

# The Effect Of Digital Skills And Digital Knowledge On The Performance Of Micro-Enterprise Actors In The Culinary Sector In Cilegon City Through Entrepreneurial Spirit As A Mediation Variable

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## ABSTRACT

Culinary MSMEs in Cilegon City play a crucial role in the regional economy, but the low digital skills and digital knowledge of business actors pose a challenge in today's technological developments. This study aims to determine the extent of influence of digital skills and digital knowledge on business actor performance, with entrepreneurial spirit as a mediating variable. The research method used is quantitative with a causal approach. The study population consisted of 3,681 business actors, with a sample of 120 respondents taken using the technique. cluster area sampling. Data were collected through a questionnaire with a Likert scale of 1-5 and analyzed using *Structural Equation Modelling* (SEM) based Partial Least Square (PLS). The results of the study indicate that digital skills and entrepreneurial spirit have a direct positive and significant effect on performance. Digital knowledge does not have a significant direct effect on performance. Digital skills do not have a significant effect on entrepreneurial spirit, but digital knowledge has a positive and significant effect on entrepreneurial spirit. Entrepreneurial spirit does not mediate the relationship between digital skills and performance, but mediates the relationship between digital knowledge and performance. In conclusion, improving digital skills and digital knowledge accompanied by strengthening the entrepreneurial spirit can be an effective strategy to boost the performance of micro-entrepreneurs in the culinary sector in Cilegon City.

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## INTRODUCTION

Human resource management plays a central role in realizing an organization's strategic goals by aligning human resource strategies with the company's vision and mission (Telukdarie et al., 2022). This function is not only oriented towards improving individual performance but also emphasizes the active involvement and development of employee potential, which ultimately contributes to organizational success and strengthens competitiveness in the face of a dynamic business environment. According to Telukdarie (2022), human resource management specifically seeks to optimize the workforce's contribution to achieving organizational goals, thus becoming a determining factor in creating competitive advantage.

Furthermore, the challenges of human resource management in the digital era are increasingly complex, driven by rapid technological developments and shifting dynamics in the workplace (Mudjahidin et al., 2024). In this context, organizations are required to manage a variety of crucial issues, including maintaining data security, increasing employee engagement, and ensuring continuous skills development to remain relevant to current demands. As Mudjahidin (2024) points out, the digital era demands the development of new competencies relevant to current developments, necessitating the investment in training and development programs to adapt to ongoing technological changes.

This is in line with the fact that Micro, Small, and Medium Enterprises (MSMEs) have a strategic role in supporting the Indonesian economy, as evidenced by their contribution to Gross Domestic Product

(GDP) of 61% or equivalent to IDR 9,580 trillion, and their ability to absorb up to 97% of the total workforce in Indonesia (Coordinating Ministry for Economic Affairs, 2023). These figures confirm that MSMEs not only function as a driving force of the economy, but also as a significant provider of employment in the community. The important role of MSMEs is increasingly relevant in facing global challenges, including global economic uncertainty that requires stability and resilience from the domestic sector. This shows that strengthening the MSME sector is not only important nationally, but must also be pursued at the regional level, such as in Cilegon City, which has great potential.

Cilegon City, often known as an industrial city in Banten Province, also has significant potential in the Micro and Small Enterprises (MSMEs) sector. This sector encompasses various types of businesses, from handicrafts and processed foods to creative products. Data from the Cilegon City Cooperatives and MSMEs Office (2024) shows that MSMEs contribute approximately 15% to the city's total economy, with more than 18,279 active businesses spread throughout Cilegon. The majority of these MSMEs operate in the food and beverage sector, which accounts for approximately 20% of the total.

*State Of The Art* This study refers to several recent studies, such as a study conducted by Nuruliza et al. (2024) which showed that digital literacy has a significant influence on improving the innovative performance of MSMEs in the culinary sector. This influence is mediated by entrepreneurial skills, which demonstrates a close relationship between mastery of digital skills and an entrepreneurial spirit in creating business success. In line with this, research by Rahmawati et al. (2024) confirms that digital skills have been proven to make a significant contribution to improving performance and encouraging innovative behavior in digital-based companies. This indicates a close relationship between mastery of these skills and an entrepreneurial spirit, which plays a crucial role in spurring innovation and improving overall organizational performance (Rahmawati et al., 2023).

According to Fernandez & Vargas (2023), digital entrepreneurship has been proven to drive improved performance of micro, small, and medium enterprises (MSMEs) in Malaysia. This finding confirms that entrepreneurial characteristics, digital ecosystem support, and mastery of digital skills play a crucial role in strengthening the entrepreneurial spirit to achieve more optimal business results (Fernandez & Vargas, 2023). Similarly, Buyukyazici (2023) explains that digital skills have been shown to play a significant role in improving MSME performance through strengthening knowledge management practices and utilizing digital capabilities more effectively. This study emphasizes that basic digital skills, digital operational capabilities, and digital integration capabilities are key factors driving success in the ever-evolving digital economy (Buyukyazici, 2023).

A study exploring the impact of entrepreneurial orientation on the performance of small and medium-sized enterprises (SMEs) in Jakarta indicated a positive correlation between entrepreneurial orientation and business performance. The results revealed that individuals with an entrepreneurial spirit tend to demonstrate higher levels of productivity and innovation, which in turn directly impacts their performance in the workplace (Isharyani et al., 2024).

Many previous studies have examined the factors that influence performance related to digital skills, digital knowledge and entrepreneurial spirit, but they still produce different findings between studies. *First*, The Influence of Digital Skills on Performance obtained significant and insignificant results (Azizah, 2024; Yanti, 2024). *Second*, the relationship between digital knowledge and performance has significant results (Rojas-García et al., 2024), (Aristei et al., 2024) and is not significant (Firmansyah & Dede, 2024; Riawan et al., 2023). *Third*, The relationship between Entrepreneurial Spirit and performance has significant results (Aswandy & Mariyati, 2022; Farhan et al, 2022; Putri & Iffan, 2024) and is not significant (Primadhita, 2021; Martasudira et al, 2025).

