

## Modelling digital capability as a game changer to enhance SME's performance

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### Abstract

Digital technology can help industries face competition, particularly play a vital role in improving SMEs' performance. This study aims to investigate the relationship between digital leadership and SMEs' performance by examining digital capabilities, with a focus on the crucial roles of digital and innovation capabilities as mediators and entrepreneur orientation as a moderator. A survey technique was employed to identify Small and Medium Enterprises (SMEs) in East Java. A total of 205 responses were collected and designed using Likert scale and the data were analysed using PLS-SEM. The results indicate that digital leadership influences digital capability, which in turn influences SMEs performance. Additionally, innovation capability influences both digital leadership and SMEs performance. In addition, entrepreneur orientation cannot moderate the relationship between innovation capability and SMEs performance. However, entrepreneur orientation is able to mediate the relationship between digital capability and SMEs performance. This study considers among first studies addressing these critical relationships in this sector. Therefore, this study determines how leaders determine the ways to achieve improved SMEs performance. Ultimately, this study provides evidence of the importance of digital and innovation capabilities for competitiveness.

**Keywords:** digital capability; digital leadership; entrepreneur orientation; SMEs performance; innovation capability.

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### Introduction

The development of the digital era has caused changes in all fields, including the world of work. To prepare for the digital age, leaders in organisations globally

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must possess digital skills and leadership capabilities (Muis, 2020; Winanti, 2021). With digital transformation, entrepreneurs must engage with digital trends. Up to 90% of businesses prioritise digitisation in their strategic planning for the next two years. Digital technology enables companies to adapt to technological advancements, enhance operational efficiency, and increase global competitiveness. Digital technology, in the form of digital capability, refers to an organisation's ability to use and adapt technology and digital resources to achieve strategic objectives and secure a competitive advantage in an ever-changing digital environment (Hoang et al., 2025), acts as a primary mechanism for scanning and analysing future scenarios, which is essential for Small and Medium Enterprises (SMEs) to recognise new opportunities and maintain a competitive edge in volatile digital landscapes (Durman et al., 2025).

SMEs with strong digital capability are more likely to succeed than their competitors, particularly in developing countries; despite the obstacles they face, they demonstrate the ability to adapt and survive quickly, using their contextual knowledge to harness digital technology in novel ways (Hoang et al., 2025). If digital capability is not implemented, SMEs will be outpaced by more advanced competitors and face a decline in sales, which could lead to their exit from the market (Istanto et al., 2022). Digital implementation is important for industries as a process that drives businesses to transform their value creation and innovation strategies (Lei et al., 2022). Approximately 90% of industries in China have seen digital improvements to enhance their competitive advantage (Jie et al., 2025). For example, China's digital technology has elevated the country's position in global markets by enabling its industries to reach new customers and enhance their marketing capabilities. In Vietnam, digital capabilities have been applied in businesses, including the use of big data (Hoang et al., 2024). However, as many as 68% of MSMEs in Indonesia have not yet utilised digital space to develop their businesses (Kominfo, 2022). Particularly in East Java, Indonesia's second-largest province in terms of the number of SMEs, although SMEs account for 57.81% of regional GDP, the uptake of digital systems among SMEs remains at 44% (Kominfo Jatim, 2024). This indicates that digitalisation remains necessary to accelerate and drive the growth of SMEs, particularly in East Java. It is envisioned that the study will confirm the empirical challenges faced by SMEs, thereby reinforcing the recommendation for sufficient policy scope to strengthen digitalisation within the SME sector.

Previous research highlights the significance of dynamic capabilities for SME performance, demonstrating that they can enhance enterprise performance (Kim & Jin, 2024). Dynamic capabilities play a vital role in helping SMEs enter new markets, including international markets (Wardaya et al., 2019). Digital capabilities facilitate opportunity creation and support sustainability amidst competitive pressures. However, these findings are contradicted by Gunawan et al. (2023), who found that dynamic capabilities do not affect enterprise performance. Studies by

Ferreira et al. (2020) and Xiao et al. (2021) indicate that innovation capabilities positively influence enterprise performance. Moreover, Ilyas et al. (2017), Ok and Ahn (2019), Ali et al. (2020), and Astuty and Wahyuningsih (2024) show that entrepreneurial orientations serve as foundational contributors to enterprise performance, characterised by marketing innovation, strategy, and processes that positively affect enterprise performance. Conversely, Raja et al. (2024) and Yadav et al. (2024) argue that enterprise performance is influenced not only by innovation capabilities and entrepreneurial orientation, but also by leaders who adapt to digital trends, a concept known as digital leadership, particularly in SMEs. This viewpoint is supported by Borah et al. (2022), who identified digital capability as a key factor in shaping enterprise performance. Thus, this opens a new research gap concerning the study of the cause mechanism.

Previous studies are insufficient in providing a comprehensive model for SMEs' challenges. The dynamic capability perspective from Heaton et al. (2019), Teece et al. (1997), and Teece (2023) indicates that dynamic capability is crucial for SMEs success (Li et al., 2022; Hoang et al., 2024). However, there is a lack of studies that investigate this crucial issue from different perspectives in SMEs in East Java. SMEs in East Java encounter limitations in knowledge, skills, and access to technology, which hinders their ability to achieve a competitive edge in the market (Tobing, 2018).

Entrepreneurs need to explore how digital capabilities can influence SME performance. Based on the perspectives of Yu et al. (2022) and Chen et al. (2024), poor digital leadership and the lack of digital capability improvement can be inhibiting factors, thereby influencing enterprise performance. This is because effective digital leadership is crucial for fostering a digital culture and guiding industries through the transformation process (Arabiun et al., 2024). Leaders must leverage existing opportunities to integrate dynamic capabilities into strategic business models (Senadjki et al., 2024). This is because enhancing enterprise performance requires digital leadership that can adapt to new developments. Therefore, SMEs can adjust to the digital landscape and innovate effectively. This study investigates the relationship between digital leadership and the performance of SMEs by examining digital capabilities. It focuses on the crucial roles of digital and innovation capabilities as mediators, and entrepreneurial orientation as a moderator. This study poses the following main research question: How does digital leadership, as determined by innovation capability and entrepreneurial orientation, impact SME performance in the SME sector?

