



The Strategy to Improve MSME Performance through Entrepreneurial Orientation, Organizational Readiness, Knowledge Management, and E-Commerce Adoption

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Abstract

Micro, Small, and Medium Enterprises (MSMEs) are among the most important contributors to the Indonesian economy. In the digital era, using e-commerce is one of the strategies to face the increasing competition in the business world. However, MSMEs in Indonesia are still faced with various obstacles, primarily related to the lack of mastery of technology and the unoptimized utilization of technology in business. It is necessary to check the factors that can enhance MSME performance. This study aims to analyze the influence of organizational readiness, entrepreneurial orientation, knowledge management, and e-commerce adoption, which are expected to improve MSME performance in the digital era. Partial Least Squares Structural Equation Modeling (PLS-SEM) tests the relationship between these variables. This study involved 241 MSME owners/managers who have adopted e-commerce in their businesses in the food and beverage industry. The results showed that organizational readiness, entrepreneurial orientation, knowledge management, and e-commerce adoption significantly improve the performance of MSMEs in food and beverage businesses. These findings better explain how MSME players can optimally improve capabilities and organizational resources to achieve sustainable competitive advantage and superior business performance.

Introduction

Micro, Small, and Medium Enterprises (MSMEs) are essential in driving the country's economic growth. Data from the Ministry of Cooperatives and Small and Medium Enterprises in 2022 showed that the contribution of MSMEs in Indonesia to GDP reached 61.97%. This business sector can also absorb 97% of the total workforce and collect up to 60.4% of total investment in Indonesia.

Internet user penetration in Indonesia continues to increase from year to year. It follows data from the Indonesian Internet Service Providers Association (APJII) Survey Year 2024, where the internet penetration rate in Indonesia increased from 78.19% to 79.5%. Along with the increase in internet user penetration in Indonesia, it triggers initiatives to apply technology in almost all business sectors, which impacts the development of the digital economy in Indonesia.

According to the latest report from Google, Temasek, and Brain & Company in e-Conomy SEA 2023, it is known that e-commerce will be the sector that contributes the most to the digital economy in Indonesia in 2023. The Economy SEA 2023 report shows that e-commerce dominates Indonesia's digital economy in 2023, with total online transactions in the digital

economy of US\$ 82 billion. The report predicts that this positive trend will continue until 2025 and 2030, with e-commerce as the main driver.

Many businesses seek to become competitive by adopting e-commerce in today's business environment. E-commerce covers various organizational activities, such as sales, purchases, shipping, and other organizational management activities via the web or other information networks (Ramanathan et al., 2012). In Indonesia, the e-commerce trend is multiplying. According to the Financial Education and Training Agency (BPPK) (2019), the rapid growth of e-commerce is caused by the habit of consumers who are starting to depend on e-commerce sites to buy various kinds of products, especially those that are difficult to find in physical stores.

Furthermore, according to data from Statistics Indonesia (2022), the e-commerce business sector in Indonesia is dominated by the food and beverage sector, which reaches the highest proportion of 43.02% of the total e-commerce business, then the fashion sector with a business proportion of 15.04%, household needs with a proportion reaching 8.11%, transportation and delivery of goods at 5.86%, finally the cosmetics sector with a percentage of business proportion of 5.37%.

As the e-commerce trend grows, several online platforms used to facilitate e-commerce activities are emerging and increasing in number. Referring to the latest data from the Similarweb platform, a web analytics platform, there are four e-commerce platforms with the most visitors in Indonesia from January to March 2024: Shopee, Tokopedia, Lazada, and Blibli. The high proportion of food and beverage businesses in e-commerce indicates that the food and beverage sector has excellent potential in the digital economy. Several other e-commerce platforms were developed, such as GoFood, GrabFood, and ShopeeFood, to provide convenience to customers, especially with online food and beverage delivery services,

The research published by one of the research institutions, the Alvara Research Center, in 2022 shows that GoFood is the best-selling e-commerce platform used by MSME players in the food and beverage sector, with a value proportion reaching 99.3% of the total respondents. Apart from GoFood, another e-commerce platform recommended by MSMEs that do business in the food and beverage sector is GrabFood, with a value achievement of 98.8%, and then ShopeeFood, which is in third place, with a value achievement proportion of 70.2% (Santika, 2023).

With all the benefits provided through e-commerce, which can influence company performance, it ultimately motivates businesspeople, such as MSMEs who have not yet joined the digital ecosystem, to enter and use the e-commerce platform in running their business. Digital entrepreneurship has become a field attracting attention in the current digital era. Considering consumer behavior patterns, technological developments, and the increasingly widespread availability of the Internet, digital entrepreneurship is an opportunity and a necessity.

E-commerce brings more competition (OECD, 2002), which makes businesses more vulnerable to losing existing customers if they do not adopt it. Therefore, the Government has launched various programs to attract the interest of MSME players to become part of the digital ecosystem and use e-commerce to carry out their business activities. The digital ecosystem is a concept for creating a service-oriented technology ecosystem. This digital ecosystem aims to optimize operations in the digital sector and interactions between organizations, along with increasing information exchange between organizations in the digital ecosystem (Adhiatma et al., 2023). All parties can connect and integrate through the digital ecosystem to open new business revenue opportunities.

Based on data from the Ministry of Trade, 22 million MSMEs will join the digital economy by 2023. However, this number only reflects 33.6% of the total MSMEs (INDEF, 2024). 66.4% of MSMEs still have not yet joined the digital economy. Even though the growth of users of e-commerce platforms by MSME players is increasing, they still face challenges in optimizing these platforms to develop their business. Not only that, but they are also faced with several challenges that hinder their competitiveness and performance in crisis conditions and a highly competitive market environment (Akpan et al., 2021; Papadopoulos et al., 2020).

Data from the Ministry of Cooperatives and Small and Medium Enterprises (KemenkopUKM) shows that 70.2% of MSMEs encounter obstacles when utilizing digital technology. These various obstacles include the availability of raw materials and difficulties in adopting digital technology. Previous studies have noted several problems that cause some MSMEs to be reluctant to embrace e-commerce, including a lack of resources and knowledge about e-commerce (Fang et al., 2022; Fonseka et al., 2022). The unwillingness to use e-commerce to run a business means that MSMEs have weak connectivity to the market and distribution channels. Ultimately, this condition makes some companies unable to compete with local and large companies (Wirdiyanti et al., 2023), resulting in decreased sales and the potential for bankruptcy.

Given the critical contribution of MSMEs to the economy, issues related to MSMEs have become a common subject of research in various fields (Chi3n et al., 2023; Wirdiyanti et al., 2023; Yacob et al., 2021). Some of the challenges and obstacles faced by business actors, including those that have the potential to hamper their competitiveness and performance in the digital era due to limited resources and low knowledge related to e-commerce (Papadopoulos et al., 2020; Akpan et al., 2020), indicating that they still need strengthening on several sides of the business actors.

The Resource-Based View theory emphasizes the importance of company resources as a critical factor in achieving sustainable competitive advantage (Barney, 1991), along with the Technology-Organization-Environment framework that emphasizes the importance of technological, organizational, and environmental factors to the successful adoption and implementation of information technology (Baker, 2012), businesses need to develop unique and valuable internal resources and capabilities to create value and achieve superior performance (Gupta et al., 2018). It can be realized by increasing the competence of human resources in the field of e-commerce and building an organizational culture that is adaptive to change through organizational readiness, entrepreneurial orientation, knowledge management, and e-commerce adoption.

In today's landscape, shaped by evolving consumer behaviors, rapid technological advancements, and the ubiquitous Internet, digital entrepreneurship has transcended its status as a mere opportunity and become an imperative necessity (BPPTIK, 2023). Business actors realize the importance of innovation, proactively seeking opportunities, and adapting to market changes (Manyati & Mutsau, 2021). This phenomenon is driven by increasingly fierce business competition and the massive adoption of digital technology. Evidence that business actors have an entrepreneurial orientation can be seen from the rise of start-up businesses in various sectors, digital transformation carried out by various business scales, and the increasingly widespread use of e-commerce platforms.

Existing studies indicate positive entrepreneurial orientation and performance (Susanto et al., 2023; Aftab et al., 2022). However, (Lomborg et al., 2017) argue that the relationship between entrepreneurial orientation and performance depends on context. (D'Souza & Fan, 2022) reveal a negative relationship between entrepreneurial orientation and company performance, which

occurs if the company is developing. Meanwhile, a positive relationship between entrepreneurial orientation and company performance occurs when the company is just emerging.

Ambiguous evidence regarding the relationship between entrepreneurial orientation and company performance shows that this topic requires further research (Wales, 2016). It is also driven by the condition that the entrepreneurial environment is shaped by social and demographic trends that continue to develop, and MSMEs face various challenges in operating in a business climate dominated by fast-paced technology (Susanto et al., 2023).