This research gap is particularly interesting in examining digital skills, digital knowledge, and entrepreneurial spirit as factors influencing performance. Therefore, this study is expected to fill this gap by providing new insights into how digital skills, digital knowledge, and entrepreneurial spirit contribute to the performance of micro-enterprises in Cilegon City.

Based on the phenomena and background that have been explained, the formulation of the research problem is, 1) Do digital skills have a direct and significant effect on the performance of micro-business actors in Cilegon City 2) Does digital knowledge have a direct and significant effect on the performance of micro-business actors in Cilegon City 3) Does entrepreneurial spirit have a direct and significant effect on the performance of micro-business actors in Cilegon City 4) Do digital skills have a direct and significant effect on entrepreneurial spirit 5) Does digital knowledge have a direct and significant effect on entrepreneurial spirit 6) Do digital skills through entrepreneurial spirit have an indirect and significant effect on the performance of micro-business actors in Cilegon City 7) Does digital knowledge through entrepreneurial spirit have an indirect and significant effect on the performance of micro-business actors in Cilegon City.

## **Literature Review**

### **The Influence of Digital Skills on the Performance of Micro-Entrepreneurs**

The impact of digital skills on the performance of micro-businesses is becoming an increasingly important issue in today's digital era. Digital skills encompass not only technical proficiency in using technological devices but also an understanding of and adaptability to various digital platforms that support productivity and work effectiveness. Research shows that strong digital competencies can positively contribute to performance across various industrial sectors. In his research, Ubaidillah revealed that in the transition from manual to digital methods, the use of Human Resource Information Systems (HRIS) and digital skills significantly impact employee performance. He demonstrated that employees with high digital competencies tend to be more disciplined and efficient in their work, thereby improving performance (Mujahed et al., 2024).

Furthermore, Rasinta et al. found that the combination of knowledge, skills, and work experience significantly contributes to employee performance. They emphasized the importance of skills and work motivation in achieving higher efficiency and productivity (Rasinta et al., 2023). This research supports the argument that employees with good digital skills are able to adapt to changes and challenges faced in the workplace, which in turn improves their work output (Tarihoran et al., 2023).

In line with the above findings, Prayogi et al. emphasized the importance of continuous training that includes digital competency development. They found that appropriate training can improve employee skills and knowledge, which directly impacts performance in the hospitality industry (Prayogi et al., 2024). With continuously updated digital skills, employees are better prepared to face evolving job demands.

### **The Influence of Digital Knowledge on the Performance of Micro-Enterprises**

The influence of digital knowledge on the performance of micro-entrepreneurs is a highly relevant topic in today's digital era. Digital knowledge encompasses the skills needed to use digital tools and technologies to complete tasks, communicate, and share information. These skills are increasingly important as many organizations transition to digital systems to improve operational efficiency and innovation. Research by Syech et al. shows that knowledge management has a significant positive impact on employee performance. Well-managed knowledge enables employees to share information, learn from each other, and adapt to new technologies, all of which contribute to improved performance (Nuryanto et al., 2024).

Furthermore, digital knowledge can serve as a driving factor in developing work motivation. Research by Al-Kharabsheh et al. explains that digital training mediates the relationship between digital skills and job performance. This means that employees who are more skilled in digital technology tend to be more motivated, which in turn improves their performance (Al-Kharabsheh et al., 2023). On the other hand, Sergeeva et al. state that digital competency readiness is key to facing the challenges of the digital economy. They argue that digital skills enable individuals to access information effectively and participate

in social and work tasks using digital tools. Improving these skills will positively impact performance (Srimulyani et al., 2023).

### **The Influence of Entrepreneurial Spirit on the Performance of Micro-Business Actors**

Research by Al-shami (2024) indicates that digital literacy and entrepreneurial orientation significantly contribute to business performance. Employees with strong entrepreneurial skills tend to use technology more efficiently, which increases productivity and innovation at work. Thus, these two skills complement each other in the context of performance improvement (Al-Shami et al., 2024).

Research by Aswandy & Mariyanti (2022) states that information and communication technology directly influences MSME performance, as well as indirectly through entrepreneurship. Entrepreneurship acts as a partial mediating variable. Conversely, Puwardi and Soelaiman highlight that entrepreneurial orientation and entrepreneurial leadership have a positive influence on business performance, indicating that employees led by an entrepreneurial leadership style are more likely to innovate and achieve business goals (Puwardi & Soelaiman, 2023). This suggests that a work environment that supports an entrepreneurial spirit must often be built by leaders committed to the process (Tiwari et al., 2024).

### **The Influence of Digital Skills on Entrepreneurial Spirit**

The influence of digital skills on entrepreneurial spirit is a crucial topic in the current context of education and human resource development. In the digital era, digital skills are a key factor in fostering an entrepreneurial spirit among individuals, including students. Good entrepreneurship education not only equips students with knowledge and skills, but also stimulates creativity and innovation, which are important components in building an entrepreneurial spirit (Faiz et al., 2024).

Meanwhile, Handayati et al. found that the interaction between an individual's prior knowledge and digital skills can significantly impact the development of their entrepreneurial spirit (Handayati et al., 2020). Digital skills support individuals in recognizing opportunities in their environment and innovating to overcome challenges. Thus, digital skills are an essential foundation for developing a productive entrepreneurial mindset. On the other hand, Kania and Februadi stated that good entrepreneurship education, which includes the teaching of digital skills, can shape an entrepreneurial mindset among students (Kania & Februadi, 2021). With the combination of technical skills and entrepreneurial knowledge, students can be prepared to take risks, evaluate opportunities, and build innovative businesses.