This study offers several contributions. First, it contributes to the theory of dynamic capability by considering the role of digital capability, particularly in SMEs. Second, it examines how SMEs can enhance revenue and performance by improving digital capability, emphasising the crucial role of digital capability. Third, regarding digital capability in the context of SMEs, this study expands the concept previously applied to the manufacturing industry (Hirvonen & Majuri,

2020), restaurants (Ocloo et al., 2024), textiles (Shen et al., 2021), crafts (Prakasa & Jumani, 2024), and printing (Suder et al., 2024). Fourth, this study specifically addresses the research by Hoang et al. (2024), which found that digital capability needs to be further explored and examined at the SME or individual level, particularly in developing countries. As the largest country in terms of population, economic size, and number of islands, understanding digital capability is crucial for existing literature. Finally, this study examines the role of innovation capability and entrepreneur orientation in SMEs' performance. Additionally, digital capability plays a significant role in moderating the relationship between innovation capability and entrepreneur orientation on SMEs' performance. Furthermore, it serves as a mediator between digital leadership and entrepreneurial orientation in the context of SMEs.

## **Literature review**

### ***Digital leadership***

Digital leadership is the ability to lead an organisation by utilising information and communication technology in the digital era to achieve organisational goals (Winanti, 2021). Digital leadership not only involves management concepts but also the need for soft skills and hard skills (Amelda et al., 2021). Leaders with expertise in technology play a crucial role in providing their teams with the necessary tools and technological understanding to work effectively and remain competitive in the workplace (Wardman, 2020). Digital leadership requires leaders to create a clear and meaningful vision for the digitalisation process and the skills to implement strategies to realise that vision (Zeike et al., 2019; Lathabhavan & Kuppusamy, 2024). Everyone needs skills to enhance their performance at work, as these skills are essential for adapting, interacting, and organising effectively.

### ***Innovation capability***

Innovation capability is related to an organisation's ability to initiate, develop, and achieve innovation outcomes using a set of technological and organisational skills (OECD/Eurostat, 2018). Innovation capability is crucial for transforming ideas, knowledge, and information into better products, services, and marketing (Muawanah & Pujianto, 2023; Bekata & Kero, 2025). The willingness of entrepreneurs to support novelty, creative processes, and the development and growth of new ideas through experimentation, leading to the development of new products, services, marketing methods, and organisational methods in business practices (Oliva et al., 2019). Innovation capabilities serve as a competitive resource through the introduction of new products and the adoption of new processes (May et al., 2024). However, given the complexity of generating innovation, companies require various assets, resources, and capabilities to implement strategies and adapt to competitive environmental conditions (Guan & Ma, 2003; Sepúlveda & Collazos, 2023).

### ***Entrepreneur orientation***

Entrepreneurial orientation refers to a company's process of developing strategies to explore new market opportunities (Shan et al., 2016; Gomes et al., 2022). Entrepreneurial orientation enhances key organisational processes that clarify managerial strategic actions, allowing companies to outpace competitors through innovation adaptation, proactive engagement with market opportunities, and risk-taking (Jiang et al., 2016; Ali et al., 2020). Entrepreneur orientation is beneficial for industries (Wales et al., 2011; Wales et al., 2021). Entrepreneurial orientation can enhance organisational proactivity and the willingness to take risks and innovate (Stock & Erpf, 2023). Thus, companies are guided to become competitive in the market by delivering value to the company and its customers (Singh et al., 2021).

### ***Digital capabilities***

Digital capabilities achieved through the integration of intelligent systems and automated management tools optimise production processes and supply chain management, significantly improving resource utilisation efficiency (Radicic & Petković, 2023; Wang et al., 2024). For example, providing real-time monitoring and maintenance support for production equipment helps reduce production costs and increase capacity. Additionally, digital tools can optimise customer relationship management, enabling businesses to respond promptly to customer feedback, thereby further enhancing competitiveness in existing business areas (Colombari et al., 2023). SMEs develop and adapt their innovation capabilities, enabling them to continue innovating and align their internal resources to leverage digital. These digital capabilities, which include access to technological infrastructure, data management tools, and digital expertise, often depend on external resources and partnerships, emphasising reliance on external support for technological advancement (Arroyabe et al., 2024). By encouraging innovation, SMEs are better prepared to respond to technological changes and remain competitive in dynamic markets (Eisenhardt & Martin, 2000).

### ***SMEs performance***

SME performance refers to a business's ability to meet the needs of various workers, clients, and partners, as well as to achieve planned business goals (S. Wu et al., 2024). SMEs' performance is a leader's effort to discover and create new strategic value, leverage their skills, and motivate employees to achieve organisational goals and drive innovation (Kim & Jin, 2024). Performance can be determined by analysing a business's ability to achieve set targets (Assamala et al., 2022). SME performance encompasses the viability and effectiveness of entrepreneurial ventures in attaining planned goals, as well as the extent to which they exceed expectations in meeting the needs of their partners/customers (Kintu & Venter, 2019).

### ***Hypotheses development***

Digital leadership integrates leadership capabilities with the effective use of digital technologies to improve operational efficiency and create customer value (Tigre et al., 2023). By aligning strategic objectives with digital investments, leaders can open new competitive opportunities through technology adoption (Albannai et al., 2024). Moreover, digital leadership leverages data from digital platforms to support informed decision-making and strengthen digital capability (Benitez et al., 2022; Hadjielias et al., 2022). In turn, digital capability enhances transparency and unlocks technical potential, facilitating SME business model development (Chen et al., 2024).