The previous study reveals that the relationship between entrepreneurial orientation and performance is context-dependent (Lomberg et al., 2017), indicating that the implementation of entrepreneurial orientation needs to consider the company's stage of development and its internal capacity. A mature organizational readiness is required to translate entrepreneurial orientation into positive performance. Organizational readiness is not only about having enough resources but also how those resources are organized and coordinated effectively (Kurnia et al., 2015). Companies with more flexible structures and adequate resources tend to transform entrepreneurial orientation into competitive advantage and improved performance successfully. Conversely, companies with weak organizational readiness will experience difficulties in effectively carrying out the entrepreneurial process (Engelen et al., 2014). It is because organizational readiness, including a flexible structure and adequate resources, allows companies to respond more to opportunities and quickly adapt to market changes (Brozovic et al., 2023).

Referring to the above description, a high entrepreneurial orientation does not necessarily guarantee success. The success of entrepreneurial orientation in influencing performance depends on the organization's readiness to translate the entrepreneurial orientation into tangible actions and results. It aligns with research conducted by Rauch et al. (2009), which shows that factors influence the relationship between entrepreneurial orientation and performance. Factors mediating the relationship between entrepreneurial orientation and firm performance must be further examined as they contribute to business sustainability and performance (Nugroho et al., 2022).

In this context, knowledge management emerges as a potential variable mediating the relationship between entrepreneurial orientation and performance. Research conducted by Kusa et al. (2024) showed that entrepreneurial orientation has a positive and significant relationship with business performance, and knowledge management acts as a mediator. Knowledge has become essential to improve organizational competitiveness (Kusa et al., 2024). Companies must effectively utilize their knowledge resources to gain a competitive advantage for companies to thrive.

The research in the industry indicates that companies that can manage knowledge effectively tend to be more innovative, adaptive to change, and create more value for customers, ultimately contributing to improved performance (Kusa et al., 2024). It suggests that knowledge management is not just a management trend but a strategic necessity for companies that want to leverage entrepreneurial orientation to achieve long-term sustainability and success. Nonetheless, the relationship between entrepreneurial orientation, knowledge management, and business performance must be explored more deeply.

Previous research, such as that conducted by Wiklund & Shepherd (2003), suggests that knowledge-based resources, such as the ability to discover and capitalize on opportunities, positively influence firm performance, and entrepreneurial orientation strengthens this relationship. However, there is a need to examine how entrepreneurial orientation interacts with

internal firm characteristics, including how firms organize and manage their knowledge. Therefore, further studies are needed that can uncover the complexity of the relationship between entrepreneurial orientation, knowledge management, and firm performance by considering relevant contextual factors, such as organizational culture as well as a work environment that promotes learning, which will strengthen the positive impact of entrepreneurial orientation as well as knowledge management on organizational performance (Fuentes-fuentes et al., 2015).

Furthermore, knowledge management is also critical to the success of companies in today's digital era (Nah et al., 2001), where e-commerce has become a form of digital business that attracts people's interest. Previous research on the role of knowledge management in e-commerce adoption shows that companies that implement knowledge management well tend to be more prepared and successful in adopting e-commerce. For example, research from Yee-Loong Chong et al. (2014) found that the knowledge acquisition and application process significantly influenced the company's decision to adopt e-commerce in their supply chain.

In large companies, knowledge management plays a role in integrating knowledge spread across various departments and business units to be optimally utilized to support e-commerce strategies (Oppong et al., 2005). In small companies, such as MSMEs, applying knowledge management to e-commerce is needed to increase their competitiveness amid increasingly fierce competition with companies. Despite having limited resources, MSMEs can utilize knowledge management to understand local market needs and innovate unique products and services that suit their market segments to deliver better business performance (Cegarra-Navarro & Angel Martínez-Conesa, 2007).

Many studies have reviewed the relationship between the role of knowledge management and e-commerce adoption (Al-Emran et al., 2018; Yee-Loong Chong et al., 2014). Likewise, research that discusses the role of e-commerce adoption on firm performance has been sufficiently reviewed in the literature (Fonseka et al., 2022). However, these studies generally focus on industries in developed countries. Given the importance of e-commerce adoption in improving competitiveness and economic growth, especially in developing countries, it is necessary to conduct further research that discusses the role of knowledge management on firm performance through e-commerce adoption.

In addition to knowledge management, several factors influence businesses' decision to adopt e-commerce (Walker et al., 2016; Yee-Loong Chong et al., 2013;). For example, a study by Walker et al. (2016) found that organizational readiness significantly affects e-commerce adoption. Research by Hameed et al. (2012) even determined that organizational readiness is the number one factor in the list of determinants of technology adoption. However, this contrasts with a study conducted by Duan et al. (2012), where organizational readiness, which includes financial and technological readiness, was found to have no significant influence on e-commerce adoption due to the lack of economic and technical demands required in e-commerce when compared to other advanced technologies. Given the discrepancies in previous research results, further research is needed to identify specific factors in organizational readiness that significantly encourage or hinder e-commerce adoption and how such adoption ultimately affects firm performance.

Based on the above phenomena and research gaps, researchers will analyze the role of organizational readiness, entrepreneurial orientation, knowledge management, and e-commerce adoption on MSME performance. Organizational readiness is expected to encourage strategic commitments such as entrepreneurial orientation to mobilize the resources needed in the current business to implement new strategic initiatives, which are expected to improve

organizational performance. As stated by Rauch et al. (2009), the effect of entrepreneurial orientation on MSME performance will be better observed by building organizational capability rather than directly linking it to performance.

Thus, the novelty of this study is to explain the role of organizational readiness that is identified to encourage entrepreneurial orientation, which is an essential foundation for building organizational capabilities, as stated by Rauch et al. (2009), which can drive company performance. Furthermore, this study will also explain the role of knowledge management and e-commerce adoption that are thought to improve MSME performance. This study also follows up on previous research (Nugroho et al., 2022; Nasution et al., 2021) to investigate other organizational capabilities needed to mediate the relationship between entrepreneurial orientation and firm performance and its effect on business sustainability. This research seeks to provide a more comprehensive understanding of how organizational readiness, entrepreneurial orientation, knowledge management, and e-commerce adoption are interrelated and influence performance and business sustainability.

Many studies have addressed the role of knowledge management and e-commerce adoption. According to the author, this topic remains relevant and should be conducted in Indonesia. The e-commerce sector in Indonesia is changing rapidly. Mobile phone and internet penetration in Indonesia continues to increase. Likewise, the competitive landscape in the industry is getting tougher. New research is needed to investigate how MSMEs are keeping pace with these changes and what new strategies they can implement to support MSME business success and sustainability.

Lastly, given that the MSME business sector has excellent business potential but is vulnerable when faced with uncertainty, such as in this digital era, it would be interesting if research could delve deeper into the factors contributing to the sustainable performance of MSMEs.

Methods

This study used a quantitative methodology using SmartPLS of the structural equation to analyze the data. It is a tool that uses a component-based estimate approach with advanced features to analyze various data types and does not require many assumptions, such as normality and a large sample (Yi & Hwang, 2003; Hwang & Takane, 2014; Wong, 2013). This study employs a two-pronged process. First, an outer model analysis assesses the construct's validity and reliability (Hair et al., 2019). This analysis utilizes several indicators: convergent validity, measured using average variance extracted; discriminant validity, examined through cross-loading analysis; and internal consistency, a crucial reliability aspect, is evaluated using Cronbach's alpha and composite reliability. Second, an inner model assessment confirms the model's overall fit and appropriateness (Hair et al., 2019). This assessment relies on various metrics, including coefficient of determination and cross-validated redundancy, to accurately gauge the model's ability to represent the relationships between the constructs under investigation.

This research uses a cross-sectional survey design, and seventeen hypotheses are tested. The five variables, organizational readiness, entrepreneurial orientation, knowledge management, e-commerce adoption, and MSME performance, were selected based on the literature review. A six-point Likert-type scale range of 1 (strongly disagree) to 6 (strongly agree) was used to measure the constructs of the used variables. A total of 47 items were constructed based on an extensive literature review to grasp the perception of the participants, who are the owner-managers, about the organizational readiness, entrepreneurial orientation, and MSME performance, which are mediated by knowledge management and e-commerce adoption of MSME in Indonesia. In SME characteristics, the owner typically assumes the manager role. A

total of 241 respondents participated in the survey, which utilized a non-probability sampling technique.

Results and Discussion

Descriptive Analysis

As depicted in Table 1, a majority of 55% of respondents are female, and 45% are male. It is indicated that the owner-managers of MSMEs in Indonesia who are respondents in this study are still an area dominated by females. Meanwhile, many owner-managers are aged 30 to 40 years old. The majority of 68% of the owner-managers pursued education in the undergraduate program, and some of them, 26%, have attended postgraduate programs. Finally, most of the 53% are MSMEs with 2-5 years in business, indicating they are relative newcomers to the market.

Table 1. Demographic Data (N= 241)

Respondent profile	Frequency	(%)
Industry Category		
Food Catering	145	60%
Food Services	96	40%
Gender		
Male	108	45%
Female	133	55%
Age of Owners-Managers		
Below 20 years	5	2%
20-30 years	91	38%
30-40 years	128	53%
Above 40 years	17	7%
Education Level		
Diploma Level	63	26%
Undergraduate	163	68%
Postgraduate	15	6%
Age of Business		
2-5 years	127	53%
Above 5 years	114	47%

Evaluation of Outer Model Measurements

Validity and Reliability Test

The validity test in this research was carried out by checking the loading indicators and the convergent validity of each construct measure through AVE. Indicator loadings and convergent validity are considered adequate if the loading factor value is > 0.708 and the AVE value is ≥ 0.50 (Hair et al., 2019). Meanwhile, the reliability test in this research was carried out by checking internal consistency reliability using Composite Reliability (CR) and Cronbach's Alpha. Reliability is acceptable if the Composite Reliability and Cronbach's Alpha values are > 0.70 (Hair et al., 2019).

