyalty, particularly in the context of social media marketing. (Haudi et al., 2022; Sugiarti, 2023).. Social media marketing activities have a significant influence on customer loyalty by increasing trust and perceived quality. (Cahyani et al., 2022; Madelline, 2023).. While these studies demonstrate the importance of influencer marketing and digital content campaigns in increasing brand awareness, engagement, and loyalty, they often do not explicitly examine the mediating role of customer trust. The potential of trust to mediate the effects of influencer marketing and digital content campaigns on brand loyalty is less explored. Most studies focus on the direct effects rather than examining how trust can serve as an important mediating variable that enhances the overall impact on brand loyalty.

Polewali Mandar Regency, located in West Sulawesi Province, is experiencing rapid development in the utilization of digital technology and social media. With increasing internet penetration, people are becoming more connected through various digital platforms, creating significant opportunities for digital

marketing. Influencer marketing and digital content campaigns have become key strategies for many local businesses to increase brand awareness and consumer trust. The success of these strategies is heavily influenced by consumer trust, which is built through consistent interactions and relevant content. However, businesses often face challenges in determining the right metrics to measure the impact of their digital marketing efforts on brand loyalty and consumer trust. This research aims to address such challenges by exploring how influencer marketing and digital content campaigns can be optimized to build consumer trust and brand loyalty. This study aims to provide deeper insights into effective strategies in the local context of Polewali Mandar Regency, enabling businesses to maximize the potential of digital marketing to achieve long-term success.

The integration of advanced technology, particularly in e-commerce and digital marketing, is critical to improving sales performance and maintaining a competitive edge. Despite its clear benefits, skepticism remains among many agricultural entrepreneurs, especially in areas such as Polewali Mandar, where traditional sales methods still dominate. This research aims to bridge this gap by providing comprehensive evidence on the benefits of e-commerce and technological innovation, especially in the agricultural sector. By examining how innovation mediates the relationship between e-commerce adoption and sales performance, this study seeks to offer valuable insights for optimizing e-commerce strategies. The findings from this study will provide practical recommendations for businesses to effectively utilize digital technology, thereby enhancing their growth and profitability in an increasingly digitalized market. This study is critical in demonstrating the tangible benefits of e-commerce and technological innovation, thereby fostering greater trust and adoption among sceptical agricultural entrepreneurs.

RESEARCH METHOD

This study uses a quantitative research design to investigate the impact of e-commerce on sales performance mediated by innovation, among agricultural business entrepreneurs in Polewali Mandar. The population for this study included all agricultural business owners in the region. The sample was selected based on certain criteria, focusing on business owners who have adopted technology for sales purposes. A random sampling method was used to select 97 agricultural entrepreneurs who met these criteria, ensuring a representative sample. The privacy and confidentiality of all participants will be strictly maintained and protected, with data used solely for research purposes. Data analysis will be conducted using WarpPLS 8.0, a powerful statistical software, to test the hypothesized relationships between e-commerce success, sales performance, and the mediating role of innovation. This approach will provide a comprehensive understanding of how technology adoption affects business outcomes in the agricultural sector.

The conceptual framework of this study is designed to examine the significant relationships between e-commerce, innovation, and sales performance in the agricultural sector. This framework puts forward four main hypotheses. First, H1 suggests that e-commerce has a significant positive impact on sales performance. This hypothesis is based on the premise that adopting an e-commerce platform expands

market reach and reduces operational costs, thereby improving sales results. Second, H2 hypothesizes that e-commerce significantly affects innovation. The adoption of e-commerce technology encourages businesses to innovate their processes and product offerings to meet consumer demands better. Third, H3 proposes that innovation significantly affects sales performance. Innovative practices and products can improve operational efficiency and customer satisfaction, leading to higher sales performance. Finally, H4 argues that e-commerce significantly affects sales performance through the mediation of innovation. This hypothesis suggests that the benefits of e-commerce on sales are partly realized through innovative practices stimulated by e-commerce adoption. Collectively, these hypotheses underscore the important role of e-commerce and innovation in driving sales performance, particularly in the agricultural sector, and highlight the need for further research to validate this relationship.



Figure 1. Conceptual Framework

RESULTS AND DISCUSSION

Direct Effect

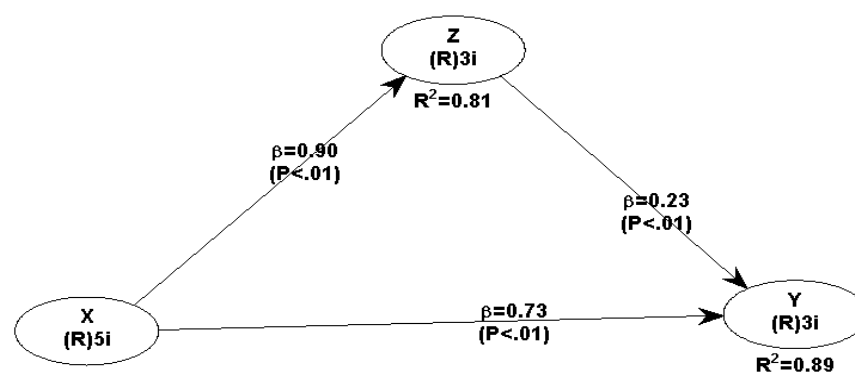


Figure 2. Direct Effect Results

Figure 2 presents the direct effect results of the study, highlighting the R^2 values for the variables in the conceptual model. The R^2 value represents the proportion of variance explained by the independent variables in the model. In this figure, the variable Z has an R^2 value of 0.81, indicating that 81% of the

variance in Z is explained by the predictor variable X. This high R² value indicates the strong explanatory power of X on Z. Similarly, variable Y has an R² value of 0.89, implying that 89% of the variance in Y is accounted for by the direct influence of X and the mediated influence through Z. This high R² value indicates that the model effectively explains the variance in Z and Y, confirming the significant impact of the predictors on the outcome variable.