Empirical evidence consistently supports this relationship. Handayani et al. (2026) find that digital leadership positively affects digital capability, while Senadjki et al. (2023) highlight its role in fostering cohesive digital systems. Similarly, Gyamerah et al. (2025) emphasise that strong digital leadership enables SMEs to adopt technology, integrate systems, and respond adaptively to market changes. Therefore, digital leadership acts as both a strategic guide and a key driver in building digital capability, ultimately enhancing organisational performance and supporting sustainable competitiveness. Thus, this study hypothesises that digital leadership positively influences digital capability.

H1: Digital leadership significantly affects employees' digital capability in the SME sector.

Digital capabilities enable firms to innovate and respond rapidly to environmental changes, thereby enhancing performance (Kim and Jin, 2024). By integrating digital technologies into operational and strategic processes, SMEs can optimise resource allocation, improve information processing, and transform opportunities into new business value (Sousa-Zomer et al., 2020). Beyond basic knowledge, digital expertise involves the ability to apply, adapt, and innovate using digital tools and platforms (Garzoni et al., 2020), allowing entrepreneurs to streamline operations, reduce costs, and improve profitability.

These capabilities also support market sensing and decision-making by enabling firms to analyse trends and customer preferences, fostering innovation and service optimisation (Huhtala et al., 2014). Empirical evidence further shows that digital capabilities improve efficiency, lower transaction costs, and expand market reach (Senadjki et al., 2024), while directly contributing to SME performance (Hirvonen and Majuri, 2020). As defined by Khin and Ho (2019), digital capability reflects a firm's ability to adopt and utilise digital technologies effectively. Therefore, higher levels of digital capability enable SMEs to adapt quickly, compete effectively, and achieve superior performance. Therefore, this research developed the following hypothesis:

H2: Digital capability significantly influences employees' performance in the SME sector.

Improving innovation can involve effectively integrating leadership capabilities (Borah et al., 2022; Tigre et al., 2023) by aligning the organisation's strategic goals with digital capability investments, then facilitating experimentation and learning (Albannai et al., 2024). This serves to encourage leaders within SMEs to develop in innovating (Benitez et al., 2022). Digital capability can influence business transparency and unlock technical potential, thereby driving new business models (Chen et al., 2024). By implementing digital capabilities, industries can enhance their operations, processes, and performance, thereby achieving sustainable performance (Hoang et al., 2024).

Several studies examining how digital literacy influences innovation have found a complex relationship between the two, which can yield positive outcomes when managed effectively (Benitez et al., 2022). Leaders with a digital orientation play a role not only in adopting technology but also in creating an environment that fosters creativity, experimentation, and the development of new ideas (Pandey et al., 2023). Effective digital leadership implementation enables organisations to integrate digital technology into innovation processes, thereby accelerating the development of products, services, and business models (Huong et al., 2024). In the context of SMEs, digital leadership becomes increasingly crucial, as resource constraints demand visionary, adaptive leadership to leverage digital opportunities (Hoang et al., 2024). When leaders strategically direct the use of technology and foster collaboration and organisational learning, innovation capability will develop more effectively, ultimately enhancing the organisation's ability to create value and compete in a dynamic market. Thus, the hypothesis has been developed:

H3: Digital leadership significantly influences employees' innovation capability in the SME sector.

Innovation capability is the most critical aspect of performance (Hult et al., 2004; Isobe et al., 2004). This has a significant impact on company performance by improving market position, which, in turn, leads to superior performance (Ferreira et al., 2020). Innovation is considered a strategic advantage that helps improve companies' competitiveness and productivity. Innovation is often regarded as an essential means to achieve high performance in a highly competitive environment (Lyon & Ferrier, 2016). Innovation empowers entrepreneurs to prioritise the utilisation of labour resources and expand customer needs in innovative ways (Xiao et al., 2021).

Through this capability, organisations can create added value, improve operational efficiency, and respond to changing market needs more quickly and effectively (Chen et al., 2024). In the context of SMEs, innovation capability is a key factor because resource constraints require business owners to adapt and find creative ways to maintain competitiveness continuously (Ramdani et al., 2022; X. Wang et al., 2024). When SMEs manage innovation sustainably, whether through product or process innovation, this will have a direct impact on improved

performance, such as sales growth, market expansion, and increased profitability (Raja et al., 2024). Thus, innovation capability is not only a driver of differentiation but also a primary determinant in achieving superior and sustainable business performance. Therefore, the hypothesis is:

H4: Innovation capability significantly influences SMEs performance among employees in the SME sector.

The development of entrepreneurial orientation is essential to drive innovation to improve SMEs' performance (Puwardi & Soelaiman, 2023). This is increasingly important in developing countries as the adoption of digital platforms has a favourable impact due to its ease of implementation (Ilyas et al., 2017). With the help of entrepreneurial orientation, SMEs can achieve operational efficiency and resource integration, which drive innovation in small and medium industries (Wang et al., 2024). Innovation often involves proactively developing new products, services or business models in a market environment (Värzaru & Bocean, 2024). Thus, it is optimal for fostering a collaborative economy, broadening product and service offerings, and enhancing market access and revenue.

Previous research on SMEs exploring the impact of innovation capabilities on SME performance has yielded inconsistent results (Otache, 2024; S. Wang & Zhang, 2025). Although many studies have shown that innovation capabilities positively impact SME performance (Taleb et al., 2023), certain factors can limit improvements in SME performance (Rumanti et al., 2022). For example, a study by Susanto et al. (2021) found that although innovation capabilities significantly influence SME performance, a leader's entrepreneurial orientation may have strengthened the direction of the relationship between innovation capabilities and SME performance. Similarly, Ngo (2023) suggests that innovation capabilities do not always determine the direction of the relationship with SME performance. Prasannath et al. (2024) indicate that the factor hindering the creation of stable improvements in SME performance is entrepreneurial orientation. In some situations, as explained by Akomea et al. (2022), entrepreneurial orientation may not directly influence innovation capabilities and SME performance; however, it may strengthen the relationship between innovation capabilities and SME performance.