Table 2. Validity and Reliability Test Results

Variable	Dimensions	Indicator	Validity	AVE	Reliability	CR
			Loading Factor > 0.708		Cronbach's Alpha	
Organizational Readiness	Perceived Benefits	PB1	0.892	0.833	0.899	0.937
		PB2	0.915			

Variable	Dimensions	Indicator	Validity	AVE	Reliability	CR	
			Loading Factor > 0.708		Cronbach's Alpha		
	Perceived Organizational Resources and Governance	PB3	0.930	0.827	0.948	0.960	
		PORG1	0.897				
		PORG2	0.903				
		PORG3	0.923				
		PORG4	0.899				
		PORG5	0.924				
Entrepreneurial Orientation	Innovativeness	IN1	0.937	0.836	0.902	0.939	
		IN2	0.933				
		IN3	0.871				
	Proactiveness	PR1	0.914	0.830	0.932	0.951	
		PR2	0.892				
		PR3	0.907				
		PR4	0.932				
	Risk Taking	RT1	0.920	0.831	0.898	0.937	
		RT2	0.896				
RT3		0.919					
Knowledge Management	Knowledge Acquisition	KA1	0.897	0.820	0.945	0.958	
		KA2	0.913				
		KA3	0.904				
		KA4	0.915				
		KA5	0.898				
	Knowledge Dissemination	KD1	0.897	0.818	0.926	0.947	
		KD2	0.922				
		KD3	0.931				
		KD4	0.867				
	Knowledge Application	KAP1	0.900	0.811	0.942	0.955	
		KAP2	0.904				
		KAP3	0.912				
		KAP4	0.893				
		KAP5	0.902				
		KAP6	0.901				
			KAP7	0.898	0.800	0.937	0.952
			KAP8	0.924			
KAP9			0.823				
KAP10			0.895				
E-Commerce Adoption	-	EA1	0.899	0.814	0.886	0.929	
		EA2	0.890				
		EA3	0.917				
		FP1	0.913	0.815	0.886	0.930	

Variable	Dimensions	Indicator	Validity	AVE	Reliability	CR
			Loading Factor > 0.708		Cronbach's Alpha	
MSME performance	Financial Performance	FP2	0.899	0.801	0.917	0.942
		FP3	0.895			
		OP1	0.898			
	Operational Performance	OP2	0.893			
		OP3	0.908			
		OP4	0.881			

Based on the validity and reliability test, the loading factor values for all indicators are above 0.708, and the AVE values for all indicators are also above 0.50. It can be concluded that all indicators have been declared valid. Furthermore, the composite reliability value and Cronbach's alpha are above 0.70. It means that all research variables met the reliability requirements.

Then, the discriminant validity test is performed using the Fornell-Larcker criteria.

Table 3. Discriminant Validity Test Results

	<i>E-commerce Adoption</i>	<i>Entrepreneurial Orientation</i>	<i>Kinerja UMKM</i>	<i>Knowledge Management</i>	<i>Organizational Readiness</i>
<i>E-commerce Adoption</i>	0,902				
<i>Entrepreneurial Orientation</i>	0,806	0,878			
<i>Kinerja UMKM</i>	0,767	0,770	0,873		
<i>Knowledge Management</i>	0,697	0,659	0,766	0,871	
<i>Organizational Readiness</i>	0,821	0,780	0,767	0,714	0,884

Based on the discriminant validity test, each latent variable's AVE square root value is greater than the correlation between the latent variable and other latent variables. Hence, it is concluded that it had fulfilled the discriminant validity requirements.

Evaluation of Inner Model Measurements

Coefficient of Determination

The Coefficient of Determination or R^2 is used to check the accuracy of exogenous and endogenous variables in the value range from 0 to 1.

Table 4. Coefficient of Determination Test Results

Variable	R^2	R^2 Adjusted	Category
Entrepreneurial Orientation	0.608	0.607	Medium
Knowledge Management	0.536	0.532	Medium
E-Commerce Adoption	0.754	0.750	Substantial
MSME Performance	0.693	0.690	Medium

According to the results of the coefficient of determination test above, it is known that the R^2 of entrepreneurial orientation is 60.8%. It means that organizational readiness can explain entrepreneurial orientation by 60.8%. Furthermore, the R^2 value of knowledge management is 53.6%. It implies that entrepreneurial orientation and organizational readiness can define knowledge management by 53.6%. Moreover, the R^2 value for e-commerce adoption is 75.4%. Organizational readiness, entrepreneurial orientation, and knowledge management can explain e-commerce adoption by 75.4%. Finally, it is known that the R^2 value for MSME performance

is 69.3%. It indicates that knowledge management and e-commerce adoption can explain the performance of MSMEs by 69.3%.

Cross-Validated Redundancy

The cross-validated redundancy or Q^2 test measures how well the model produces the observation value and parameter estimates (Ghozali, 2016). A Q^2 value greater than 0 indicates that the model has good predictive relevance. Meanwhile, if the Q^2 value is less than 0, the model has little or no predictive relevance (Chin, 1998). The Q^2 value criteria are divided into three categories: 0.50 as a significant category, 0.25 as a medium category, and 0 as a small category.

Table 5. Q-Square Test Results

Variable	Q^2	Category
Entrepreneurial Orientation	0,463	Medium
Knowledge Management	0,398	Medium
E-Commerce Adoption	0,609	Significant
MSME Performance	0,522	Significant

Based on Table 5 above, all variables have a value greater than 0. It indicates that the model has a good predictive relevance value, where the exogenous variables can predict the endogenous variables.

Structural Model (Hypothesis Testing)

The basis for decision-making for hypothesis testing in this research is that if the p-value is <0.05 (significance level = 5%) and the T-statistic value is > 1.96 , then it is stated that there is a significant influence of exogenous variables on endogenous variables.

Table 6. Hypothesis Test Results (Significance of Direct Effect)

Hypothesis	Relationship between Variables	Original Sample (O)	T Statistics	P Values	Decision to Hypotheses
H ₁	Organizational Readiness-> Entrepreneurial Orientation	0.780	23.463	0.000	Supported
H ₂	Entrepreneurial Orientation -> Knowledge Management	0.262	2.681	0.008	Supported
H ₃	Knowledge Management -> Kinerja UMKM	0.450	5.792	0.000	Supported
H ₄	Knowledge Management -> E-Commerce Adoption	0.146	2.501	0.013	Supported
H ₅	Entrepreneurial Orientation -> E-Commerce Adoption	0.385	5.954	0.000	Supported
H ₆	E-Commerce Adoption -> Kinerja UMKM	0.454	5.837	0.000	Supported
H ₇	Organization Readiness -> Knowledge Management	0.509	6.184	0.000	Supported
H ₈	Organization Readiness -> E-Commerce Adoption	0.416	5.807	0.000	Supported

Based on Table 6 above, all hypotheses in this study are supported, which means that all exogenous variables positively influence endogenous variables. Organizational readiness has the most significant influence on entrepreneurial orientation and knowledge management.

Meanwhile, entrepreneurial orientation has the lowest considerable influence on knowledge management.

Table 7. Hypothesis Test Result (Significance of Indirect Effect)

Hypothesis	Relationship between Variables	Original Sample (O)	T Statistics	P Values	Decision to Hypotheses
H _{1a}	Organizational Readiness-> Entrepreneurial Orientation -> Knowledge Management	0.204	2.618	0.009	Supported
H _{1b}	Organizational Readiness -> Entrepreneurial Orientation -> E-Commerce Adoption	0.301	5.825	0.000	Supported
H _{2a}	Entrepreneurial Orientation -> Knowledge Management -> E-Commerce Adoption	0.038	1.596	0.111	Not supported
H _{3a}	Entrepreneurial Orientation -> Knowledge Management -> Kinerja UMKM	0.118	2.329	0.020	Supported
H _{4a}	Knowledge Management -> E-Commerce Adoption -> Kinerja UMKM	0.066	2.151	0.032	Supported
H _{6a}	Entrepreneurial Orientation -> E-Commerce Adoption -> Kinerja UMKM	0.175	3.895	0.000	Supported
H _{7a}	Organization Readiness -> Knowledge Management -> E-Commerce Adoption	0.070	2.384	0.017	Supported
H _{7b}	Organization Readiness -> Knowledge Management -> Kinerja UMKM	0.229	4.441	0.000	Supported
H _{8a}	Organization Readiness -> E-Commerce Adoption -> Kinerja UMKM	0.189	4.015	0.000	Supported

Based on Table 7, knowledge management insignificantly mediates the relationship between entrepreneurial orientation and e-commerce adoption. Meanwhile, according to the path analysis, H_{7b} has the most significant influence on MSME performance.