### **The Influence of Digital Knowledge on Entrepreneurial Spirit**

Sahrah et al. stated that digital knowledge plays a crucial role as a driving factor in building entrepreneurial intentions. In their research, they found that entrepreneurial intentions are associated with a better understanding of digital technology and that entrepreneurial action is viewed as a planned behavior heavily influenced by psychological factors (Sahrah et al., 2023). With a better understanding of technology, individuals become more confident in exploring existing business opportunities (Aditya et al., 2023).

Furthermore, Mustain et al. found that digital literacy significantly influences entrepreneurial intentions through entrepreneurial attitudes. They showed that when individuals have a good understanding of digital technology, their ability to take initiative in the business environment also increases, which ultimately increases their desire to start their own business (Mustain et al., 2023). Increased digital knowledge not only contributes to technical skills but also develops positive attitudes related to entrepreneurship (Gangata et al., 2024).

Furthermore, Wibowo and Narmaditya demonstrated that digital knowledge also serves as a mediator of students' entrepreneurial intentions, strengthening their entrepreneurial skills (Wibowo & Narmaditya, 2022). Through training and practical experience in using digital technology, students gain

not only theoretical knowledge but also the practical skills necessary for business success (Ragoobur et al., 2023).

### **The Influence of Digital Skills on the Performance of Micro-Business Actors Through Entrepreneurial Spirit**

Saadat et al. highlight the importance of entrepreneurship education, where an entrepreneurial spirit can be mediated by an entrepreneurial mindset built through digital knowledge (Saadat et al., 2021). When employees are trained in digital skills, they are better able to argue and seek opportunities that benefit not only themselves but also the organizations they work for. This demonstrates that digital skills and an entrepreneurial spirit support each other in creating a productive and innovative work environment (Rivera et al., 2024).

The concept that an entrepreneurial spirit can act as a mediator is further reinforced by Abun, who explains how an entrepreneurial mindset is a key driver of business transformation and digitalization (Abun, 2021). In this regard, employees with strong digital skills and an entrepreneurial spirit will be more effective in identifying market opportunities and implementing innovative solutions, potentially improving their performance (Kulkarni et al., 2024).

Furthermore, Abaddi demonstrated the mediating role of entrepreneurship in the relationship between digital skills and entrepreneurial intentions (Abaddi, 2023). When digital skills are used to support innovation, individuals become more motivated to take risks and create new value, which in turn contributes to overall employee performance (Xu et al., 2024).

### **The Influence of Digital Knowledge on the Performance of Micro-Business Actors through Entrepreneurial Spirit**

Research by Syah et al. shows that employees' strong knowledge and learning skills directly impact their performance. The researchers note that strong knowledge, in the context of learning, can lead to increased motivation and creativity, which are key to developing an entrepreneurial spirit (Syah et al., 2024). Employees with digital literacy tend to be better able to use existing tools and technologies to create innovations and solutions that can improve their performance (De Simone et al., 2022).

Meanwhile, Baskoro et al. explain that good knowledge-sharing practices within an organization can serve as a mediator between organizational justice and innovative behavior; the entrepreneurial spirit fostered by digital knowledge can facilitate such innovation. In this regard, knowledge sharing can strengthen employees' ability to adapt and innovate, ultimately positively impacting organizational performance (Baskoro et al., 2021).

From a theoretical perspective, Hidayat et al. demonstrated that knowledge management capabilities, including digital knowledge, can improve organizational performance. Good digital knowledge, when combined with an entrepreneurial culture, enables employees to be more proactive in creating new values and enhances the company's competitiveness in an increasingly competitive market (Hidayat et al., 2022). An entrepreneurial spirit serves as a driving force for individuals to encourage managers to utilize digital knowledge and innovate in their work, thereby improving overall workplace performance.

## **RESEARCH METHOD**

### **Types of research**

The research method used in this study is quantitative research with the aim of examining the influence of digital skills and digital knowledge on the performance of micro-entrepreneurs in the culinary sector in Cilegon City through entrepreneurial spirit as a mediating variable. In this study, the researcher

used a causal approach that aims to examine the cause-and-effect relationship between the independent variable and the dependent variable. In the context of this study, digital skills and digital knowledge act as independent variables that are suspected to have a direct or indirect influence on performance, with entrepreneurial spirit as a mediating variable.

### **Population and sample**

The population in this study was 3,681 micro-entrepreneurs in the culinary sector in Cilegon City. The sampling technique used was cluster area sampling. This technique is used to determine the sample when the object to be studied or the data source is very broad, because this research is located in Cilegon City which consists of several sub-districts and consists of various types of SMEs, so sampling needs to use stratified random sampling. This regional sampling technique is often used in two stages, namely the first stage determining the regional sample, and the next stage determining the people in that area by sampling (Sugiyono, 2014: 119). Determination of the number of samples refers to the 10 Times Rule formula, Hair et al. (2017), which is a minimum of 10 times the number of the largest formative indicators used to measure a single construct in the model. In this study, the largest number of indicators is the performance variable, which is 12 indicators and the entrepreneurial spirit variable, which is 12 indicators. With a total of 12 largest formative indicators, the minimum number of samples required is:  $10 \times 12$  indicators = 120 respondents.

### **Data collection techniques**

In this study, the data collection technique used was a survey method by distributing questionnaires using a Likert scale. Quantitative research uses the survey method as the primary technique for collecting data, with the questionnaire serving as the primary instrument for obtaining information from respondents. The questionnaire uses a Likert Scale which is used to measure respondents' attitudes, opinions, and perceptions regarding various aspects studied, with a range of answers usually consisting of "strongly disagree" to "strongly agree." This structured approach allows the study to quantify respondents' subjective answers, thus facilitating statistical analysis and interpretation of the data (Khan, 2024; Fitriana & Sukur, 2024).

