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MANAGEMENT

The Role of Artificial Intelligence in Enhancing MSME Performance: The Interplay Between Customer Orientation, Competitor Orientation, and Brand Commitment

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ABSTRACT

Purpose: This study aims to examine the impact of customer orientation, competitor orientation, and brand commitment on the business performance of Micro, Small, and Medium Enterprises (MSMEs), focusing on the moderating role of artificial intelligence (AI) in enhancing strategic responsiveness and competitiveness in the digital transformation era.

Method: A quantitative explanatory approach was used, involving structured questionnaires distributed to 373 MSME owners and managers in Lowokwaru District, Malang City. Data analysis was conducted using Partial Least Squares–Structural Equation Modeling (PLS-SEM) with SmartPLS software to assess both direct and moderating effects. Reliability and validity tests were performed through composite reliability and average variance extracted (AVE) analysis.

Result: We found that customer orientation, competitor orientation, and brand commitment significantly and positively influenced MSME performance. However, AI did not significantly moderate these relationships, indicating that AI adoption among MSMEs is still in the early stages and has not yet shown measurable effects. Despite this, AI adopters exhibited improved operational efficiency and decision-making accuracy.

Practical Implications for Economic Growth and Development: The study highlights the need for MSMEs to strengthen customer focus, competitor awareness, and brand commitment to enhance business performance. Although AI did not show a moderating effect, gradual adoption of AI technologies could improve efficiency, innovation, and competitiveness, fostering regional economic growth.

Originality/Value: This research contributes to the literature by integrating AI as a moderating variable in the relationship between marketing orientation and business performance, offering empirical evidence that extends AI-based strategic capability models within the MSME context.

Keywords: *Artificial Intelligence, Customer Orientation, Competitor Orientation, Brand Commitment, MSME Performance*

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INTRODUCTION

Micro, Small, and Medium Enterprises (MSMEs) are the backbone of Indonesia's economy, with approximately 59,519,650 registered businesses as of December 2024, according to data from the Ministry of Cooperatives and MSMEs (Utama et al., 2025). MSMEs contribute significantly to Indonesia's economic growth, accounting for nearly 99% of all business entities, making them the dominant force within the national economic structure. Despite their importance, MSMEs face numerous challenges, particularly in productivity, innovation, and digital transformation, which directly impact their overall performance. In Malang City, data from Statistics Indonesia (BPS, 2024) shows around 29,058 active MSMEs across sectors like culinary, fashion, and handicrafts. The Malang City Government aims to elevate 48,000 MSMEs to a higher level by 2025, which reflects both promising potential and significant challenges, especially in adapting to the digital era and global competition.

A key factor in improving MSME performance is customer orientation. Customer orientation refers to the ability of business owners to consistently understand and meet consumer needs (Indrasari et al., 2024). MSMEs with a strong customer-oriented approach are more responsive to shifts in market behavior and consumer preferences, helping entrepreneurs build long-term relationships, enhance customer satisfaction, and foster loyalty. In addition, competitor orientation is crucial for MSME success. This concept reflects the ability of MSMEs to identify and analyze the strategies, strengths, and weaknesses of their competitors (Komariah et al., 2024). Effective competitor analysis allows business owners to adjust products, pricing, and marketing strategies, helping them stay relevant and adaptable to a dynamic business environment.

Brand commitment is another important factor in improving MSME performance. It represents the extent to which business owners are dedicated to developing, maintaining, and strengthening their brand identity (Ha et al., 2025). MSMEs with strong brand commitment maintain consistent quality and build a positive image, which fosters trust and long-term customer loyalty, supporting sustainable business growth. Artificial intelligence (AI) is also considered as a moderating variable, either strengthening or weakening the influence of customer orientation, competitor orientation, and brand commitment on MSME performance. AI enables large-scale customer data analysis, offering deeper insights into consumer behavior and preferences (Abrokwah-Larbi, 2024). It also enhances real-time competitor analysis, allowing businesses to respond swiftly and accurately to market changes (Wahed et al., 2025). Moreover, AI supports brand commitment by ensuring a consistent and well-managed brand experience across multiple platforms (Utama et al., 2025).