The Influence of Organizational Readiness on Entrepreneurial Orientation

Based on the results of hypothesis testing, it can be concluded that organizational readiness has a positive and significant influence on entrepreneurial orientation. It is evidenced by the original sample value of 0.780 and the T-statistics value, which reaches a value of 23.463, and the P-value of 0.000, causing H₁ to be supported by the data. These results align with the research from Filser et al. (2014), where organizational readiness can significantly influence entrepreneurial orientation. Organizational readiness reflects an organization's ability or willingness to take entrepreneurial action (Coduras et al., 2016).

In this study, MSMEs consider awareness of the role of e-commerce and a supportive organizational structure, especially in the delegation of authority for e-commerce implementation, as crucial elements in preparing for digital business competition. Clear delegation of authority in e-commerce implementation indicates organizational readiness that will provide flexibility, especially in decision-making and resource allocation, and better adaptability in market dynamics. Since MSMEs provide apparent authority for each e-

commerce initiative, it allows them to better adapt to market dynamics, thus encouraging MSMEs to be more proactive in seeking new initiatives and opportunities in the digital market to create new products and services. This finding also reinforces the conclusions of Covin & Wales (2011), which demonstrate that, especially in the dynamic e-commerce context, organizational readiness—including establishing apparent authority—encourages entrepreneurial orientation.

The Influence of Entrepreneurial Orientation on Knowledge Management

Based on the results of hypothesis testing in Table 6, it is concluded that entrepreneurial orientation has a positive and significant effect on knowledge management. It is evidenced by the original sample value of 0.262, the T-statistics value, which reaches a value of 2.681, and the P-value, which is 0.008, causing H₂ to be supported by the data. This result aligns with research from Nasution et al. (2021), which shows a significant influence between entrepreneurial orientation and knowledge management.

The company sees innovation as the key to success. They actively seek new opportunities and encourage their employees to take risks in developing new ideas. These factors indicate that MSMEs have a proactive, innovative, risk-taking, and growth-orientated culture and mindset, which are the hallmarks of a strong entrepreneurial orientation. This high entrepreneurial spirit further enhances the implementation of knowledge management as companies are encouraged to continue learning, adapting, and innovating. The utilization of technology for the development of new products/services is critical in realizing this. Through technology, companies can collect, analyze, and disseminate market information, consumer trends, and the latest technology more quickly and efficiently (Boghani, 2000). Integrating entrepreneurial orientation, effective knowledge management, and technology utilization will create a solid dynamic to develop innovative products/services and win market competition.

The Influence of Knowledge Management on MSME Performance

Based on the data in Table 6, knowledge management positively influences MSME performance, which means H₃ is supported. It shows that knowledge management can significantly drive the performance of MSMEs in the food and beverage sector. This study's results align with previous research that has found a positive relationship between knowledge management and firm performance (Kusa et al., 2024; Iqbal et al., 2019).

This study found that MSMEs view technology as essential to their knowledge management strategy and integrate it actively into product/service development. Companies that can utilize technology effectively in managing their knowledge make it possible for them to adapt to market changes by producing innovations in the form of improving the quality of services provided to customers, such as delivering more personalized and responsive services, as well as easy access to product/service information, which can ultimately improve business performance. It is in line with the findings of Lee et al. (2012), who stated that a good knowledge management infrastructure, including the utilization of technology, contributes positively to improving knowledge process capability in the organization, which can improve business performance.

In conclusion, MSMEs that effectively leverage technology in their knowledge management strategies demonstrate a greater capacity for adaptation to market shifts, enhanced service quality, and improved business performance. This finding underscores the importance of a robust knowledge management infrastructure, encompassing technology utilization, in bolstering organizational capabilities and driving business success.

The Influence of Knowledge Management on E-commerce Adoption

According to Table 6, H₄ has an original sample value of 0.146, a T-statistics value of 2.501, and a *P*-value of 0.013. This effect is relatively weak because it only explains 14.6% of the variation in e-commerce adoption. Other factors outside the research model still explain 85.4% of the variation. However, this finding supports previous research by Al-Emran et al. (2018), which states that knowledge management positively influences e-commerce adoption. It means that the better the implementation of knowledge management in MSMEs, the more likely they are to adopt and utilize e-commerce effectively.

In this study, MSMEs view technology as essential in their knowledge management strategy and actively integrate it into the product/service development process. It is a necessary aspect of knowledge management that can positively impact e-commerce adoption. Companies that can utilize technology effectively in managing their knowledge make it possible for them to adapt to market changes. As Chen et al. (2012) explained, data mining in e-commerce can extract valuable knowledge about customer behavior and preferences, including the customer's preferred payment methods. Companies then utilize this information to improve service quality and develop products/services that align with customer needs and preferences, one of which is by accepting electronic order payments. Adopting digital payment systems, as a strategy used by MSMEs in this study, is essential for an effective e-commerce strategy. Accepting digital payments reflects an adaptive mindset that allows companies to manage transactions more efficiently, which in turn can encourage businesses to use e-commerce platforms more.

The Influence of Entrepreneurial Orientation on E-Commerce Adoption

Based on Table 5, it is concluded that H₅ is supported. H₅ has an original sample value of 0.385, a T-statistics value of 5.954, and a *P*-value of 0.000. It shows that entrepreneurial orientation has been proven to influence e-commerce adoption positively. It aligns with previous research results where firms with a high entrepreneurial orientation will explore new processes and technologies to create products/services for their customers (Avlonitis & Salavou, 2007; Lumpkin & Dess, 1996).

Referring to Table 5.4, the high number of indicators in the entrepreneurial orientation variable reflects that companies focus on innovation, proactively seek opportunities, and encourage measured risk-taking. A passion for innovation and creating a corporate culture that fosters creativity and risk-taking and is responsive to new opportunities indicates a robust entrepreneurial orientation, which encourages them to be open to new things (Saffu et al., 2008). This spirit is reflected in the concrete actions of exploring and adopting e-commerce and accepting payment for orders placed electronically via the Internet as a potential marketing and sales channel. Electronic payment acceptance is essential in e-commerce strategies because it enables fast, secure, and easy transactions for customers (Vasic et al., 2018), which in turn can increase sales and customer loyalty (Mofokeng, 2021).

The findings in this study reaffirm that entrepreneurial orientation is essential in encouraging MSMEs to adopt e-commerce. MSMEs with an entrepreneurial orientation tend to be better equipped to utilize the opportunities offered by e-commerce to improve their competitiveness and achieve sustainable business growth. MSMEs can leverage e-commerce as a sales channel and a strategic tool to enhance customer experience, expand market reach, and ultimately thrive in the increasingly competitive digital economy.

The Effect of E-Commerce Adoption on MSME Performance

This research shows strong support for H₆, which states that e-commerce adoption has a positive relationship with the performance of MSMEs. H₆ has an original sample value of

0.454, a T-statistics value of 5.837, and a *P*-value of 0.000. These findings suggest that the higher the adoption of e-commerce by MSMEs and the more efficient its use, the more significant the increase in business performance obtained. This research's results align with a previous study that found a positive relationship between e-commerce adoption and MSME performance (Fonseka et al., 2022).

Based on Table 3, e-commerce adoption and knowledge management variables explain around 69.3% of the MSME performance explored in this study. This study found that the company's ability to process online payment transactions strongly influences MSMEs' performance. Electronic payment systems have revolutionized e-commerce by providing a secure and efficient platform for online transactions. Lee et al. (2002) explore various electronic payment systems, highlighting their advantages and limitations. These systems facilitate seamless transactions, allowing customers to make purchases with ease and convenience.

Moreover, they enhance security by encrypting sensitive data and reducing the risk of fraud. Electronic payment systems expand market reach and open new growth avenues, enabling businesses to accept customer payments worldwide. The widespread adoption of electronic payment systems has been instrumental in the exponential growth of e-commerce, transforming how businesses operate and consumers shop online (Lee et al., 2002). It illustrates how important it is to adopt an electronic payment system as part of an e-commerce strategy to improve operations and speed up transactions, ultimately improving business performance in terms of efficiency, sales, customer satisfaction, and overall profits.

In line with Barney's (1991) concept, e-commerce is a valuable resource because it opens up opportunities to reach a broader market without capital and physical stores (Fonseka et al., 2022). On the other hand, the uniqueness of the business model, the products offered, and the proximity to customers obtained through e-commerce can be a competitive advantage that is difficult to replicate by larger competitors. Ultimately, adapting to technological developments and optimally utilizing e-commerce will be the key for MSMEs to remain competitive and thrive in the digital era.

The Influence of Organizational Readiness on Knowledge Management

Based on the data in Table 6, the original sample value is 0.509. The T-statistic is 6.184 with a *P*-value of 0.000, hence supports *H*₇. It shows that organizational readiness positively influences knowledge management. Previous empirical studies have confirmed that organizational readiness is an effective enabler of the knowledge management process (Garrido-Moreno et al., 2015).

In this study, the clarity of the division of authority in e-commerce initiatives in MSMEs plays a crucial role in accelerating the process of technology adoption and innovation. With well-defined authority, MSME individuals who often have multiple roles can directly focus on technology needs specific to e-commerce. It allows them to nimbly identify the most appropriate technologies, seek the necessary information and training, and implement them. MSMEs can integrate technology more agilely and efficiently, encouraging a more targeted and optimized innovation process and new product/service development. It is in line with previous research by Becerra-Fernandez & Sabherwal (2014), in which organizational readiness to provide explicit authority in e-commerce initiatives has a crucial role in shaping the effectiveness of knowledge management, which, in turn, shapes the effectiveness of knowledge management and hence encourage innovation and business growth, especially in the digital realm such as e-commerce.