H5: Entrepreneurial orientation moderates the relationship between innovation capability and SME performance among employees in the SME sector.

Entrepreneurial orientation can be used to bridge digital capabilities and enhance SMEs' performance by facilitating better data-driven decision-making and operational efficiency (Kim & Jin, 2024). Entrepreneurial orientation serves as a moderator in the relationship between digital capabilities and SME performance, improving business outcomes (Heredia et al., 2022). To enhance the efficiency of SMEs, digital capabilities can leverage productive entrepreneurial orientation to achieve superior performance outcomes. Entrepreneurial orientation can support

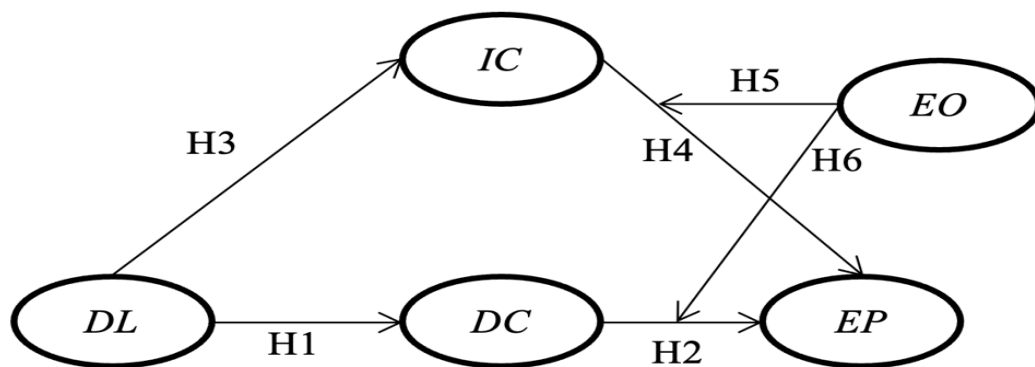
digital capabilities in driving SME performance, enabling SMEs to adapt to market changes (Bhatti et al., 2024; Baawain et al., 2025).

When digital capability is at a high level, SMEs tend to be more proactive, innovative, and willing to take risks in adopting digital technology, so that digital capability is not only used for operational efficiency but also to explore new market opportunities, develop innovative products, and create competitive differentiation (Kim & Jin, 2024). Under these conditions, the influence of digital capability on performance becomes increasingly strong (Singh et al., 2024). Conversely, when entrepreneurial orientation is low, SMEs tend to be more conservative and less responsive to digital opportunities, resulting in limited utilisation of digital capabilities. Consequently, even though the organisation possesses digital capability, its contribution to performance improvement is suboptimal. Thus, entrepreneurial orientation serves as a boundary condition that determines the extent to which digital capability can effectively improve SME performance. Therefore, a hypothesis was developed:

H6: Entrepreneurial orientation moderates the relationship between digital capability and employees' performance in the SME sector.

Based on the literature above, the study has developed a research framework, as illustrated in Figure 1.

**Figure 1.**  
Research framework



Source: Authors' work (2026)

### Research method

The research design is quantitative (Xie et al., 2022). This study uses a survey technique to collect the data from SMEs in East Java. The questionnaire was reviewed for readability by one professor in the field of SMEs, two methodology lecturers, and five SME owners. Readability was ensured to simplify the statement items for easier understanding by respondents (Troise et al., 2022). All items were measured on a five-point Likert scale, with response options ranging from 1 (strongly disagree) to 5 (strongly agree).

Digital leadership is the ability of leaders to create a clear, meaningful vision for the digitalisation process and to implement strategies to achieve it. In this study, digital leadership was measured using 5 items from Qiao et al. (2024), e.g., "I guide employees on the potential risks associated with information technology." Innovation capability is the capacity to develop new products that meet market needs. In this study, innovation capability is measured using 4 items from the research conducted by Odoom and Mensah, (2019), e.g., "I introduce new and innovative products to the market." Entrepreneurial orientation describes strategic managerial behaviours that enable companies to outperform competitors by embracing innovation, tolerating risk, and proactively pursuing market opportunities. In this study, Entrepreneurial Orientation is measured using 9 items from the study conducted Mahmood et al. (2013), e.g., "I prefer a strong emphasis on marketing products or services that are already proven and reliable." Digital capability encompasses the ability to understand and leverage digital technologies in the design and use of systems, enabling companies to effectively obtain, manage, and analyse market data. In this study, digital capability is measured using 9 items from the research conducted by Zhang et al. (2024), e.g., "I can sense digital technology innovation trends." SMEs' performance is the effort to create new strategies and skills to achieve goals in entrepreneurship. In this study, SMEs' performance is measured using 11 items from Sariwulan et al. (2020), e.g., "I have achieved the annual sales target I set."

The questionnaire was distributed online using Google Forms and offline through direct visits. Both methods were used to maximise the response rate (Wu et al., 2022). This study distributed questionnaires to 311 respondents from 142 SMEs. Out of these, 108 (34%) did not respond, leaving 205 (66%) who completed the questionnaire. As suggested by Ali (2020), the minimum sample size is 100; therefore, the sample size in this study meets the requirement. The analysis focused on the owners and decision-makers.