Previous studies have demonstrated that customer orientation, competitor orientation, and brand commitment positively and significantly impact MSME performance (Ha et al., 2025; Ismail, 2023; Nurdiana et al., 2021; Al-Hakimi et al., 2023; Sigey et al., 2023; Jasin, 2022; Utama et al., 2025). These three factors represent valuable and unique internal capabilities that enhance competitiveness and business performance, aligning with the Resource-Based View (Barney & Clark, 2007). However, artificial intelligence (AI) has not yet been proven to moderate the relationship between these factors and MSME performance, primarily due to low adoption rates, limited digital literacy, and inadequate technological infrastructure (Adegbuyi et al., 2024; Wahab, 2025; Abaddi, 2025; Jagworks & Alqahtani, 2025). As a result, AI has not yet emerged as a strategic resource capable of strengthening the effects of customer orientation, competitor orientation, and brand commitment on MSME performance.

Most prior studies have focused on examining the direct effects of customer orientation, competitor orientation, and brand commitment on MSME performance. However, few have explored how AI functions as a moderating variable that may either strengthen or weaken these relationships. This study addresses this gap by integrating marketing orientation theory and technology adoption perspectives to understand the interaction between AI and MSME performance. The novelty of this research lies not in its geographic focus, but in its conceptual integration of AI into the market orientation-performance framework, offering new empirical insights within the context of Indonesian MSMEs undergoing digital transformation.

Therefore, the primary aim of this study is to analyze the impact of customer orientation, competitor orientation, and brand commitment on MSME performance, with AI examined as a moderating variable. Additionally, this research seeks to provide empirical evidence on how AI adoption can enhance strategic decision-making, operational efficiency, and competitive advantage for MSMEs.

Hypotheses Development

Customer Orientation and MSMEs Performance

Customer orientation is a management approach in which companies actively understand and meet customer needs and desires in every business activity. This approach significantly impacts the performance of Micro, Small, and Medium Enterprises (MSMEs) (Ismail, 2023). It requires MSMEs to consistently place customers at the center of strategic and operational decision-making. With customer orientation, MSMEs can build better relationships with customers, increase loyalty, and obtain valuable feedback for product and service development (Abrokwah-Larbi, 2024). Consistent with the Resource-Based View (RBV) theory, Barney and Clark (2007) argue that competitive advantage and sustainable firm performance can be achieved through the utilization of unique, rare, and difficult-to-imitate internal resources, including knowledge of customers.

H1: Customer orientation has a positive effect on MSME performance.

Competitor Orientation and MSMEs Performance

Competitor orientation refers to the ability and awareness of companies to actively monitor, analyze, and respond to competitors' strategies and activities in the market (Ha et al., 2025). This approach is crucial for Micro, Small, and Medium Enterprises (MSMEs) to identify opportunities and threats arising from the competitive environment. With competitor orientation, MSMEs can adjust their business strategies to stay relevant and competitive in a dynamic market (Alnawas & Farha, 2020). It also encourages faster innovation and adaptation to changing industry trends and consumer needs, influenced by competitor activities. According to the Resource-Based View (RBV) theory, Barney and Clark (2007) suggest that competitor orientation can be viewed as a form of market intelligence capability with strategic value. This orientation is reflected in the ability of MSMEs to analyze, understand, and respond to strategies implemented by competitors.

H2: Competitor orientation has a positive effect on MSME performance.

Brand Commitment and MSMEs Performance

Brand commitment refers to the emotional and psychological attachment that business actors have to the brands they manage, which is reflected in their consistency and dedication to maintaining the brand's reputation (Alnawas & Abu Farha, 2020). This commitment motivates Micro, Small, and Medium Enterprises (MSMEs) to continuously improve the quality of their products and services in order to maintain customer trust (Ismail, 2023). Additionally, brand commitment helps MSMEs build long-term relationships with customers and increase overall brand value. According to the Resource-Based View (RBV) theory, intangible assets such as brands and customer relationships are valuable resources for companies (Barney & Clark, 2007). Brand commitment reflects MSMEs' dedication to consistently maintaining brand quality, image, and value in the eyes of consumers.

H3: Brand commitment has a positive effect on MSME performance.