Researchers also used several other data sources to support the research, including primary, secondary, and tertiary data. Measurements were conducted using a Rating Scale and a Likert Scale (1-5). The Rating Scale was used for performance instruments, while the Likert Scale (1-5) was used for digital skills, digital knowledge, and entrepreneurial spirit. According to Sugiyono (2022), the Rating Scale is more flexible, not limited to measuring attitudes but also to measuring respondents' perceptions of phenomena.

### **Data analysis techniques**

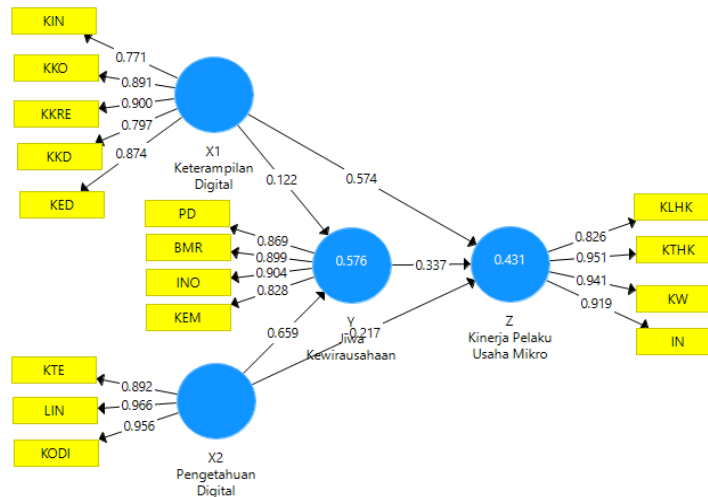
The data analysis technique in this study was conducted using a quantitative approach using the Partial Least Squares–Structural Equation Modelling (PLS-SEM) method. PLS-SEM was chosen because it has several advantages compared to other multivariate analysis techniques. PLS-SEM is an analytical technique for examining complex relationships between latent variables, particularly in relatively small sample sizes and does not require multivariate normal distribution of data (Hair et al., 2021).

The analysis was conducted to test the direct and indirect influence between latent variables, namely Digital Skills (X1), Digital Knowledge (X2), Entrepreneurial Spirit (Y), and Micro-Business Performance (Z). The research model built is a structural model that describes the causal relationship between variables, where the Entrepreneurial Spirit variable acts as a mediator variable in the relationship between the independent and dependent variables.

## **RESULTS AND DISCUSSION**

## Research result

For the first analysis, namely the measurement model (*outer model*) describes the relationship between the latent construct and its indicators. The evaluation of the measurement model aims to assess the validity and reliability of the constructs used in this study. Testing includes validity tests (convergent validity and discriminant validity) and reliability tests. This will be explained in Figure 1 below.



Next analysis Convergent validity for measures the extent to which indicators of a construct converge or share a high proportion of variance (Hair et al., 2021). Criteria used: 1) *Factor Loading*  $\geq 0.70$  indicates that the indicator has a strong correlation with its construct. The value loading 0.70 indicates that the construct explains at least 50% of the indicator's variance. 2) *Average Variance Extracted (AVE)*  $\geq 0.50$  indicates that the construct is able to explain at least 50% of the variance of its indicators. 3) *Composite Reliability (CR)*  $\geq 0.70$  indicates good internal consistency of the construct. This will be explained in Table 1 below.

Table 1 Convergent Validity Test Results

construct	Indicator	Factor Loading	AVE	CR	Ket.
Performance of micro business actors (Z)	Z-KLHK	0,826	0,829	0,951	Valid
	Z-KTHK	0,951			
	Z-KW	0,941			
	Z-IN	0,919			
Digital Skills (X <sub>1</sub> )	X1-KIN	0,771	0,719	0,927	Valid
	X1-KKO	0,891			
	X1-KKRE	0,900			
	X1-KKD	0,797			
	X1-KED	0,874			
Digital Knowledge (X <sub>2</sub> )	X2-KTE	0,892	0,881	0,957	Valid
	X2-LIN	0,966			
	X2-KODI	0,956			
Entrepreneur spirit (Y)	Y-PD	0,869	0,767	0,929	Valid
	Y-BMR	0,899			
	Y-INO	0,904			
	Y-KEM	0,828			

Data source *SmartPLS 3.0*, processed by the author (2025)

Based on Table 1, the results of the convergent validity test show that all constructs meet the established validity criteria. All values *factor loading* is above 0.70, the AVE value is above 0.50, and value *Composite Reliability* (CR) exceeded 0.70. This indicates that the indicators used are able to measure the latent construct well and consistently.

Furthermore, hypothesis testing in this study uses an approach bootstrapping with 5000 subsample to gain value *t*-statistics and *p*-value accurate. The criteria for accepting or rejecting a hypothesis are based on three main aspects. First, statistical significance indicates that the hypothesis is accepted if the value *t*-statistics > 1.96 (for a 95% confidence level) and *p*-value < 0.05. Second, the path coefficient must have a direction consistent with theoretical predictions (positive or negative). Third, the strength of the relationship between constructs is assessed based on the magnitude of the path coefficient, where a higher value indicates a stronger influence. With these three criteria, the validity and reliability of the research results can be statistically justified. The direct effect hypothesis test will be explained in Table 2 below.