Therefore, by fostering a clear division of authority within e-commerce initiatives, MSMEs can empower their workforce, streamline technology adoption, and unlock a more agile and

effective path toward innovation and growth in the digital marketplace. This strategic approach to organizational structure can be instrumental in maximizing the benefits of knowledge management and driving success in the rapidly evolving e-commerce landscape.

The Influence of Organizational Readiness on E-Commerce Adoption

The result of hypothesis testing in Table 6 shows that organizational readiness positively and significantly influences e-commerce adoption. The original sample value is 0.416, T-statistics value (6.064), and P-values (0.000), causing H_8 to be supported by the data. This finding is consistent with other studies confirming organizational readiness's importance in driving e-commerce adoption (Kurnia et al., 2015; Tan et al., 2007).

As confirmed in this study, one of the crucial aspects of organizational readiness is the clarity of authority in any e-commerce initiative. Clarity of authority is an integral part of holistic organizational readiness, which, according to Ocloo et al. (2020), is critical in determining the successful implementation and utilization of e-commerce in MSMEs. In the context of digital payment system adoption, individuals given apparent authority can responsively identify the need for the digital payment system and take strategic steps to adopt it. Those given apparent authority can also quickly allocate resources, adjust business processes, and integrate digital payment systems into existing e-commerce platforms. This clarity of authority will minimize confusion, speed up the decision-making process, and ultimately drive more effective technology adoption.

In conclusion, organizational readiness, including clarity of authority in e-commerce initiatives, is an essential foundation for MSMEs to adopt and leverage e-commerce, including digital payment systems, successfully. According to Chen et al. (2023), digital payment systems offer convenience and speed of transactions for consumers and provide operational efficiency for MSMEs. Therefore, MSMEs must prioritize establishing a clear division of authority within their e-commerce strategies to fully harness the transformative potential of e-commerce and digital payment systems.

The Mediating Effect of Entrepreneurial Orientation in the Relationship between Organisational Readiness and Knowledge Management

Table 7 shows that entrepreneurial orientation mediates the relationship between organizational readiness and knowledge management. The original sample value is 0.204, the T-statistics value is 2.618, and the P-value is 0.009, causing H_{1a} to be supported by the data. That is, when organizational readiness increases, entrepreneurial orientation increases, in turn leading to improved knowledge management.

Organizational readiness, demonstrated through the explicit authorization of e-commerce initiatives, encourages MSMEs to explore new possibilities, including developing new products/services using technology. This enabling environment fosters an entrepreneurial orientation within MSMEs, which enables them to absorb knowledge and utilize it to create new products and services, enter new markets, and compete effectively in the digital marketplace (Hong et al., 2012). In this context, knowledge management is essential to ensure that relevant knowledge can be accessed, shared, and utilized effectively to support the development of new products/services. MSMEs mature in knowledge management can systematically collect market information, technology trends, and customer needs (Oppong et al., 2005) and use it as a foundation for developing innovative products/services that align with market demand. Integrating organizational readiness, entrepreneurial orientation, and practical knowledge management empowers MSMEs to thrive in the dynamic and competitive digital landscape.

The Mediating Effect of Entrepreneurial Orientation in the Relationship between Organisational Readiness and E-Commerce Adoption

Table 7 shows that entrepreneurial orientation significantly mediates the relationship between organizational readiness and e-commerce adoption. The original sample value is 0.301, the T-statistics value is 5.825, and the P-value is 0.000, causing H_{1b} to be supported by the data. Part of the positive influence of organizational readiness on e-commerce adoption is channeled through entrepreneurial orientation. That is, as organizational readiness increases, entrepreneurial orientation increases, in turn leading to increased e-commerce adoption.

In this study, it is known that providing apparent authority for each e-commerce initiative shows the readiness of MSMEs to support digital initiatives. Explicit authorization for each e-commerce initiative offers flexibility and the ability for MSMEs to adapt quickly to market changes and customer needs. This flexibility and adaptability further encourage the growth of entrepreneurial orientation, which is reflected in a corporate culture that values innovation, is proactive in seeking new opportunities, and provides room for the organization to take measured risks. A solid entrepreneurial orientation that supports organizational readiness further encourages MSMEs in the food and beverage sector to adopt new business strategies, including digitizing business processes, such as accepting digital payments. The acceptance of digital payment systems shows the company's efforts to capitalize on opportunities in the digital market to expand market reach, improve operational efficiency, and increase competitiveness (Oppong et al., 2005).

Referring to the above explanation, MSMEs that want to succeed in the digital era must strengthen their organizational capabilities regarding organizational readiness and entrepreneurial orientation. Building a flexible organizational structure and a corporate culture that supports innovation, proactively seeks opportunities, and takes measured risks are crucial. Thus, MSMEs can be better prepared to face competition, capitalize on the opportunities offered by e-commerce, and achieve sustainable business growth.

The Mediating Effect of Knowledge Management in the Relationship between Entrepreneurial Orientation and E-Commerce Adoption

Table 7 shows that knowledge management insignificantly mediates the relationship between entrepreneurial orientation and e-commerce adoption. The results of this study are inversely proportional to the research of Nasution et al. (2021), which found a mediating effect between entrepreneurial orientation and knowledge management. This low entrepreneurial orientation in MSMEs causes knowledge management within MSMEs to be suboptimal and less able to support efforts to adapt and develop in the digital era.

Lack of innovation in business operations, lack of proactivity in building and utilizing networks with other organizations, and an organizational culture less supportive of risk-taking indicate the low entrepreneurial orientation of MSMEs in this study. This low entrepreneurial orientation in MSMEs causes knowledge management to be suboptimal and less able to support efforts to adapt and develop in the digital era.

Weak knowledge management in the studied MSMEs indicates the existence of barriers in the knowledge creation, dissemination, and utilization process. Lack of respect for employee ideas, ineffective documentation and dissemination systems, and minimal efforts to learn from competitors indicate the reluctance of MSMEs to innovate in managing knowledge. This condition aligns with the findings of Yuen & Ng (2021), which state that MSMEs that lack innovation tend to maintain traditional operational systems, including documentation.

The reluctance to abandon traditional systems indicates low innovation in MSMEs, which impacts the weak knowledge management system (Yuen and Ng, 2021). Traditional and closed documentation systems make knowledge challenging to access and disseminate efficiently. As a result, learning and creating new knowledge is hampered, making it difficult for MSMEs to adapt to market developments and capitalize on new opportunities such as e-commerce.

The Mediating Effect of Knowledge Management in the Relationship between Entrepreneurial Orientation and MSME Performance

According to Table 7, the mediation test results show that knowledge management mediates the relationship between entrepreneurial orientation and MSME performance. The data supports H_{3a}, which reflects the original sample value of 0.118, the T-statistics value of 2.161, and the P-value of 0.031. The findings in the study state that knowledge management partially channels the positive influence of entrepreneurial orientation on MSME performance. Although with a relatively small mediation strength, this study aligns with previous research (Kusa et al., 2024), which indicated that knowledge management is proven to mediate the relationship between entrepreneurial orientation and MSME performance.

The MSMEs that are the focus of this research demonstrate a solid commitment to innovation as a critical driver of success. They actively seek out and capitalize on new opportunities and foster a work environment that encourages risk-taking and the development of innovative ideas. All of this suggests that MSMEs have a strong entrepreneurial orientation. Furthermore, this high entrepreneurial spirit further enhances the implementation of knowledge management because companies are encouraged to continue learning, adapting, and innovating, including technology utilization for new product/service development. Through technology, companies can collect, analyze, and disseminate market information, consumer trends, and the latest technology more quickly and efficiently (Boghani, 2000). MSMEs can better understand customers' needs and preferences, develop more suitable products/services, and provide more personalized services, improving MSME performance.

The Mediating Effect of E-Commerce Adoption in the Relationship between Knowledge Management and MSME Performance

According to Table 7, the mediation test results show that e-commerce adoption mediates the relationship between knowledge management and MSME performance. This finding supports research from Daniel & Wilson (2002), which states that MSMEs that successfully adopt e-commerce and integrate it with knowledge management strategies tend to perform well.

Knowledge management further strengthens the ability to utilize technology by providing access to the latest information and knowledge on various e-commerce technologies, including digital payment systems. Access to the latest information and knowledge on e-commerce technologies enables MSMEs to select and integrate payment systems best suited to their business and customer needs. Putrevu & Mertzanis (2024) state that accepting electronic payment of orders has become necessary to support e-commerce business strategies and cater to the increasingly skewed consumer preferences towards digital payment systems.

Accepting order payments made electronically through the Internet can ultimately lead to an improvement in the service process to customers because it provides convenience and speed in transactions. Research by Daniel & Wilson (2002) reinforces this by stating that MSMEs that successfully integrate knowledge management strategies into implementing e-commerce adoption tend to perform better. Thus, it can be concluded that effective knowledge management is the key for MSMEs to adapt and excel in the increasingly competitive digital business landscape.