Artificial Intelligence, Customer Orientation, and MSMEs Performance

Artificial intelligence, in the context of customer orientation, helps Micro, Small, and Medium Enterprises (MSMEs) collect and analyze customer data more accurately and quickly. AI also enables more effective personalization of services, allowing customer needs to be better met (Magableh et al., 2024). Therefore, AI acts as a tool that strengthens the relationship between customer orientation and MSME business performance (Abrokwah-Larbi, 2024). Furthermore, the Resource-Based View (RBV) theory explains that artificial intelligence can be seen as a technological capability that enhances the value of customer orientation (Barney & Clark, 2007). AI enables MSMEs to process large amounts of customer data, identify behavioral patterns, and offer more targeted marketing strategy recommendations.

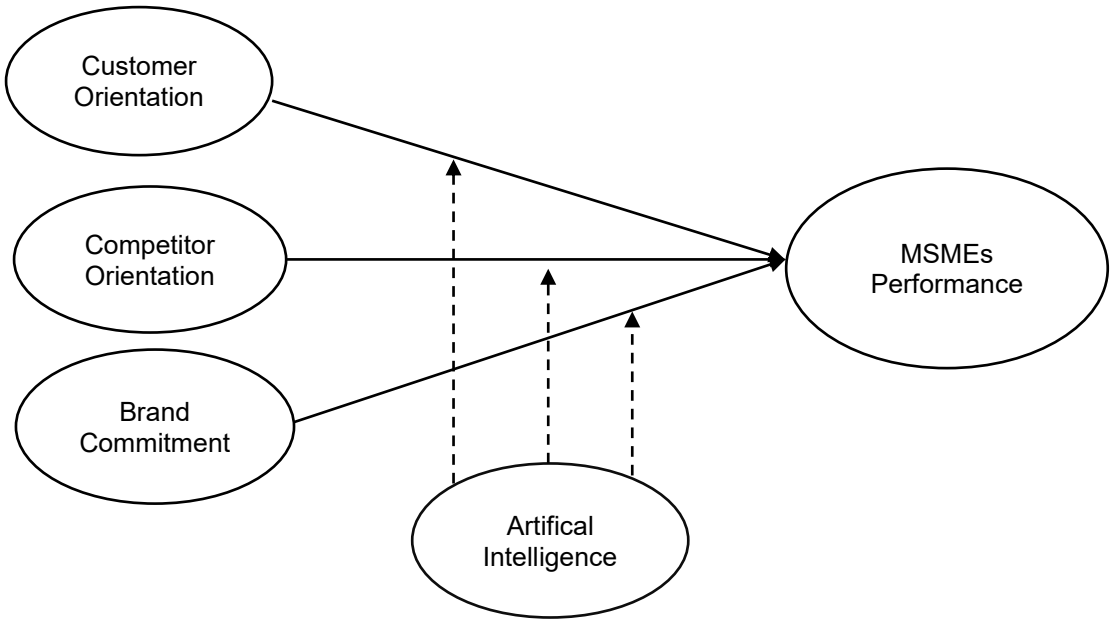
H4: Artificial intelligence moderates the effect of customer orientation on MSME performance.

Artificial Intelligence, Competitor Orientation, and MSMEs Performance

Artificial intelligence provides advanced analytical capabilities to collect and process competitive data in real-time (Ha et al., 2025). With AI, Micro, Small, and Medium Enterprises (MSMEs) can monitor competitors' strategies and activities more effectively, enabling faster and more informed decision-making. It also aids in identifying market trends and new opportunities that can be leveraged to outperform competitors (Wahed et al., 2025). Therefore, AI strengthens the relationship between competitor orientation and MSME business performance by improving the accuracy and speed of decision-making. According to the Resource-Based View (RBV) theory, Barney and Clark (2007) suggest that AI can serve as a technological resource, helping MSMEs identify competitor strategies more quickly and accurately, such as through the analysis of prices, market trends, and competitor behavior on digital platforms. AI enables MSMEs to be more responsive in adjusting strategies and maintaining a competitive advantage.

H5: Artificial intelligence moderates the effect of competitor orientation on MSME performance.