Table 2 Results of Direct Hypothesis Testing

Hypothesis	Track	Path Coefficient	<i>T</i> Statistics	<i>P</i> Values	Decision	Status H <sub>0</sub>
H <sub>1</sub>	X <sub>1</sub> → Z	0,574	3,941	0,000	Accepted	Rejected
H <sub>2</sub>	X <sub>2</sub> → Z	-0,217	1,579	0,114	Rejected	Accepted
H <sub>3</sub>	Y → Z	0,337	2,317	0,021	Accepted	Rejected
H <sub>4</sub>	X <sub>1</sub> → Y	0,122	1,158	0,247	Rejected	Accepted
H <sub>5</sub>	X <sub>2</sub> → Y	0,659	6,856	0,000	Accepted	Rejected

Data source *SmartPLS 3.0*, processed by the author (2025)

Description: X<sub>1</sub> = Digital Skills, X<sub>2</sub> = Digital Knowledge, Y = Entrepreneurial Spirit, Z = Micro Business Actor Performance

Based on Table 2, as many as three direct hypotheses in this study were accepted (H<sub>1</sub>accepted) because it meets the statistical significance criteria with a value of *t*-statistics > 1.96 and *p*-value < 0.05 and two null hypotheses (H<sub>0</sub>) rejected.

The first hypothesis states "There is a significant positive direct influence on Digital Skills (X<sub>1</sub>) on the Performance of Micro Business Actors (Z)" is accepted with a path coefficient of  $\beta_1 = 0,574$  (*t*-statistics = 3,941; *p*-value = 0.000). This result shows H<sub>01</sub>rejected and H<sub>11</sub>accepted, meaning that digital skills have a positive and significant influence on the performance of micro-entrepreneurs in the culinary sector in Cilegon City.

The second hypothesis states "There is a significant positive direct influence of Digital Knowledge (X<sub>2</sub>) on the Performance of Micro Business Actors (Z)" was rejected, with a path coefficient of  $\beta_2 = -0,217$  (*t*-statistics = 1,579; *p*-value = 0.114). This result shows H<sub>02</sub>accepted and H<sub>12</sub>rejected, meaning that digital knowledge does not have a positive and insignificant influence on the performance of micro-entrepreneurs.

The third hypothesis states "There is a significant positive direct influence on Digital Skills (X<sub>1</sub>) on Entrepreneurial Spirit (Y)" was rejected with a path coefficient of  $\beta_4 = 0,122$  (*t*-statistics = 1,158; *p*-value = 0.247). This result shows H<sub>04</sub>accepted and H<sub>14</sub>rejected, meaning that digital skills have no positive and insignificant effect on the entrepreneurial spirit.

The fourth hypothesis states "There is a significant positive direct influence on Digital Knowledge (X<sub>2</sub>) on Entrepreneurial Spirit (Y)" is accepted with a path coefficient of  $\beta_5 = 0,659$  (*t*-statistics = 6,856; *p*-value = 0.000). This result shows H<sub>04</sub>rejected and H<sub>15</sub>accepted, meaning that digital knowledge has a positive and significant influence on the entrepreneurial spirit.

The fifth hypothesis which states "There is a direct positive significant influence of Entrepreneurial Spirit (Y) on the Performance of Micro Business Actors (Z)" is accepted with a path coefficient of  $\beta_3 = 0,337$  (*t*-



*statistics* = 2,317; *p-value* = 0.021). This result shows  $H_{03}$  rejected and  $H_{13}$  accepted, meaning that the entrepreneurial spirit has a positive and significant influence on the performance of micro-business actors. In addition to direct hypothesis testing, this study also tested an indirect hypothesis involving the mediating role of the Entrepreneurial Spirit variable (Y) in the relationship between exogenous variables and Micro-Business Actor Performance (Z). Mediation testing was conducted by analyzing the indirect path coefficient (*indirect effect*) using the procedure bootstrapping This is explained in Table 3 below.

Table 3 Results of Indirect Hypothesis Testing (Mediation)

Hypothesis	Mediation Path	Indirect Coefficient (c)	T	P	Decision	Status $H_0$
			Statistics	Values		
H <sub>6</sub>	X <sub>1</sub> → Y → Z	0,041	1,019	0,308	Ditolak	Diterima
H <sub>7</sub>	X <sub>2</sub> → Y → Z	0,222	2,043	0,041	Diterima	Ditolak

Data source *SmartPLS 3.0*, processed by the author (2025)

Description: X<sub>1</sub> = Digital Skills, X<sub>2</sub> = Digital Knowledge, Y = Entrepreneurial Spirit, Z = Performance of Micro-Business Actors.

Based on Table 3, one indirect hypothesis in this study is accepted ( $H_1$  accepted) because it meets the statistical significance criteria with a value of *t-statistics* > 1.96 and *p-value* < 0.05, and one null hypothesis ( $H_0$ ) rejected. The sixth hypothesis states "There is a significant positive indirect influence on Digital Skills (X<sub>1</sub>) on the Performance of Micro Business Actors (Z) through Entrepreneurial Spirit (Y) as a mediating variable" was rejected with an indirect path coefficient of  $\gamma_6 = 0,041$  (*t-statistics* = 1,019; *p-value* = 0.308). This result shows  $H_{06}$  accepted and  $H_{16}$  rejected, meaning that the entrepreneurial spirit is not able to significantly mediate the relationship between digital skills and the performance of micro-entrepreneurs. The mediation coefficient ( $\gamma_6 = 0.041$ ) is obtained from multiplying the path coefficient X<sub>1</sub>→Y (0.122) by the path coefficient Y→Z (0.337), namely  $0.122 \times 0.337 = 0.041$ . This shows that digital skills can only directly improve the performance of micro-entrepreneurs.