The Mediating Effect of E-Commerce Adoption in the Relationship between Entrepreneurial Orientation and MSME Performance

According to Table 7, the mediation test results show that e-commerce adoption can mediate the relationship between entrepreneurial orientation and MSME performance. The original sample value is 0.175, and the T-statistics value reaches 3.990, more than 1.96. While the P-value is 0.000, less than 0.05, H_{6a} is supported by the data. This study emphasizes that MSMEs with a solid entrepreneurial orientation will be more likely to adopt and utilize e-commerce effectively to improve their performance. This finding aligns with research from Amin et al. (2016), which shows that e-commerce adoption significantly mediates the relationship between entrepreneurial orientation and MSME performance.

The MSMEs studied in this research have a relatively strong entrepreneurial orientation. It can be seen from the commitment of MSMEs to developing innovative ideas, actively seeking and utilizing new opportunities, and fostering a work environment that encourages risk-taking. A solid entrepreneurial orientation in MSMEs further urges the adoption of e-commerce. It is in line with research from Avlonitis & Salavou (2007), as well as Lumpkin & Dess (1996), where MSMEs that have a solid entrepreneurial orientation are more likely to explore new processes and technologies, such as e-commerce to create products and services to their customers. The presence of e-commerce platforms allows MSMEs to reach a broader market familiar with digital transactions, so accepting electronic payments for orders is crucial.

Acceptance of digital payments reflects an adaptive mindset, a hallmark of MSMEs with a solid entrepreneurial orientation (Franco et al., 2021). MSMEs that accept digital payments demonstrate readiness to integrate technology to expand their markets and improve the quality of service to customers, which in turn leads to substantial business growth.

The Mediating Effect of Knowledge Management in the Relationship between Organizational Readiness and E-commerce Adoption

Table 7 supports H_{7a} , which states that knowledge management mediates the relationship between organizational readiness and e-commerce adoption. It means that organizations with high organizational readiness tend to have a better knowledge management system, which will drive e-commerce adoption. This finding reinforces the research of Scupola (2009), which emphasizes the importance of organizational readiness in shaping a conducive environment for e-commerce adoption.

Organizational readiness, mainly reflected in granting apparent authority for e-commerce initiatives, can encourage creating an enabling environment for effective knowledge management implementation in MSMEs. The authority provides direction and confidence for MSMEs to explore new opportunities, promote collaboration and knowledge transfer among team members, and ultimately make optimal use of technology to develop innovative products/services. The dynamic and adaptive environment created by this positive cycle is a crucial element in the effective implementation of knowledge management and the success of MSMEs in the digital era.

Franco et al. (2021) pointed out that MSMEs must apply their knowledge, including understanding competition and market trends, to make the right decisions when facing challenges and capitalizing on opportunities in the digital era. Therefore, when team members have well-defined authorities and responsibilities, identifying, evaluating, and implementing e-commerce solutions, including digital payment systems increasingly relevant to business models and customer needs, becomes more efficient and targeted (Yee-Loong Chong et al., 2014). Thus, a well-structured authority in e-commerce initiatives and solid knowledge

management enables MSMEs to improve operational efficiency and drive sustainable e-commerce adoption within MSMEs.

The Mediating Effect of Knowledge Management in the Relationship between Organizational Readiness and MSME Performance

According to Table 7, the mediation test results show that knowledge management mediates the relationship between organizational readiness and MSME performance. The result aligns with previous research (Garrido-Moreno et al., 2015), in which knowledge management has been proven to mediate the relationship between organizational readiness and MSME performance. Clear delegation of authority in e-commerce initiatives is vital to building optimal organizational readiness in MSMEs. In this study, a well-defined authority may stimulate the exploration of new opportunities, team collaboration, and knowledge transfer, encouraging the utilization of technology for product and service innovation. The dynamic and adaptive environment created by this positive cycle not only supports the implementation of effective knowledge management but also has the potential to improve customer service processes. Structured authority in e-commerce initiatives gives teams flexibility and speed in responding to customer needs and issues. With this autonomy, the team can quickly provide solutions, thus minimizing problem-solving and customer waiting times (Johnson & Iyamu, 2019).

On the other hand, a collaborative and learning-orientated environment, facilitated by apparent authority, encourages the creation of solutions that are not only innovative but also prioritize customer needs and satisfaction in terms of quality, efficiency, and speed. As asserted by Isichei et al. (2020), these factors ultimately positively impact the overall performance of MSMEs. This finding underscores the critical role of knowledge management as a bridge between organizational readiness and enhanced MSME performance.

The Mediating Effect of E-Commerce Adoption in the Relationship between Organizational Readiness and MSME Performance

According to Table 7, the mediation test results show that e-commerce adoption mediates the relationship between organizational readiness and MSME performance. The original sample value of 0.189, the T-statistics value of 4.493, and the P-value of 0.000 causes H_{8a} to be supported by the data. This finding strengthens the results of previous research (Hasani et al., 2023) regarding the effect of digital technology adoption that mediates the relationship between organizational readiness and firm performance.

The existence of an apparent authority for each e-commerce initiative makes it easier for MSMEs to allocate human capital and technology resources, thus encouraging them to be more ready to adopt new technologies, including electronic payment systems. It aligns with research from Ocloo et al. (2020), where organizational readiness can affect how well MSMEs can implement new technology, affecting how well their business performs (Vijayaraman & Bhatia, 2002). Furthermore, integrating digital payment systems in e-commerce platforms can improve customer service because it offers convenience and transaction speed. It aligns with Borges Tiago et al. (2007), where the ease and speed of the services provided through this e-commerce platform will ultimately increase customer satisfaction, have a positive impact on the performance of customer satisfaction, and have a positive effect on the performance of MSMEs.

Conclusion

This study analyzes the influence of organizational readiness, entrepreneurial orientation, knowledge management, and e-commerce adoption on the performance of MSMEs in Indonesia, particularly in the food and beverage sector. The results show that organizational

readiness, entrepreneurial orientation, knowledge management, and e-commerce adoption positively influence financial and operational MSME performance. The relationship between these variables forms a mutually reinforcing dynamic to empower MSMEs to achieve superior performance.

Furthermore, the mediation test results indicate that knowledge management and e-commerce adoption effectively mediate the relationship between entrepreneurial orientation and organizational readiness, ultimately influencing MSME performance. By ensuring organizational readiness and leveraging entrepreneurial capabilities, MSMEs can better manage their knowledge assets and leverage e-commerce as a strategic tool to improve MSME performance optimally.

This study found that knowledge management did not mediate the relationship between entrepreneurial orientation and e-commerce adoption. The low entrepreneurial orientation in MSMEs has the potential to cause the application of knowledge management to be less than optimal, so they tend to maintain traditional operational systems. Ultimately, this has the potential to make it difficult for MSMEs to adapt to market developments, including utilizing e-commerce opportunities. Therefore, efforts are needed to encourage the strengthening of entrepreneurial orientation in MSMEs. Enhancing entrepreneurial orientation improves knowledge management, enabling more effective e-commerce adoption and ultimately boosting MSME performance.

The findings in this study provide several theoretical implications that can enrich the understanding of strategies to improve MSME performance in the digital era. From a strategic entrepreneurship lens, a robust entrepreneurial orientation is a foundation for MSMEs to identify and capitalize on digital market opportunities, including e-commerce. On the other hand, organizational readiness is the foundation for effective e-commerce strategy implementation. This finding reinforces the Resource-Based View (RBV) theory and the Technology-Organisation-Environment (TOE) framework that underlines the critical role of organizational readiness as an internal resource of MSMEs in driving the successful adoption of technology to improve performance.

Meanwhile, excellent knowledge management enables MSMEs to adapt quickly to the dynamic e-commerce environment. This research also strengthens the RBV theory by showing that knowledge management, as an organizational capability, plays an essential role in managing, utilizing, and developing knowledge assets, thereby maximizing the potential resources of MSMEs.

However, this research only highlights the organizational capabilities that support the performance of MSMEs. It opens opportunities for future research to identify other factors, especially from the external side, that affect the performance of MSMEs in the digital era. Furthermore, the context of this study is MSMEs in Indonesia's food and beverage sector. It is interesting to investigate whether industry diversity can influence the determinants of the success of MSMEs in Indonesia.