Figure 1. Research Framework



Source: Developed by the authors (2025)

Artificial Intelligence, Brand Commitment, and MSMEs Performance

Artificial intelligence enables Micro, Small, and Medium Enterprises (MSMEs) to create more personalized and relevant interactions with customers through various digital platforms (Abrokwah-Larbi, 2024). AI can assist in managing brand reputation by monitoring real-time customer feedback and providing quick responses (Utama et al., 2025). It also enhances the efficiency of marketing and brand communication, expanding the brand's reach and impact in the market. According to the Resource-Based View (RBV) theory, Barney and Clark (2007) argue that artificial intelligence can strengthen MSMEs' branding strategies through service personalization, more effective digital marketing, and customer sentiment analysis. By utilizing AI, the brand commitment of MSMEs can be communicated more consistently and accurately to consumers. This will strengthen customer loyalty and amplify the positive impact of brand commitment on MSME performance.

H6: Artificial intelligence moderates the effect of brand commitment on MSME performance.

METHOD

This study adopts a quantitative research design with an explanatory approach. It employs a systematic method that involves the measurement and analysis of numerical data to test hypotheses and generate generalizable findings. The study aims to examine the influence of customer orientation, competitor orientation, and brand commitment as independent variables (X) on MSMEs performance (Y), with artificial intelligence serving as the moderating variable (Z). The explanatory approach is chosen because it allows the researcher to identify and explain causal relationships among variables based on established theoretical frameworks. Data will be collected through structured questionnaires distributed to MSME actors in Lowokwaru District, Malang City. A total of 373 MSME respondents will be selected using a purposive sampling technique. Data analysis will be conducted using Structural Equation Modeling with a Partial Least Squares approach (PLS-SEM), supported by SmartPLS software. This method is well-suited for complex models involving multiple latent variables and is particularly effective for studies with small to medium sample sizes (Hair et al., 2019). Furthermore, PLS-SEM enables the researcher to test moderation effects effectively.

Table 1. Operational Variables

Variable	Indicator	Statement
Artifical Intelligence (AI)	Knowledge and Use of Artificial Intelligence	I understand the benefits of using Artificial Intelligence (AI) to improve business efficiency.
		I keep up with the latest developments regarding the use of Artificial Intelligence in business.
		I understand how Artificial Intelligence can assist in setting dynamic pricing.
	Artificial Intelligence-Based Competitor Innovation	I am aware that my competitors have implemented Artificial Intelligence technology in their products or services.
		I study innovative strategies based on Artificial Intelligence that are used by competitors.
		I adjust my business operations according to AI-driven innovations adopted by competitors.
	Digital Price Competition	I regularly monitor the prices of similar products offered by competitors through e-commerce or other digital platforms.
		I adjust the prices of my products or services based on competitor price analysis on digital platforms.
	Market Response to	I adapt my business offerings according to emerging technological trends.

Variable	Indicator	Statement
	Technological Trends	I receive positive feedback from customers regarding the adoption of new technologies in my business.
Brand Commitment (BC)	Sales Growth	I feel proud of my business brand and believe it has a positive impact on sales.
		I strive to improve brand quality to support sales growth.
		My brand identity contributes to increasing customer purchase interest.
	Customer Loyalty Level	I believe that brand commitment enhances customer loyalty.
		My customers continue to choose my products because they are emotionally attached to my brand.
		I maintain brand consistency so that customers keep coming back to buy.
		I often receive testimonials from customers about my business brand.
	Operational Efficiency of the Company	A clear brand identity helps minimize repetitive promotional costs.
		I believe my operational system has become more efficient thanks to my brand's reputation.
MSMEs Performance (MP)	Revenue Growth	My business revenue has consistently increased over the past few years.
		I have recorded a year-on-year increase in sales results.
		My products or services generate higher income than before.
	Profit Improvement	I have successfully increased the net profit of my business over time.
		My business profits have grown due to the strategies I implemented.
		I am able to reduce production costs and increase profits.
	Business Productivity	I am capable of increasing the number of products/services produced within a certain period.
		I use resources efficiently to achieve maximum results.
		Time and effort in the production process are utilized optimally.
	Customer Satisfaction	My customers often show satisfaction with my products or services.
		I regularly receive positive feedback from customers.
		I conduct surveys or evaluations to measure customer satisfaction.
		Customer satisfaction is the top priority in running my business.
Competitor Orientation (COOR)	Competitor Analysis	I immediately adjust my business strategy if competitors make significant changes.
		I quickly respond to innovations or promotions carried out by competitors.
	Responsiveness to Competitors	I update my products/services to remain competitive against rivals.
		I am always ready to face changes in competitors' tactics.
	Understanding of Competitors' Strengths	I know my competitors' main advantages in the eyes of customers.
		I understand the resources or technologies that make competitors superior.