The seventh hypothesis which states "There is a significant positive indirect influence of Digital Knowledge (X<sub>2</sub>) on the Performance of Micro Business Actors (Z) through Entrepreneurial Spirit (Y) as a mediating variable" is accepted with an indirect path coefficient of  $\gamma_7 = 0,222$  (*t-statistics* = 2,043; *p-value* = 0.041). This result shows  $H_{07}$  rejected and  $H_{17}$  accepted, meaning that the entrepreneurial spirit is able to significantly mediate the relationship between digital knowledge and the performance of micro-entrepreneurs. The mediation coefficient ( $\gamma_7 = 0.222$ ) is obtained from multiplying the path coefficient X<sub>2</sub>→Y (0.659) by the path coefficient Y→Z (0.337), namely  $0.659 \times 0.337 = 0.222$ . This result shows that digital knowledge can improve the performance of micro-business actors indirectly by increasing the entrepreneurial spirit.

## Discussion

### The Influence of Digital Skills on the Performance of Micro-Business Actors in the Culinary Sector in Cilegon City

The results of the study show that there is a significant influence of digital skills on the performance of micro-entrepreneurs in line with the concept. *Entrepreneurial Orientation Theory*, which emphasizes that entrepreneurial capabilities and orientation are key factors in building competitive advantage. Within the scope of this research, digital skills serve as a strategic asset that enables MSMEs in Cilegon City to be more proactive, creative, and responsive in facing market changes. Optimal use of digital technology not only accelerates the decision-making process but also improves operational efficiency and encourages innovation in products and services elements that are at the core of this theory. Therefore, improving digital skills not only strengthens technical business management capabilities but also serves as

a key driver in implementing entrepreneurial orientation, which in turn impacts the achievement of maximum business performance (Lestari et al., 2024).

The findings of this study reinforce the results of previous studies conducted by Febrianawati (2024), Dahman et al. (2023), and Putri & Iffan (2024), which showed that digital skills have a positive impact on employee or business actor performance.

### **The Influence of Digital Knowledge on the Performance of Micro-Business Actors in the Culinary Sector in Cilegon City**

These findings indicate that the level of digital knowledge possessed by micro-entrepreneurs is not yet able to directly contribute positively to improving their performance. In other words, although digital knowledge is a crucial asset amidst technological advancements, this understanding cannot always be optimally applied to drive performance improvements, especially without practical skills, appropriate technology utilization strategies, and adequate resource support (Telukdarie et al., 2022).

The research findings show that digital knowledge does not have a positive or significant influence on the performance of micro-business actors which can be analyzed using the Entrepreneurial Orientation (EO) Theory framework. This theory asserts that competitive advantage is not solely determined by knowledge or information, but rather by the ability to implement that knowledge through proactive, innovative, and risk-taking attitudes. In the context of this research, although MSMEs in Cilegon City possess digital knowledge, the absence of a strong entrepreneurial orientation can hinder the process of converting this knowledge into effective and competitive business strategies (Mudjahidin et al., 2024). The results of this study reinforce the results of previous studies conducted by Firmansyah & Dede (2024); Riawan et al. (2023), which showed that digital knowledge does not positively influence employee or business actor performance. Furthermore, this study shows that digital knowledge does not have a positive or significant influence on micro-entrepreneur performance, presenting important theoretical implications. Referring to Entrepreneurial Orientation (EO) Theory, the possession of knowledge or information does not automatically create a competitive advantage if it is not accompanied by a proactive attitude, the ability to innovate, and the courage to take risks.

In the context of this research, although MSMEs in Cilegon City have mastered digital knowledge, the absence of an adequate entrepreneurial orientation can hinder the process of converting this knowledge into effective business strategies. These results not only provide a deeper understanding of the relationship between digital knowledge and performance but also open up space for the development of new research models that include intermediary variables, such as entrepreneurial orientation or technology adoption factors, as a link between digital knowledge and business performance. Therefore, this finding is one aspect of research novelty, as it provides an original contribution to the literature by confirming that digital knowledge, without relevant mediating or moderating factors, is not necessarily capable of significantly improving performance (Rahmawati et al., 2023).

### **The Influence of Entrepreneurial Spirit on the Performance of Micro-Business Actors**

The results of this study show that the entrepreneurial spirit has a positive and significant influence on the performance of micro-business actors, in line with Entrepreneurial Orientation Theory (EO Theory). This theory asserts that entrepreneurial orientation, manifested through innovation, proactivity, and risk-taking, is a fundamental element in driving improved organizational performance. In the context of MSMEs in Cilegon City, an entrepreneurial spirit plays a key role in converting potential resources, including digital skills and knowledge, into highly competitive advantages. EO Theory emphasizes that entrepreneurs with a strong entrepreneurial orientation tend to be more responsive in seizing market opportunities, adapt quickly to technological developments, and are able to produce relevant innovations, thus directly contributing to improved performance. These findings also indicate that the success of digital transformation in the MSME sector depends not only on the ability to master technology but also on an

entrepreneurial mindset that encourages the courage to make strategic decisions to optimize the use of said technology (Buyukyazici, 2023).

Several recent studies have confirmed that entrepreneurial orientation (EO) plays a crucial role in improving the performance of micro and small businesses, particularly amidst the rapidly growing digitalization. For example, Santosa et al. (2025) demonstrated that in VUCA situations, the combination of entrepreneurial orientation, digital-based marketing strategies, and product innovation can significantly improve the performance of MSMEs in rural areas. Consistent with these findings, Nofirda and Azhari (2025) demonstrated that entrepreneurial orientation significantly contributes to the success of MSMEs, with technology and competition acting as mediating factors that significantly strengthen this relationship (Isharyani et al., 2024).

### **The Influence of Digital Skills on Entrepreneurial Spirit**

This finding indicates that the digital skills possessed by business actors do not necessarily encourage an increase in their entrepreneurial spirit, so that digital skills do not have a positive or significant effect on the development of an entrepreneurial spirit.