Table 1. Direct Effect Hypothesis Results

No.	Hypothesis	Path Coefficient	P Value	Results
H1	E-Commerce -> Sales Performance	0.727	<0.001	Accepted
H2	E Commerce -> Innovation	0.901	<0.001	Accepted
H3	Innovation -> Sales Performance	0.230	<0.001	Accepted

Source: Data processed 2024

Table 1 summarises the results of testing the direct effect hypotheses, providing path coefficients, p-values, and results for each hypothesis. The first hypothesis (H1) examined the relationship between e-commerce and sales performance, resulting in a path coefficient of 0.727 with a p-value <0.001, indicating a significant positive effect and leading to acceptance of H1. The second hypothesis (H2) investigated the impact of e-commerce on innovation, with a path coefficient of 0.901 and a p-value <0.001, also showing a significant positive effect, resulting in the acceptance of H2. The third hypothesis (H3) explored the effect of innovation on sales performance, showing a path coefficient of 0.230 and a p value <0.001, thus confirming a significant positive effect and supporting the acceptance of H3. These results underscore e-commerce and innovation's important role in improving sales performance.

This study's findings align with and extend previous research on the impact of e-commerce and innovation on sales performance. Previous studies have established that effective resource management, strategic goal alignment, and employee competencies are critical to improving sales performance. (Kerr & Marcos-Cuevas, 2022; Musau, 2023).. In addition, the integration of advanced technologies, such as machine learning, has been shown to improve the ability of businesses to predict and optimize sales strategies (Wang & Aviles, 2023). The current study corroborates these findings by demonstrating the significant direct effects of e-commerce on innovation and sales performance, thus providing a comprehensive understanding of how digital strategies can drive business growth and profitability.

Indirect Effect

Table 2. Indirect Effect

No.	Hypothesis	Path Coefficient	P Value	Results
H4	E Commerce -> Innovation -> Sales Performance	0.207	0.001	Accepted

Source: Data processed 2024

Table 2 presents the results of testing the indirect effects hypothesis, focusing on the mediating role of innovation between e-commerce and sales performance. The fourth hypothesis (H4) examines this

indirect effect, showing a path coefficient of 0.207 with a p-value of 0.001. This significant result supports the acceptance of H4, suggesting that e-commerce positively impacts sales performance through the mediation of innovation. These findings highlight the important role that innovation plays in enhancing the effectiveness of e-commerce strategies in driving sales performance.

The findings of this study are in line with previous research, which has consistently shown the positive impact of e-commerce and innovation on sales performance. For example, studies have shown that e-commerce facilitates greater market reach and operational efficiency, leading to improved sales results. (Kadam et al., 2023; Soava et al., 2022).. In addition, innovation has been identified as a key driver of competitive advantage and improved sales performance, as it enables businesses to develop new products and improve processes (Domnich, 2022; Soava et al., 2022). (Domnich, 2022; Naveen & Nair, 2023).. This study extends these insights by confirming the mediating role of innovation, thus providing a more nuanced understanding of how e-commerce can drive sales performance through innovative practices.

The implications of these findings are highly relevant for agribusiness entrepreneurs in Polewali Mandar Regency, West Sulawesi Province. Influencer marketing and digital content campaigns have become key strategies to increase brand awareness and consumer trust. However, many businesses face challenges in measuring the impact of these efforts on brand loyalty and consumer trust. By demonstrating the significant indirect effects of e-commerce on sales performance through innovation, this study provides practical recommendations for local businesses. Entrepreneurs are encouraged to adopt e-commerce platforms and integrate innovative marketing strategies to increase their reach and operational efficiency. By leveraging digital technology and focusing on building consumer trust through consistent and relevant content, agribusinesses in Polewali Mandar can overcome skepticism and achieve long-term growth and profitability. This study underscores the importance of embracing digital transformation and innovation to remain competitive in an increasingly digitized market, ultimately fostering greater trust and adoption among agricultural entrepreneurs.

CONCLUSION

This study aims to investigate the impact of e-commerce on sales performance mediated by innovation, among agricultural business entrepreneurs in Polewali Mandar. The findings show that e-commerce significantly improves sales performance both directly and indirectly through the mediating role of innovation. With path coefficients and p-values showing strong positive effects, it is clear that adopting e-commerce and encouraging innovation are important strategies to improve sales results. This insight underscores the importance of integrating digital technology and innovative practices to drive business growth and competitiveness. For agribusiness entrepreneurs in Polewali Mandar, the results highlight the need to embrace digital transformation and utilize e-commerce platforms to increase market reach, operational efficiency, and customer trust, ultimately achieving sustainable growth and profitability in an increasingly digitalized market.

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