Next, the data were analysed using SEM-PLS 4 software (Hair et al., 2018). PLS was used because the data were collected using Excel-based software and were used to assess multivariate normality (Cain et al., 2017). Therefore, SmartPLS 4.0.9.2, the second-generation software for structural equation modelling (SEM), was selected to perform bootstrapping on the model. The steps include evaluating the measurement model (outer model) to assess convergent validity, discriminant validity, and composite reliability; hypothesis testing; and testing for moderating effects to achieve the research objectives (Hair et al., 2018). To examine mediation effects, this study employed bootstrapping to test indirect effects and further assessed effect size using the *upsilon* ( $v$ ) statistic (Ogbeibu et al., 2021; Senadjki et al., 2024), which provides a more robust estimation of mediation strength compared to traditional measures, particularly in variance-based SEM. This approach ensures that the mediating roles of digital and innovation capability are evaluated not only in terms of significance but also in their substantive impact on the model.

## Results

### *Respondent information*

The demographic profile of the respondents in this study shows significant variation in position, with owner (60%) and manager (40%). Respondents came from urban/rural SMEs in Sidoarjo Regency (15.10%), Pasuruan City (9.27%), Surabaya City (18.05%), Gresik Regency (9.76%), Lamongan (4.88%), Malang City (8.29%), Malang Regency (9.76%), Batu City (10.73%), Mojokerto Regency (3.90%), Sumenep Regency (1.95%), Blitar Regency (0.49%), Kediri City (0.98%), Madiun (1.95%), Jember Regency (1.46%), Tuban Regency (0.98%), Jombang Regency (1.46%), Tulungagung Regency (0.98%). With a turnover of <Rp50.000.000 (21%), <Rp50.000.000-Rp.500.000.000 (46%), Rp500.000.000-10.000.000.000 (31%), >Rp10.000.000.000 (2%). Those established for less than 3 years (23%), and more than 3 years (77%). Furthermore, the types of SMEs are diverse, including food and beverages (26%), electronics (15%), furniture (9%), fashion (15%), textiles (6%), motorcycle showrooms (4%), beauty (12%), car showrooms (3%), gold and precious metals (7%), and others (3%). The gender distribution is 48% male and 52% female. The age distribution is as follows: 25 to 30 years old (21%), 30 to 35 years old (34%), 35 to 40 years old (24%), and 40 to 45 years old (16%). Work experience: 0 to 5 years (28%), 5 to 10 years (36%), 10 to 15 years (18%), 15 to 20 years (11%), 20 to 25 years (5%), over 25 years (2%), over 45 years (5%). Respondents have a high school diploma (27%), a Diploma I/II/III (22%), a Bachelor's degree (43%), or a Master's degree (7%). These details are available in Appendix 1.

### *Measurement model*

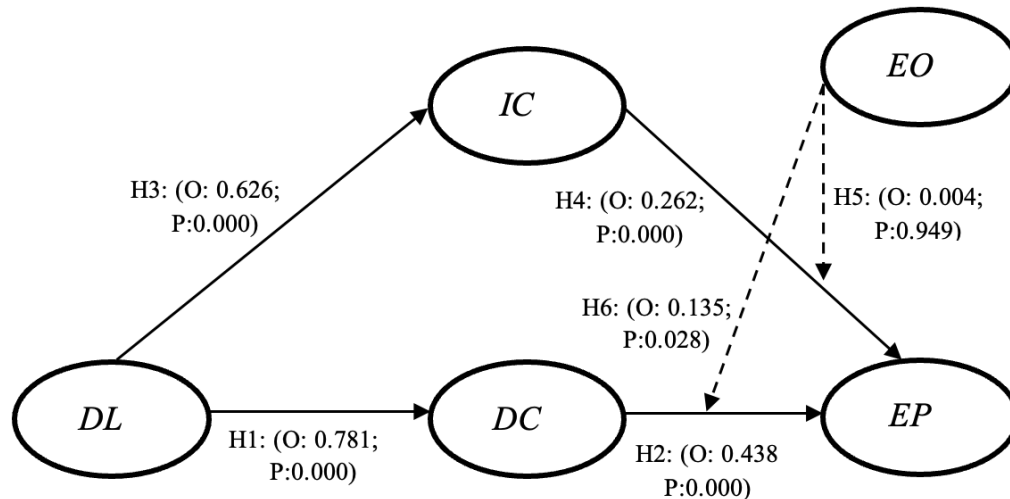
Items in the construct are considered valid if their correlation values exceed 0.70 (Hair et al., 2018). However, if the outer loading (OL) values are between 0.40 and 0.70, they should be considered for scale deletion only when deleting indicators leads to an increase in composite reliability above the recommended threshold value. When testing convergent validity, the average variance extracted (AVE) is crucial, where validity is confirmed if the AVE exceeds the threshold of 0.50 (Hair et al., 2018). Reliability assessment is conducted by examining the Composite Reliability (CR) and Cronbach Alpha (CA) metrics for each variable. CR is achieved for a variable when both the CR index and CA exceed the threshold value of 0.70. Reliability testing is performed by examining the composite reliability values of each item. Items with composite reliability values equal to or greater than 0.70 are considered reliable (Appendix 2).

### *Structure model (path coefficients analysis)*

Figure 2 shows the results of the innovation capability path analysis. H1, DL has a positive and significant relationship with DC ( $\beta = 0.781$ ,  $p < 0.000$ ). H2, shows that DC has a positive and significant relationship with EP ( $\beta = 0.438$ ,  $p < 0.000$ ), H2 is supported. H3 indicates that DL has a positive and significant

relationship with IC ( $\beta = 0.626, p < 0.000$ ), H3 is supported. H4 indicates that IC has a positive and significant relationship with EP ( $\beta = 0.262, p < 0.000$ ), H4 is supported. H5, indicating that EO has not been able to significantly mediate the relationship between IC and EP ( $\beta = 0.004, p > 0.949$ ), H5 is not supported. H6, indicating that EO can significantly mediate the relationship between DC and EP ( $\beta = 0.438, p < 0.000$ ), H6 is supported.