Referring to Entrepreneurial Orientation (EO) Theory, the success of developing an entrepreneurial spirit does not solely depend on mastering technical skills such as digital capabilities, but also on the core elements of entrepreneurial orientation itself, namely innovation, proactivity, and the courage to take risks. Research findings showing that digital skills have no positive or significant effect on the entrepreneurial spirit of MSME employees in Cilegon City reinforce the understanding that technological mastery, without accompanied by mental drive and an entrepreneurial attitude, is insufficient to trigger resilient entrepreneurial behavior. In such conditions, the digital skills possessed by MSME actors have the potential to be used only for daily operational needs, rather than becoming a trigger for the birth of innovative ideas or creative business strategies. Therefore, these results provide an important theoretical contribution that digital skills need to be combined with psychological factors and strategies inherent in entrepreneurial orientation to have a real impact on the formation of an entrepreneurial spirit (Rojas-García et al., 2024).

Recent research developments emphasize the urgency of digital entrepreneurial orientation as a key driver of innovation and improved business performance. Research conducted by Jang & Lee (2025) shows that the combination of digital entrepreneurial orientation, technology absorptive capacity, and digital innovation significantly contributes to improving business performance through optimizing digital innovation. Consistent with these findings, recent studies also indicate that implementing an entrepreneurial orientation strategy combined with sustainable resilience competencies (*sustainable resilience strategy*) can strengthen the adoption of digital technology in the MSME sector. This confirms that entrepreneurial orientation plays a central role in facilitating the digital transformation process, which has a direct impact on business performance.

The results of this study not only enrich the analysis of the relationship between digital skills and entrepreneurial spirit, but also provide a new perspective that digital entrepreneurial orientation (EO) and the ability to absorb technology play a crucial mitigating role in transforming technical skills into concretely implemented innovations. With these findings, this study provides a foundation for the development of a new theoretical model while also introducing an element of novelty by emphasizing that digital skills, without the support of strengthened entrepreneurial orientation and innovation capacity, are insufficient to drive significant changes in entrepreneurial behavior (Aristei et al., 2024).

### **The Influence of Digital Knowledge on Entrepreneurial Spirit**

The findings of this study prove that there is a positive and significant influence between digital knowledge and entrepreneurial spirit in line with the framework. *Entrepreneurial Orientation Theory* (EO Theory), which asserts that entrepreneurial orientation is built through a combination of skills, knowledge,

and a proactive attitude in responding to market opportunities and challenges. Adequate digital knowledge not only broadens an individual's horizons in seeing the potential of innovation but also spurs the ability to make decisions quickly, boldly, and based on data characteristics that are at the core of entrepreneurship. *Entrepreneurship Orientation* In the context of MSMEs in Cilegon City, a deep understanding of digital technology provides strategic advantages for business actors in identifying new market opportunities, developing adaptive strategies, and creating more optimal product or service differentiation. These results confirm that digital knowledge is not merely theoretical knowledge but a strategic asset capable of strengthening indicators. *Entrepreneurship Orientation*, such as innovation, proactivity, and courage to take risks, thus playing a direct role in forming a strong and competitive entrepreneurial spirit amidst the dynamics of digital transformation (Mujahed et al., 2024).

Recent research conducted by Jang and Lee (2025) shows that the combination of *digital entrepreneurial orientation*, *technology absorptive capacity*, And *digital innovation* can make a significant contribution to improving business performance. These findings emphasize that digital knowledge is not sufficient merely as cognitive capital; it must be integrated with a responsive entrepreneurial orientation and the organization's ability to absorb and manage technology, so that it can be implemented into tangible innovations that directly impact company performance. Therefore, the results of this study not only strengthen the theoretical foundation *Entrepreneurial Orientation* (EO) in the digital realm, but also contributes to the development of the literature by emphasizing that the effectiveness of digital knowledge will be optimal when combined with an adaptive digital entrepreneurship strategy and the organizational capacity to realize it (Tarihoran et al., 2023).

### **The Influence of Digital Skills on the Performance of Micro-Business Actors in the Culinary Sector Through Entrepreneurial Spirit as a Mediating Variable**

These findings suggest that digital skills tend to contribute directly to improving the performance of micro-entrepreneurs, without intervening through entrepreneurial spirit. The results of this study indicate that entrepreneurial spirit does not act as a significant mediating variable in the relationship between digital skills and micro-entrepreneur performance. These findings have important implications when viewed within the framework of *Entrepreneurial Orientation Theory* (EO Theory). From this theoretical perspective, entrepreneurial orientation, which encompasses aspects of innovation, proactivity, and risk-taking, serves as the primary driver in transforming organizational resources or capabilities into sustainable performance excellence (Nuryanto et al., 2024).

However, the data obtained indicates that although digital skills are a valuable strategic asset, their presence does not automatically encourage entrepreneurial behavior that can accelerate performance achievement. This condition aligns with the view of Lumpkin and Dess (1996), who emphasized that entrepreneurial orientation depends not only on the availability of resources but is also influenced by contextual factors such as organizational culture, business environment support, and the mental readiness of entrepreneurs to innovate and take risks. Therefore, in the context of MSMEs in Cilegon City, digital skills tend to contribute directly to performance without strengthening the entrepreneurial spirit, which is likely due to the less than optimal application of entrepreneurial values in the creative and proactive use of digital technology (Srimulyani et al., 2023).