Variable	Indicator	Statement
		I learn from competitors' strengths to improve my business.
		I am aware of potential competitive threats from both new and existing competitors.
Customer Orientation (CUOR)	Customer Satisfaction	I understand the needs and desires of my customers.
		I actively seek to find out what customers want.
		I strive to provide services that exceed customer expectations.
		I take customer complaints seriously and respond to them appropriately.
	Customer Satisfaction Index	I use survey results to improve the quality of products or services.
		I record and analyze customer satisfaction as evaluation material.
		I use specific indicators to assess the level of customer satisfaction.
	Ease of Interaction	I provide various communication channels.
		I respond quickly to customer inquiries or messages.
		I make it easy for customers to give feedback or suggestions.

Source: Compiled by the authors (2025)

RESULT AND DISCUSSION

Demographic Characteristics of Respondents

This research was conducted in Malang City, renowned as the City of Education, home to over 60 universities and hundreds of thousands of students from various regions across Indonesia. Additionally, Malang is a central hub for trade, services, and tourism in East Java, offering excellent accessibility and accommodation. The city has evolved into a dynamic, creative metropolis, marked by its cultural diversity and tolerance. Malang is divided into five sub-districts: Blimbing, Kedungkandang, Klojen, Lowokwaru, and Sukun. According to data from the Malang City Statistics Agency (2024), the Lowokwaru District boasts the highest number of Micro, Small, and Medium Enterprises (MSMEs), with a total of 9,448 units. The culinary sector leads, accounting for 5,539 of these MSMEs.

Table 2. Demographic Characteristics of Respondents

Demographic Information	Categories	Frequency	%
Sector	Culinary	373	100
Gender	Male	239	64.07
	Female	134	35.93
Position	Owner	178	47.72
	Employee	195	52.28
Length of Time in Business	2 – 5 years	115	30.83
	6 – 10 years	151	40.48
	> 10 years	107	28.69

Source: Processed data (2025)

Table 2 presents the demographic characteristics of respondents, all of whom are from the culinary sector, with a total of 373 respondents (100%). Regarding gender, the majority were male, with 239 respondents (64.07%), while female respondents totaled 134 (35.93%). In

terms of position, there were slightly more employees than business owners, with 195 employees (52.28%) compared to 178 business owners (47.72%). When it comes to the length of time in business, most respondents have been operating their businesses for 6-10 years (40.48%), followed by those who have been in business for 2-5 years (30.83%). Overall, the table shows that the majority of culinary business owners are male, work as employees, and have substantial experience in running their businesses.

Outer Loading

Table 3 presents the results of the outer loading analysis, which was used to assess convergent validity—an evaluation of how well the indicators reflect their respective constructs. According to Hair et al. (2019), indicators are considered valid if their outer loading values are ≥ 0.70. The analysis revealed that all indicators met this requirement, with values ranging from 0.790 to 0.954. For example, the indicators for Artificial Intelligence had values exceeding 0.90, while those for MSME Performance ranged from 0.802 to 0.879. Additionally, all indicators for Brand Commitment, Customer Orientation, and Competitor Orientation were above the minimum threshold, indicating strong convergent validity.