References

- Adhiatma, A., Fachrunnisa, O., & Rahayu, T. (2022). Creating digital ecosystem for small and medium enterprises: the role of dynamic capability, agile leadership and change readiness. *Journal of Science and Technology Policy Management, ahead-of-print*. <https://doi.org/10.1108/JSTPM-12-2020-0171>
- Aftab, J., Veneziani, M., Sarwar, H., & Ishaq, M. I. (2022). Entrepreneurial orientation and firm performance in SMEs: The mediating role of entrepreneurial competencies and

- moderating role of environmental dynamism. *International Journal of Emerging Markets*. <https://doi.org/10.1108/IJOEM-07-2021-1151>
- Akpan, I. J., Soopramanien, D., & Kwak, D.-H. (2021). Cutting-edge technologies for small business and innovation in the era of COVID-19 global health pandemic. *Journal of Small Business & Entrepreneurship*, 33(6), 607–617. <https://doi.org/10.1080/08276331.2020.1799294>
- Al-Emran, M., Mezhuyev, V., Kamaludin, A., & Shaalan, K. (2018). The impact of knowledge management processes on information systems: A systematic review. *International Journal of Information Management*, 43, 173–187. <https://doi.org/10.1016/j.ijinfomgt.2018.08.001>
- Amin, M., Thurasamy, R., Aldakhil, A. M., & Kaswuri, A. H. B. (2016). The effect of market orientation as a mediating variable in the relationship between entrepreneurial orientation and SMEs performance. *Nankai Business Review International*, 7(1), 39–59. <https://doi.org/10.1108/NBRI-08-2015-0019>
- Avlonitis, G. J., & Salavou, H. E. (2007). Entrepreneurial orientation of SMEs, product innovativeness, and performance. *Journal of Business Research*, 60(5), 566–575. <https://doi.org/10.1016/j.jbusres.2007.01.001>
- Baker, J. (2012). *The Technology–Organization–Environment Framework*. In: Dwivedi, Y., Wade, M., Schneberger, S. (eds) *Information Systems Theory*. Integrated Series in Information Systems, 28. Springer, New York, NY. https://doi.org/10.1007/978-1-4419-6108-2_12
- Barney, J. (1991). Firm resources and sustained competitive advantage. *Journal of Management*, 17(1), 99–120. <https://doi.org/10.1177/014920639101700108>
- Becerra-Fernandez, I., & Sabherwal, R. (2014). *Knowledge Management: Systems and Processes* (2nd ed.). Routledge. <https://doi.org/10.4324/9781315715117>
- Boghani, A.B. (2000). Knowledge Management: An Engine for Innovation. *Handbook of Business Strategy*, 1(1), 89–94. <https://doi.org/10.1108/eb060210>
- Borges Tiago, M.T., Pedro Almeida Couto, J., Gomes Tiago, F., & Cabral Vieira, A. (2007). Knowledge management: An overview of European reality. *Management Research News*, 30(2), 100–114. <https://doi.org/10.1108/01409170710722946>
- Brozović, D., Jansson, C. and Boers, B. (2023). Strategic flexibility and growth of small and medium-sized enterprises: a study of enablers and barriers. *Management Decision*. <https://doi.org/10.1108/MD-05-2022-0577>
- Cegarra-Navarro, J.G., & Angel Martínez-Conesa, E. (2007). E-business through knowledge management in Spanish telecommunications companies. *International Journal of Manpower*, 28(3/4), 298–314. <https://doi.org/10.1108/01437720710755263>
- Chen, D., Sain, S. & Guo, K. (2012). Data mining for the online retail industry: a case study of RFM model-based customer segmentation using data mining. *Journal of Database Marketing & Customer Strategy Management*, 19, 197–208. <https://doi.org/10.1057/dbm.2012.17>
- Chi6n, S. J., Charles, V., & V6squez Luna, L. E. (2023). Knowledge transfer and entrepreneurial orientation: the mediating effect of the transactive memory system. *Total Quality Management & Business Excellence*, 34(13–14), 1797–1829. <https://doi.org/10.1080/14783363.2023.2205016>

- Chin, W. W. (1998). *The partial least squares approach for structural equation modeling*. In G. A. Marcoulides (1st Ed.). *Modern Methods for Business Research*, 295–336. Mahwah, NJ: Lawrence Erlbaum Associates.
- Coduras, A., Saiz-Alvarez, J. M., & Ruiz, J. (2016). Measuring readiness for entrepreneurship: An information tool proposal. *Journal of Innovation and Knowledge*, 1(2), 99–108. <https://doi.org/10.1016/j.jik.2016.02.003>
- Covin, J. G., & Wales, W. J. (2011). The Measurement of Entrepreneurial Orientation. *Entrepreneurship Theory and Practice*, 36(4), 677–702. <https://doi.org/10.1111/j.1540-6520.2010.00432.x>
- Daniel, E., & Wilson, H. (2002). Adoption intentions and benefits realised: a study of e-commerce in UK SMEs. *Journal of Small Business and Enterprise Development*, 9(4), 331-348. <https://doi.org/10.1108/14626000210450522>
- D'Souza, D. E., & Fan, G. (2022). A capability-anchored articulation of the EO-organizational performance relationship in emergent and post-emergent organizations. *Journal of Business Research*, 146, 107–117. <https://doi.org/10.1016/j.jbusres.2022.03.069>
- Duan, X., Deng, H., & Corbitt, B. (2012). Evaluating the critical determinants for adopting e-market in Australian small-and-medium sized enterprises. *Management Research Review*, 35(3/4), 289–308. <https://doi.org/10.1108/01409171211210172>
- Engelen, A., Kube, H., Schmidt, S., & Flatten, T.C. (2014). Entrepreneurial orientation in turbulent environment: the moderating role of absorptive capacity. *Research Policy*, 43, 1353-1369. <https://doi.org/10.1016/j.respol.2014.03.002>
- Fang, G. G., Qalati, S. A., Ostic, D., Shah, S. M. M., & Mirani, M. A. (2022). Effects of entrepreneurial orientation, social media, and innovation capabilities on SME performance in emerging countries: a mediated–moderated model. *Technology Analysis & Strategic Management*, 34(11), 1326–1338. <https://doi.org/10.1080/09537325.2021.1957816>
- Filser, M., Eggers, F., Kraus, S., & Málovics, É. (2014). The effect of financial resource availability on entrepreneurial orientation, customer orientation and firm performance in an international context: an empirical analysis from Austria and Hungary. *Journal of East European Management Studies*, 19(1), 7–30. <http://dx.doi.org/10.5771/0949-6181-2014-1-7>
- Fonseka, K., Jaharadak, A. A., & Raman, M. (2022). Impact of E-commerce adoption on business performance of SMEs in Sri Lanka; moderating role of artificial intelligence. *International Journal of Social Economics*, 49(10), 1518–1531. <https://doi.org/10.1108/IJSE-12-2021-0752>
- Franco, M., Godinho, L., & Rodrigues, M. (2021). Exploring the influence of digital entrepreneurship on SME digitalization and management. *Small Enterprise Research*, 28(3), 269–292. <https://doi.org/10.1080/13215906.2021.1938651>
- Fuentes-Fuentes, M. del M., Bojica, A. M., & Ruiz-Arroyo, M. (2015). Entrepreneurial orientation and knowledge acquisition: effects on performance in the specific context of women-owned firms. *International Entrepreneurship and Management Journal*, 11, 695–717. <https://doi.org/10.1007/s11365-014-0336-1>
- Garrido-Moreno, A., Lockett, N., & Garcia-Morales, V. (2015). Exploring the role of knowledge management practices in fostering customer relationship management as

- a catalyst of marketing innovation. *Baltic Journal of Management*, 10(4), 393–412. <https://doi.org/10.1108/BJM-10-2014-0166>
- Ghozali, I. (2016). *Aplikasi analisis multivariete dengan program IBM SPSS 23*.
- Gupta, V. K., Niranjana, S., Goktan, B. A., & Eriskon, J. (2016). Individual entrepreneurial orientation role in shaping reactions to new technologies. *International Entrepreneurship and Management Journal*, 12, 935–961. <https://doi.org/10.1007/s11365-015-0373-4>
- Hair, J. F., Risher, J. J., Sarstedt, M., & Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. *European Business Review*, 31(1), 2–24. <https://doi.org/10.1108/EBR-11-2018-0203>
- Hameed, M. A., Counsell, S., & Swift, S. (2012). A meta-analysis of relationships between organizational characteristics and IT innovation adoption in organizations. *Information & Management*, 49(5), 218–232. <https://doi.org/10.1016/j.im.2012.05.002>
- Hasani, T., Rezanian, D., Levallet, N., O'Reilly, N., & Mohammadi, M. (2023). Privacy enhancing technology adoption and its impact on SMEs' performance. *International Journal of Engineering Business Management*, 15, 18479790231172870. <https://doi.org/10.1177/18479790231172874>
- Hong, J., Song, T. H., & Yoo, S. (2012). Paths to Success: How Do Market Orientation and Entrepreneurship Orientation Produce New Product Success? *Journal of Product Innovation Management*, 30(1), 44–55. <https://doi.org/10.1111/j.1540-5885.2012.00985.x>
- Hwang, H., & Takane, Y. (2014). *Generalized structured component analysis: a component-based approach to structural equation modeling*. CRC Press. <https://doi.org/10.1201/b17872>
- Iqbal, A., Latif, F., Marimon, F., Sahibzada, U. F., & Hussain, S. (2019). From knowledge management to organizational performance: Modelling the mediating role of innovation and intellectual capital in higher education. *Journal of Enterprise Information Management*, 32(1), 36–59. <https://doi.org/10.1108/JEIM-04-2018-0083>
- Isichei, E.E., Emmanuel Agbaeze, K., & Odiba, M.O. (2020). Entrepreneurial orientation and performance in SMEs: the mediating role of structural infrastructure capability. *International Journal of Emerging Markets*, 15(6), 1219–1241. <https://doi.org/10.1108/IJOEM-08-2019-0671>
- Johnson, O., & Iyamu, T. (2019). Framework for the adoption of e-commerce: a case of South African retail grocery sector. *The Electronic Journal of Information Systems in Developing Countries*, e12095. <https://doi.org/10.1002/isd2.12095>
- Kurnia, S., Choudrie, J., Mahbubur, R. M., & Alzougool, B. (2015). E-commerce technology adoption: A Malaysian grocery SME retail sector study. *Journal of Business Research*, 68(9), 1906–1918. <https://doi.org/10.1016/j.jbusres.2014.12.010>
- Kusa, R., Suder, M., Duda, J., Czakon, W., & Juárez-Varón, D. (2024). Does knowledge management mediate the relationship between entrepreneurial orientation and firm performance? *Journal of Knowledge Management*. <https://www.emerald.com/insight/content/doi/10.1108/JKM-07-2023-0608/full/html>