On the other hand, the research findings of Hanoum et al (2025) indicate that *entrepreneurial orientation* plays a crucial role as a mediator in optimizing the impact of the implementation *e-business* on business performance. This role has become increasingly strategic in the digital era, where organizational ambidexterity plays a crucial role in harmonizing the technology adoption process with the direction and strategy of entrepreneurship. Accordingly, research by Sudirman et al. (2025) emphasizes the strategic role of *sustainable resilience strategy* as a mediator in the relationship between *entrepreneurial orientation* and the adoption of digital technology among SMEs in Indonesia. These findings emphasize that entrepreneurial orientation and competency must be accompanied by strategies that maintain business

resilience, so that the digitalization process can be implemented optimally and sustainably (Al-Shami et al., 2024).

### **The Influence of Digital Knowledge on the Performance of Micro-Business Actors in the Culinary Sector Through Entrepreneurial Spirit as a Mediating Variable**

The findings of this study reveal that entrepreneurial spirit plays a significant role as a mediating variable in linking digital knowledge with the performance of micro-entrepreneurs, which is in line with the principles of *Entrepreneurial Orientation Theory*. This theory asserts that entrepreneurial orientation, reflected through innovation, proactivity, and the courage to take risks, has the ability to transform internal capabilities, including digital knowledge, into a source of sustainable competitive advantage. In the context of MSMEs in Cilegon City, digital knowledge serves as a technical foundation that enables entrepreneurs to understand, manage, and optimize the use of technology. However, without an entrepreneurial spirit, this knowledge tends to be underutilized and has little significant impact on performance. Entrepreneurial spirit here plays a role as a driving force capable of converting digital knowledge into innovative strategies, bold decisions, and proactive actions in responding to market dynamics, resulting in tangible performance improvements. These results further confirm that the success of digital transformation in micro-enterprises is heavily influenced by entrepreneurs' ability to combine digital competencies with a strong entrepreneurial orientation (Tiwari et al., 2024).

### **CONCLUSION**

Based on the results of the analysis, it can be concluded that 1) There is a positive and significant direct influence of digital skills on the performance of micro-entrepreneurs in the culinary sector in Cilegon City with a path coefficient of 0.574 ( $p\text{-value} = 0.000$ ). This finding confirms that digital skills involving information skills, communication skills, creative skills, digital security skills, and digital empathy skills can directly improve the performance of micro-entrepreneurs in the culinary sector. 2) There is no positive and significant direct effect of digital knowledge on the performance of micro-entrepreneurs in the culinary sector in Cilegon City, with a path coefficient of -0.217 ( $p\text{-value} = 0.114$ ). These results indicate that digital knowledge involving technical skills, information literacy, and digital communication does not provide a positive and significant contribution in directly improving the performance of culinary sector actors. 3) There is a positive and significant direct influence of entrepreneurial spirit on the performance of micro-business actors in the culinary sector in Cilegon City, with a path coefficient of 0.337 ( $p\text{-value} = 0.000$ ). This finding indicates that an entrepreneurial spirit, such as the courage to take risks and an orientation towards innovation, can drive increased performance. 4) There is no direct positive and significant influence of digital skills on the entrepreneurial spirit of micro-entrepreneurs in the culinary sector in Cilegon City, with a path coefficient of 0.122 ( $p\text{-value} = 0.247$ ). This finding proves that digital skills are not able to improve the entrepreneurial spirit of micro-entrepreneurs in the culinary sector in Cilegon City. 5) There is a positive and significant direct influence of digital knowledge on the entrepreneurial spirit of micro-entrepreneurs in the culinary sector in Cilegon City with a path coefficient of 0.659 ( $p\text{-value} = 0.000$ ). These results indicate that adequate digital knowledge related to digital technology can encourage innovative and proactive attitudes in running a business. 6) There is no significant indirect effect of digital skills on the performance of micro-entrepreneurs in the culinary sector in Cilegon City through entrepreneurial spirit as a mediating variable, with a mediation coefficient of 0.041 ( $p\text{-value} = 0.308$ ). These results prove that entrepreneurial spirit is not able to significantly mediate the relationship between digital skills and the performance of micro-entrepreneurs. 7) There is a significant indirect effect of digital knowledge on the performance of micro-entrepreneurs in the culinary sector in Cilegon City through entrepreneurial spirit as a mediating variable, with a mediation coefficient of 0.222 ( $p\text{-value} = 0.041$ ). This

finding indicates that entrepreneurial spirit can mediate the relationship between digital knowledge and the performance of micro-entrepreneurs in the culinary sector in Cilegon City.

The findings of this study are important from both a scientific and policy perspective. Scientifically, this study enriches the literature on the role of digital skills, digital knowledge, and entrepreneurial spirit in improving the performance of micro-enterprises, particularly in the culinary sector, by emphasizing the differences in the direct and indirect contributions of each variable. This study also provides authenticity to the model of integration between digitalization and entrepreneurship in the context of MSMEs in the region, thus serving as a theoretical reference for developing similar studies in other regions or different sectors. From a practical and policy perspective, the results of this study can serve as a basis for formulating more targeted digital-based mentoring, training, and empowerment policies for MSMEs. For example, local governments and stakeholders can focus on improving practical digital skills and strengthening the entrepreneurial spirit, rather than simply adding technical digital knowledge, so that MSME digital transformation efforts truly impact business performance and competitiveness.

Although this research has been conducted with a rigorous methodology and comprehensive analysis, there are a number of limitations that need to be considered in interpreting the results, including the geographical scope which is limited to culinary sector MSMEs in Cilegon City so that it cannot be generalized to other regions or sectors, the cross-sectional research design which is not able to describe the dynamics of change longitudinally, the use of self-report questionnaires which has the potential to cause respondent bias, the limitations of variables which only cover digital skills, digital knowledge, entrepreneurial spirit, and employee performance without considering other factors such as management support or access to capital, as well as the in-depth contextual analysis related to external factors such as local government policies and the digital ecosystem, so that the results of this study still require further enrichment in further research.

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