**Figure 2.**  
 Structure model



Source: PLS 4.0 (2026)

Table 1 provides more details on path coefficients, which indicate the relationships between each independent variable and the dependent variable, based on the results of the positive and negative hypotheses. Meanwhile, testing was conducted using p-values. If the calculated  $t > 1.96$  (t table) or the p-value test result  $< 0.05$ , then there is a significant influence between variables. This study explores digital capability (DL), innovation capability (IC), and enterprise performance (EP) by adding entrepreneurship orientation (EO) as a moderator and DC as a mediator. DC in SMEs can improve long-term business success.

**Table 1.**  
 Coefficient path

Hypothesis	Original sample(O)	Sample mean (M)	Standard deviation (STDEV)	T statistics ( O/STDEV )	P values
DL → DC	0,781	0,787	0,052	15,089	0,000
DC → EP	0,438	0,431	0,075	5,810	0,000
DL → IC	0,626	0,634	0,049	12,786	0,000
IC → EP	0,262	0,263	0,061	4,313	0,000
EO x IC -> EP	0,004	-0,015	0,061	0,064	0,949
EO x DC -> EP	0,135	0,112	0,061	2,201	0,028

Source: data processed using PLS 4.0, (2026)

**Moderation test result**

Moderation test results show that when entrepreneurial orientation is low, low innovation capability is associated with lower SME performance (2.736). However, when innovation capability is high, SMEs' performance will be low (3.252). Conversely, when SMEs' orientation is high, low innovation capability results in low SMEs' performance (2.74), whereas when innovation capability is high, SMEs' performance is high (3.272), as shown in Appendix 3. Furthermore, when entrepreneurial orientation is low, low digital capability is associated with high SME performance (2.691). However, when digital capability is high, SMEs' performance will be low (3.297). Conversely, when entrepreneurial orientation is high, low digital capability will be associated with low SME performance (2.433). In contrast, when digital capability is high, SME performance will be high (3.579), as shown in Appendix 4.

**Mediation test result**

The mediation effect in this study was examined to determine whether organisational capacity for change mediates the relationship between organisational change and organisational performance. In this study, the formula  $\upsilon = \beta_{2MX}\beta_{2YM.X}$  was used, with criteria of 0.01 for a low mediation effect, 0.075 for a medium mediation effect, and 0.175 for a high mediation effect (Ogbeibu et al., 2021). Based on the results of the  $\upsilon$  test in the table above, the influence of digital capability in mediating digital leadership on SMEs performance has a medium mediating effect, as evidenced by the  $\upsilon$  calculation result of  $0.116 > 0.075$  and digital capability in mediating innovation capability on SMEs performance has a low mediating effect, as evidenced by the  $\upsilon$  calculation result of  $0.026 > 0.01$ . The table 2 presents the mediation results.

**Table 2.**  
*Upsilon V Test*

Hypothesis	Mediation	Result
DL → DC → EP	$0.781^2 \times 0.438^2 = 0.609 \times 0.191 = 0.116$	Medium
DL → IC → EP	$0.626^2 \times 0.262^2 = 0.391 \times 0.068 = 0.026$	Low

Source: Author Work (2025)

**Discussion**

Digital capabilities can be enhanced by leveraging the digital leadership, market, business and strategic expertise of digital leaders. Albannai et al. (2024) explained that leading and managing people from various disciplines in digitally transforming business (Benitez et al., 2022). In this context, leaders possess capabilities that encompass a combination of digital, market, business, and strategic leadership skills (Pandey et al., 2023; Prakasa & Jumani, 2024). For example, the ability to develop sales data analysis, understand e-commerce use, and execute promotional activities through social media platforms or influencers. By applying

these digital capabilities, SME digital leaders will be able to adapt and compete digitally (Zahoor et al., 2023).

Strong digital capabilities directly enhance SMEs' performance (Huong et al., 2024). Digital tools assist SMEs by increasing production capacity, sales volume, and business profits, thereby supporting their growth (Sariwulan et al., 2020). Business leaders can strategically utilise digital platforms (such as social media, digital billboards, and e-commerce) to improve performance outcomes, making digital transformation a core component of their entrepreneurial strategy (Hirvonen & Majuri, 2020). Leaders typically leverage these platforms to facilitate market access. Strong digital capabilities can deliver a personalised, efficient, value-added customer experience. Moreover, these digital capabilities help foster customer loyalty, offer differentiated products and services, and respond swiftly to market changes (Ong et al., 2021). Leaders' responsiveness to digital trends can establish a sustainable competitive advantage for SMES, ultimately strengthening SMEs' performance (Khin & Ho, 2019).

Digital leadership can significantly improve innovation capability (Borah et al., 2022). Dynamic capabilities empower leaders who embrace digital fluency and capitalise on opportunities to significantly improve performance and innovation (Teece, 2023; Hoang et al., 2024). For example, facilitating arrangements for changing production and services, and for developing new applications, including media, to reach customers (Fatima & Masood, 2024). In addition, digital leaders can use e-commerce, websites, and social media platforms to understand market demand and product offerings (Benitez et al., 2022). Leaders facilitating the emergence of new digital technologies can help SMEs innovate (Kastelli et al., 2024), making them more competitive and active in the era of digital advancement, enabling them to compete in an ever-changing market (Aftab et al., 2025).

As an illustrative case from East Java, digitalisation has been highlighted as the lifeblood of business, requiring commitment and adoption beginning at the highest levels of organizational leadership (Kominfo Jatim, 2025). Therefore, leadership, as the helmsperson steering SME policy, should pay attention to these wide-open opportunities to enhance SMEs' performance.

SMEs' performance is regarded as the outcome and value of entrepreneurial activity (Aini et al., 2013; Kim & Jin, 2024). Performance improvement is closely tied to innovation. Innovation can help leaders to improve SMEs' performance by developing new cultures, services, and strategies (Arshad et al., 2024). Through increased innovation, leaders can utilise new ideas, such as the latest production tools, to streamline processes more easily and quickly (Sariwulan et al., 2020; Huong et al., 2024). With this digital leadership capability, leaders must conduct market research to identify customer needs, enabling targeted innovation (Rosyidi et al., 2023). Leaders consider this to be able to improve SMEs' performance, because it not only requires an increase in turnover but also meets customer needs (Khin & Ho, 2019; Ong et al., 2021).