- Lee, S., Gon Kim, B., & Kim, H. (2012). An integrated view of knowledge management for performance. *Journal of Knowledge Management*, 16(2), 183-203. <http://dx.doi.org/10.1108/13673271211218807>
- Lumpkin, G.T., & Dess, G.G. (1996). Clarifying the entrepreneurial orientation construct and linking it to performance. *Academy of Management Review*, 21(1), 135-172. <https://doi.org/10.2307/258632>
- Lomberg, C., Urbig, D., Stöckmann, C., Marino, L. D., & Dickson, P. H. (2017). Entrepreneurial orientation: The dimensions' shared effects in explaining firm performance. *Entrepreneurship Theory and Practice*, 41(6), 973-998. <https://doi.org/10.1111/etap.12237>
- Manyati, T. K., & Mutsau, M. (2021). Leveraging green skills in response to the COVID-19 crisis: a case study of small and medium enterprises in Harare, Zimbabwe. *Journal of Entrepreneurship in Emerging Economies*, 13(4), 673-697. <https://doi.org/10.1108/JEEE-07-2020-0236>
- Mofokeng. (2021). The impact of online shopping attributes on customer satisfaction and loyalty: moderating effect of e-commerce experience. *Cogent Business and Management*, 8, 1968206. <https://doi.org/10.1080/23311975.2021.1968206>
- Nah, F., Siau, K., Tian, Y., & Ling, M. (2002). Knowledge management mechanisms in e-commerce: A study of online retailing and auction sites. *Journal of Computer Information Systems*, 42(5), 119-128. <https://www.tandfonline.com/doi/abs/10.1080/08874417.2002.11647616>
- Nasution, M. D. T. P., Rafiki, A., Lubis, A., & Rossanty, Y. (2021). Entrepreneurial orientation, knowledge management, dynamic capabilities towards e-commerce adoption of SMEs in Indonesia. *Journal of Science and Technology Policy Management*, 12(2), 256-282. <https://doi.org/10.1108/JSTPM-03-2020-0060>
- Nugroho, A., Prijadi, R., & Kusumastuti, R. D. (2022). Strategic orientations and firm performance: the role of information technology adoption capability. *Journal of Strategy and Management*, 15(4), 691-717. <https://doi.org/10.1108/JSMA-06-2021-0133>
- Ocloo, C. E., Xuhua, H., Akaba, S., Shi, J., & Worwui-Brown, D. K. (2020). The Determinant Factors of Business to Business (B2B) ADOPSI E-COMMERCE in Small- and Medium-Sized Manufacturing Enterprises. *Journal of Global Information Technology Management*, 23(3), 191-216. <https://doi.org/10.1080/1097198X.2020.1792229>
- OECD. (2002). *Measuring the Information Economy*. Paris: OECD Publishing
- Oppong, S.A., Yen, D.C., & Merhout, J.W. (2005). A new strategy for harnessing knowledge management in e-commerce. *Technology in Society*, 27, 413-435. <https://doi.org/10.1016/j.techsoc.2005.04.009>
- Papadopoulos, T., Baltas, K. N., & Balta, M. E. (2020). The use of digital technologies by small and medium enterprises during COVID-19: Implications for theory and practice. *International Journal of Information Management*, 55, 102192. <https://doi.org/10.1016/j.ijinfomgt.2020.102192>
- Putrevu, J., & Mertzanis, C. (2024). The adoption of digital payments in emerging economies: challenges and policy responses. *Digital Policy, Regulation and Governance*, 26(5), 476-500. <https://doi.org/10.1108/DPRG-06-2023-0077>

- Ramanathan, R., Ramanathan, U., & Hsiao, H.-L. (2012). The impact of e-commerce on Taiwanese SMEs: Marketing and operations effects. *International Journal of Production Economics*, 140(2), 934–943. <https://doi.org/10.1016/j.ijpe.2012.07.017>
- Rauch, A., Wiklund, J., Lumpkin, G. T., & Frese, M. (2009). Entrepreneurial orientation and business performance: An assessment of past research and suggestions for the future. *Entrepreneurship Theory and Practice*, 33(3), 761–787. <https://doi.org/10.1111/j.1540-6520.2009.00308.x>
- Saffu, K., Walker, J.H., & Hinson, R. (2008). Strategic value and electronic commerce adoption among small and medium-sized enterprises in a transitional economy. *Journal of Business & Industrial Marketing*, 23(6), 395–404. <http://dx.doi.org/10.1108/08858620810894445>
- Scupola, A. (2009). SMEs' e-commerce adoption: Perspectives from Denmark and Australia. *Journal of Enterprise Information Management*, 22(1/2), 152–166. <https://doi.org/10.1108/17410390910932803>
- Susanto, P., Hoque, M. E., Shah, N. U., Candra, A. H., Hashim, N. M. H. N., & Abdullah, N. L. (2023). Entrepreneurial orientation and performance of SMEs: the roles of marketing capabilities and social media usage. *Journal of Entrepreneurship in Emerging Economies*, 15(2), 379–403. <https://doi.org/10.1108/JEEE-03-2021-0090>
- Tan, J., Tyler, K., & Manica, A. (2007). Business-to-business adoption of eCommerce in China. *Information & Management*, 44(3), 332–351. <https://doi.org/10.1016/j.im.2007.04.001>
- Vasic, N., Kilibarda, M., & Kaurin, T. (2018). The influence of online shopping determinants on customer satisfaction in the Serbian market. *Journal of Theoretical and Applied Electronic Commerce Research*, 14(2), 70–89. <https://doi.org/10.4067/S0718-18762019000200107>
- Vijayaraman, B. S., & Bhatia, G. (2002). A framework for determining success factors of an e-commerce initiative. *Journal of Internet Commerce*, 1(2), 63–75. https://doi.org/10.1300/J179v01n02_05
- Wales, W. J. (2016). Entrepreneurial orientation: A review and synthesis of promising research directions. *International Small Business Journal*, 34(1), 3–15. <https://doi.org/10.1177/0266242615613840>
- Walker, J. H., Saffu, K., & Mazurek, M. (2016). An empirical study of factors influencing e-commerce adoption/non-adoption in Slovakian SMEs. *Journal of Internet Commerce*, 15(3), 189–213. <https://doi.org/10.1080/15332861.2016.1191049>
- Wiklund, J., & Shepherd, D. (2003). Knowledge-based resources, entrepreneurial orientation, and the performance of small and medium-sized businesses. *Strategic Management Journal*, 24(13), 1307–1314. <https://doi.org/10.1002/smj.360>
- Wirdiyanti, R., Yusgiantoro, I., Sugiarto, A., Harjanti, A. D., Mambea, I. Y., Soekarno, S., & Damayanti, S. M. (2023). How does e-commerce adoption impact micro, small, and medium enterprises' performance and financial inclusion? Evidence from Indonesia. *Electronic Commerce Research*, 23(4), 2485–2515. <https://doi.org/10.1007/s10660-022-09547-7>
- Wong, K.K. (2013). Partial least squares structural equation modeling (PLS-SEM) techniques using SmartPLS. *Marketing Bulletin*, 24(1), 1-32.

- Yacob, S., Sulistiyo, U., Erida, E., & Siregar, A. P. (2021). The importance of E-commerce adoption and entrepreneurship orientation for sustainable micro, small, and medium enterprises in Indonesia. *Development Studies Research*, 8(1), 244–252. <https://doi.org/10.1080/21665095.2021.1976657>
- Yee-Loong Chong, A., Ooi, K.-B., Bao, H., & Lin, B. (2014). Can e-business adoption be influenced by knowledge management? An empirical analysis of Malaysian SMEs. *Journal of Knowledge Management*, 18 (1), 121-136. <https://doi.org/10.1108/JKM-08-2013-0323>
- Yi, M.Y., & Hwang, Y. (2003). Predicting the use of web-based information systems: self-efficacy, enjoyment, learning goal orientation, and the technology acceptance model”, *International Journal of Human-Computer Studies*, 59(4), 431-449. [https://doi.org/10.1016/S1071-5819\(03\)00114-9](https://doi.org/10.1016/S1071-5819(03)00114-9)
- Yuen, Y.Y., & Ng, X.P. (2021). Enhancing innovation performance of small and medium enterprises in Malaysia. *Management Science Letters*, 11, 887-894. <https://doi.org/10.5267/j.msl.2020.10.010>