Table 3. Outer Loading

	AI	MP	BC	BC-AI	CUOR	CUOR-AI	COOR	COOR-AI
AI1	0.935							
AI10	0.942							
AI2	0.932							
AI3	0.931							
AI4	0.930							
AI5	0.952							
AI6	0.936							
AI7	0.943							
AI8	0.929							
AI9	0.930							
BC1			0.939					
BC2			0.951					
BC3			0.957					
BC4			0.934					
BC5			0.927					
BC6			0.961					
BC7			0.948					
BC8			0.962					
BC9			0.939					
MP1		0.869						
MP10		0.893						
MP11		0.883						
MP12		0.853						
MP13		0.876						
MP2		0.873						
MP3		0.864						
MP4		0.881						
MP5		0.885						
MP6		0.871						
MP7		0.885						
MP8		0.869						
MP9		0.881						
BC-AI				0.997				

	AI	MP	BC	BC-AI	CUOR	CUOR-AI	COOR	COOR-AI
COOR1							0.958	
COOR2							0.950	
COOR3							0.942	
COOR4							0.954	
COOR5							0.929	
COOR6							0.957	
COOR7							0.942	
COOR8							0.955	
CUOR-AI						0.996		
COOR-AI								1.001
CUOR1					0.912			
CUOR7					0.917			
CUOR2					0.920			
CUOR4					0.931			
CUOR3					0.935			
CUOR9					0.939			
CUOR5					0.940			
CUOR8					0.942			
CUOR6					0.948			
CUOR10					0.953			

Source: Processed data (2025)

Discriminant Validity

Table 4 presents the results of the discriminant validity test using the Fornell & Larcker (1981) criterion, which shows that all constructs meet the required standard. Specifically, the square root of the Average Variance Extracted (AVE) for each construct is greater than its highest inter-construct correlation. For instance, the square root of AVE for Artificial Intelligence was 0.936, which exceeded its highest correlation of 0.590 with MSME Performance. Similar results were observed for Brand Commitment (0.946), Customer Orientation (0.934), Competitor Orientation (0.948), and MSME Performance (0.876). These findings confirm that each construct is empirically distinct from the others, validating the discriminant validity of the model.

Table 4. Discriminant Validity

	AI	MP	BC	BC-AI	CUOR	CUOR-AI	COOR	COOR-AI
AI	0.936							
MP	0.590	0.876						
BC	-0.071	0.343	0.946					
BC-AI	-0.005	-0.012	-0.004	1.000				
CUOR	0.004	0.469	0.026	-0.073	0.934			
CUOR-AI	-0.013	-0.046	-0.073	0.011	-0.011	1.000		
COOR	0.017	0.305	-0.023	-0.017	-0.002	-0.050	0.948	
COOR-AI	-0.004	-0.005	-0.017	-0.061	-0.050	0.020	-0.019	1.000

Source: Processed data (2025)

Validity and Reliability of Constructs

Table 5 presents the results of the construct validity and reliability tests, showing that all research variables exhibit very strong values. The values for Cronbach's Alpha, rho_A, and composite reliability are all above 0.70, with most nearing or equal to 1.00, indicating that the research instrument demonstrates a very high level of internal consistency. Furthermore, the

Average Variance Extracted (AVE) values for each construct exceed 0.50, ranging from 0.767 to 1.000. This suggests that the indicators for each construct are able to explain more than 50% of the variance, thus meeting the criteria for convergent validity. Additionally, a study by Beyari (2025) found that data variance and standard deviation play a critical role in improving Cronbach's Alpha, having a more significant influence than the range of items. This supports the notion that higher data variability strengthens the reliability of research instruments.

Table 5. Validity and Reliability of Constructs

Construct	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
MSME Performance	0.975	0.975	0.977	0.767
Customer Orientation	0.984	0.984	0.986	0.872
Competitor Orientation	0.984	0.986	0.986	0.899
Artificial Intelligence	0.984	0.985	0.986	0.876
Brand Commitment	0.985	0.987	0.987	0.896
Brand Commitment - Artificial Intelligence	1.000	1.000	1.000	1.000
Customer Orientation - Artificial Intelligence	1.000	1.000	1.000	1.000
Competitor Orientation - Artificial Intelligence	1.000	1.000	1.000	1.000

Source: Processed data (2025)

R-Square

Table 6 presents the R-Square values, which were used to evaluate the goodness-of-fit of the structural model. According to Hair et al. (2019), R-Square values of 0.25, 0.50, and 0.75 are categorized as weak, moderate, and strong, respectively. The R-Square value for MSME Performance was 0.800, indicating that 80% of its variance is explained by Customer Orientation, Competitor Orientation, Brand Commitment, and Artificial Intelligence. This value places the model in the strong category, demonstrating a high level of explanatory power.