Companies with an entrepreneurial orientation continuously identify and seize new opportunities, create new value, and become market leaders (Andriani et al., 2024). Entrepreneurial orientation drives the innovation process, which in turn affects performance (Khin & Ho, 2019). Entrepreneurial orientation can directly improve SME performance through an innovation strategy (Cho & Lee, 2018; Isa et al., 2024). However, in this study, entrepreneur orientation has not been able to serve as a moderator that connects innovation and SME performance to increase (Heredia, Castillo-Vergara, et al., 2022). This occurs because leaders lack a plan for implementing entrepreneurial orientation. Without market research and strategy, SMEs struggle to innovate (Cenamor et al., 2019), leading to a decline in performance. Consequently, leaders need to manage entrepreneurial orientation by effectively utilising existing resources. For instance, they should conduct research to understand current market demand and consumer needs, then formulate a clear strategy to prevent repeated failures (Purwati et al., 2020). The stronger the entrepreneurial orientation behaviour and business strategy possessed by a business, the greater the SME's performance (Aftab et al., 2022).

The findings indicate that digital capability plays a differentiated mediating role in the relationship between digital leadership and innovation capability, and in SMEs' performance. Specifically, digital capability demonstrates a more substantive mediating effect in translating digital leadership into improved performance, suggesting that leadership-driven digital vision and strategic direction are more effectively operationalised when supported by strong digital competencies. In contrast, the mediating role of digital capability in the relationship between innovation capability and performance is more limited, indicating that not all innovation efforts are automatically enhanced by digitalisation unless they are strategically aligned with digital processes. From a practical perspective, these results imply that SMEs should prioritise strengthening digital capability as a strategic bridge that enables leaders' digital orientation to be effectively executed across organisational processes. However, SMEs must also ensure that innovation initiatives are intentionally integrated with digital systems, rather than assuming that digital tools alone will amplify innovation outcomes. This highlights the need for a more deliberate alignment between innovation activities and digital capability development to maximise performance.

Entrepreneurial orientation acts as a moderator in the relationship between dynamic capability and enterprise performance. SME leaders create digital capabilities by leveraging entrepreneurial orientation to achieve better performance outcomes (Susanto et al., 2023; Kim & Jin, 2024). Leaders successfully explore and learn new things by organising strategies through digital mediators as investments for business development. They can expand their market reach by using digital tools such as e-commerce and social media to sell and advertise, and to identify customer opportunities. This approach will increase sales and customer engagement for SMEs.

Additionally, operations become more efficient, enabling leaders to compete effectively, which ultimately strengthens SMEs' performance. Digital capabilities have been shown to impact SME performance positively. This entrepreneurial onboarding capability enables SMEs to utilise digital tools and platforms to enhance operational efficiency and market reach (Cenamor et al., 2019; Olsson & Bernhard, 2021).

### **Conclusion, limitation, and future research**

This study demonstrates that digital capabilities play a crucial role in enhancing SMEs' performance. SMEs' performance can be improved through innovation, digital leadership, and digital capabilities in company development. With rapid digital advances, businesses can find opportunities and acquire resources. Therefore, digital capability is essential for companies seeking to enhance their digital transformation and overall performance, as digital competencies facilitate insights into various business operations, shifts in customer demand, competitor actions, and market policy implementation.

Based on these findings, several policy implications emerge. At the government level, policymakers must prioritise strengthening the digital ecosystem by expanding access to infrastructure and introducing targeted fiscal incentives, such as tax breaks for SMEs that invest in digital technologies and innovation systems. Regulatory support is also needed to ensure data security and fair digital competition, so that SMEs can operate with confidence in the digital marketplace. At the industry level, the institutionalisation of collaborative platforms and digital networks can facilitate knowledge sharing and resource integration among SMEs, thereby enhancing collective competitiveness. Meanwhile, at the organisational level, SMEs are encouraged to align digital leadership with strategic decision-making processes and adopt data-driven systems to improve responsiveness to market dynamics. Strengthening innovation by integrating digital tools into products and services will further enhance differentiation and value creation.

Although this study made many contributions, it has several limitations: first, the sample is limited to SMEs in a specific geographical region, which may limit the applicability of the findings to other contexts, particularly other regions in East Java. Second, this study focuses on the mediating and moderating roles of digital capability, potentially leading to the omission of other influencing factors, such as organisational culture, employee skills, and external environmental factors. Further research is expected to provide a more comprehensive understanding of the contribution of digital capability to other variables that have not yet been explored, thereby expanding knowledge. Future studies could be conducted with a larger sample to explore different perspectives and recommend adding RBV theory to create a comprehensive model for measuring SME performance.

### Declaration of interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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**Appendix 1.**