Table 6. R-Square Test Result

Construct	R-Square	Adjusted R-Square
MSME Performance	0.800	0.796

Source: Processed data (2025)

Hypotheses Testing

The results presented in Table 7 indicate that, in Model 1, customer orientation, competitor orientation, and brand commitment all have significant positive effects on Micro, Small, and Medium Enterprises (MSMEs) performance. Among these, customer orientation emerged as the most dominant determinant, showing a highly significant and positive impact on MSME performance. In Model 2, the moderating role of artificial intelligence is not evident. Artificial intelligence did not influence the effects of customer orientation, competitor orientation, and brand commitment on MSMEs performance. Instead, artificial intelligence moderation showed a negative and insignificant effect on these relationships. This finding underscores that artificial intelligence has not yet been able to positively and significantly moderate the effects of customer orientation, competitor orientation, and brand commitment on MSMEs performance.

Table 7. Hypotheses Testing Result

Tested Hypotheses	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T	P Values	Conclusion
Model 1						
Customer Orientation → MSMEs Performance	0.462	0.463	0.024	19.368	0.000	Supported
Competitor Orientation → MSMEs Performance	0.306	0.306	0.023	13.236	0.000	Supported
Brand Commitment → MSMEs Performance	0.382	0.382	0.026	14.691	0.000	Supported
Model 2						
Customer Orientation - Artificial Intelligence → MSMEs Performance	0.009	0.011	0.024	0.386	0.700	Not Supported
Competitor Orientation - Artificial Intelligence → MSMEs Performance	0.035	0.036	0.023	1.523	0.128	Not Supported
Brand Commitment - Artificial Intelligence → MSMEs Performance	0.034	0.036	0.024	1.431	0.153	Not Supported

Source: Processed data (2025)

Discussion

The results presented in this study indicate that, in Model 1, customer orientation, competitor orientation, and brand commitment all exhibit positive and significant relationships with the performance of Micro, Small, and Medium Enterprises (MSMEs). Specifically, customer orientation emerged as the most dominant determinant, showing a highly significant and positive impact on MSME performance. This finding is consistent with prior research, which demonstrates that customer orientation significantly affects MSME performance (Ha et al., 2025; Ismail, 2023; Nurdiana et al., 2021). In the context of MSMEs in Malang, the strong local competition and growing consumer awareness of product quality and service have motivated entrepreneurs to focus on building close relationships with customers and offering personalized services to attract and retain them. Consequently, MSMEs with a robust customer orientation are better positioned to adapt their products and marketing strategies to changing consumer preferences, thereby enhancing satisfaction, loyalty, and overall business performance. This finding aligns with the Resource-Based View (RBV) theory (Barney & Clark, 2007), which posits that customer orientation is an internal capability that is valuable,

difficult to imitate, and can help firms build a sustainable competitive advantage through a deep understanding of customer needs.

Similarly, the positive and significant coefficient indicates that an increase in competitor orientation is associated with a rise in MSME performance. This suggests that the more entrepreneurs gather and analyze information about their competitors, the better their MSMEs perform. This result corroborates earlier studies that highlight the significant impact of competitor orientation on MSME performance (Al-Hakimi et al., 2023; Ha et al., 2025; Sigey et al., 2023). The highly competitive nature of local industries in Malang, particularly in the culinary sector, necessitates that MSMEs remain vigilant about competitor strategies. This enables businesses to adapt quickly through agile pricing, innovation, and marketing strategies, ultimately improving their performance. In line with RBV theory (Barney & Clark, 2007), competitor orientation becomes a strategic knowledge resource that strengthens the competitiveness of MSMEs. By understanding the strengths and weaknesses of competitors, MSMEs can devise unique strategies that are difficult for competitors to replicate.

Additionally, the positive and significant coefficient indicates that an increase in brand commitment leads to better MSME performance. As consumers become more attached to a brand, the performance of MSMEs improves. This finding aligns with prior research, which demonstrates that brand commitment significantly influences MSME performance (Ismail & Mohamad, 2025; Jasin, 2022; Utama et al., 2025). The growing competition and consumer preference for authentic, locally rooted products in Malang have encouraged MSMEs to focus on building strong brand identities and maintaining consistent quality and service. By fostering strong brand commitment, these businesses are able to build a loyal customer base, driving repeat purchases and ensuring long-term business success. This finding also supports RBV theory (Barney & Clark, 2007), as a strong brand is considered a high-value intangible asset. Brand commitment, embedded in the minds of consumers, becomes a resource that is difficult to replace, thereby supporting MSME performance.

However, the negative and insignificant coefficient for the relationship between customer orientation and artificial intelligence (AI) moderation suggests that AI has not been able to significantly influence the effect of customer orientation on MSME performance. This result aligns with prior research indicating that customer orientation has no significant effect on MSME performance when moderated by AI (Adegbuyi et al., 2024; Wahab, 2025). The limited adoption and understanding of AI among MSME entrepreneurs in Malang, combined with high costs and system complexity, hinder its effective integration into daily operations. Consequently, AI has not yet played a significant moderating role in strengthening the relationship between customer orientation and business performance. This is consistent with RBV theory (Barney & Clark, 2007), where AI has not yet become a valuable core capability for MSMEs. Therefore, its role in moderating the relationship between customer orientation and performance remains insignificant.

Similarly, the negative and insignificant coefficient for the relationship between competitor orientation and AI moderation indicates that AI has no moderating effect on the relationship between competitor orientation and MSME performance. This finding aligns with research suggesting that many MSMEs lack the adequate information systems needed to monitor competitors effectively (Abaddi, 2025; Jagworks & Alqahtani, 2025). The limited digital infrastructure and low technology integration among MSME entrepreneurs in Malang cause them to rely on traditional methods of competitor analysis rather than leveraging AI tools. As a result, low digital literacy and the perceived complexity of AI hinder its adoption, reducing its effectiveness in moderating the influence of competitor orientation on business performance. In accordance with RBV theory (Barney & Clark, 2007), AI technology has not yet been transformed into a rare and valuable strategic resource, preventing it from strengthening the influence of competitor orientation on MSME performance.

Lastly, the negative and insignificant coefficient for the relationship between brand commitment and AI moderation suggests that AI has not affected the impact of brand commitment on MSME performance. This finding is consistent with previous research indicating that brand commitment has no significant effect on MSME performance when

moderated by AI (Utama et al., 2025). Many MSME entrepreneurs in Malang continue to rely on traditional branding methods, such as personal networks and word-of-mouth promotion. The adoption of AI for branding analytics and customer insights remains limited due to low digital literacy and financial constraints. As a result, AI has not played a significant role in enhancing brand commitment or improving its influence on business performance. These results further support RBV theory (Barney & Clark, 2007), which emphasizes the importance of unique and valuable resources in creating a competitive advantage. Since AI has not yet become a core strategic asset for MSMEs, it cannot strengthen the relationship between brand commitment and MSME performance.

CONCLUSION

This study investigates the impact of customer orientation, competitor orientation, and brand commitment on the performance of Micro, Small, and Medium Enterprises (MSMEs) in the culinary sector, with artificial intelligence serving as a moderating variable. The findings reveal that customer orientation has a positive and significant effect on MSME performance, while artificial intelligence exhibits a negative moderating effect. Similarly, competitor orientation positively influences MSME performance, but again, artificial intelligence negatively moderates this relationship. Brand commitment also has a positive and significant effect on MSME performance, though its relationship is similarly negatively moderated by artificial intelligence.

These findings carry several important implications for MSME practitioners and entrepreneurs. MSME entrepreneurs are advised to enhance customer orientation through ongoing service improvements and better fulfillment of consumer needs, ultimately increasing customer satisfaction and loyalty. They should also place a strong emphasis on competitor orientation by continuously monitoring and responding promptly to competitors' activities, ensuring that their business strategies remain competitive and relevant. Additionally, building strong brand commitment is crucial, which can be achieved by maintaining product quality, offering excellent service, and ensuring consistent marketing communications.

For future research, it is recommended to explore the interaction effects of artificial intelligence with other variables beyond those considered in this study. Investigating this relationship using different variables or methods could provide deeper insights into the moderating influence of artificial intelligence, potentially offering more specific implications for MSMEs in various sectors.

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