*Respondent information*

Respondent Information		Frekuensi	Percentage
City/Regency	Sidoarjo regency	31	15,1 %
	Pasuruan city	19	9,27 %
	Kota Surabaya regency	37	18,05 %
	Gresik regency	20	9,76 %
	Lamongan regency	10	4,88 %
	Malang city	17	8,29 %
	Malang regency	20	9,76 %
	Batu city	22	10,73 %
	Mojokerto regency	8	3,90 %
	Sumenep regency	4	1,95 %
	Blitar regency	1	0,49 %
	Kediri city	2	0,98 %
	Madiun regency	4	1,95 %
	Jember regency	3	1,46 %
	Tuban regency	2	0,98 %
	Jombang regency	3	1,46 %
Tulungagung regency	2	0,98 %	
Annual Turnover	<Rp.50.000.000	44	21%
	<Rp.50.000.000 - Rp.500.000.000	94	46%
	Rp.500.000.000 - 10.000.000.000	63	31%
	>Rp.10.000.000.000	4	2%
Year Established	Less than 3 years	47	23%
	More than 3 years	158	77%
Type SMEs	Food and beverages	53	26%
	Electronics	30	15%
	Furniture	19	9%
	Fashion	30	15%
	Textstiles	13	6%
	Showroom Motorcycle	8	4%
	Beauty	24	12%
	Car Showroom	7	3%
	Gold	14	7%
Other	7	3%	
Position	Owner	123	60%
	Decision maker/Manager	82	40%
Gender	Male	98	48%
	Female	107	52%
Age	25 to 30 years	44	21%
	30 to 35 years	70	34%
	35 to 40 years	49	24%
	40 to 45 years	32	16%
	Over 45 years	10	5%
Length of service	0 to 5 years	57	28%
	5 to 10 years	74	36%
	10 to 15 years	37	18%
	15 to 20 years	22	11%
	20 to 25 years	11	5%
	Over 25 years	4	2%
Education	High School/MA/Equivalent	56	27%
	Diploma I/II/III	46	22%
	Bachelor's Degree (S1)	88	43%
	Master's Degree (S2)	15	7%

Source: data processed using SPSS 24, (2025)

**Appendix 2.**

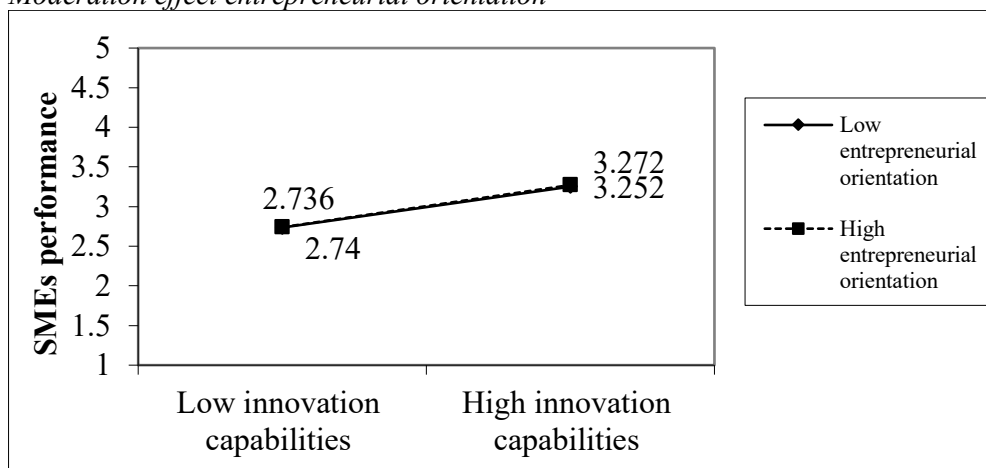
*Validity and reliability test*

Code	Items	OL	AVE	FL	CA	CR
Digital Leadership			0.654	0.693	0.727	0.821
DL1	I guide employees on the potential risks associated with information technology.	0,725				
DL2	Digital leaders raise awareness of technologies that can optimize organizational processes.	0,694				
DL3	Digital leaders collaborate with all stakeholders to establish the ethical standards necessary for information technology practices.	0,708				
DL4	Digital leaders help reduce resistance to innovations introduced by information technology through informative efforts.	0,594				
DL5	Digital leaders encourage employees to engage with the company's vision by guiding them in the use of appropriate technological tools within the organization.	0,734				
Innovation Capability			0.669	0.631	0.733	0.725
IC1	I develop new products through the use of technology	0,674				
IC2	I am able to provide satisfactory service to customers	0,637				
IC3	I introduce new and innovative products to the market	0,704				
IC4	I am able to produce superior products in the market	0,613				
Entrepreneur Orientation			0.605	0.552	0.731	0.793
EO1	Product or service changes in my company are quite significant.	0,629				
EO2	I take advantage of potential opportunities or I place more emphasis on research and development and innovation than on marketing existing products/services	0,655				
EO3	When faced with uncertain decision-making situations, I take a bold approach and an aggressive stance to increase opportunities	0,704				
EO4	To achieve company goals, the impact of business on the environment drives me to act decisively and boldly	0,666				
EO5	I focus on high-risk projects with uncertain outcomes	0,736				
EO6	In general, I adopt a highly competitive stance to beat competitors	0,837				
EO7	When facing competition, I usually take aggressive action against rival companies	0,816				
EO8	I am often the first to introduce new products/services	0,805				
EO9	Over the past 3 years, my company has produced many new products/services	0,642				
SMEs Performance			0.671	0.609	0.831	0.866
SP1	I have increased profits	0,636				
SP2	I have achieved the annual sales targets set	0,659				
SP3	I see many new customers purchasing my products	0,627				

SP4	I provide after-sales service for customer satisfaction	0,643
SP5	I have met consumer demand in terms of product quality	0,631
SP6	I have new product innovations	0,842
SP7	I am able to achieve the targeted quantity and quality of products	0,804
SP8	I have added new business units	0,761
SP9	I have experienced an increase in sales volume	0,766
SP10	I have experienced an increase in product capacity	0,620
SP11	I have experienced growth over the past three years	0,610
Digital Capability		0.542 0.621 0.799 0.849
DC1	I can sense digital technology Innovation Capabilytal trends	0,891
DC2	I can analyze and interpret digital future scenarios	0,635
DC3	We can judge our own/competitors' digital leve	0,685
DC4	We can use digital tools to optimize business processes	0,634
DC5	We can use digital tools for market analysis and product sales	0,874
DC6	We can use digital tools to improve decision-making effectiveness	0,889
DC7	We can use digital technology to integrate and optimize internal and external resources	0,735
DC8	We can use digital technology to refresh our business model	0,693
DC9	We can shape the digital mindset of our employees	0,581

Source: Author's work (2024)

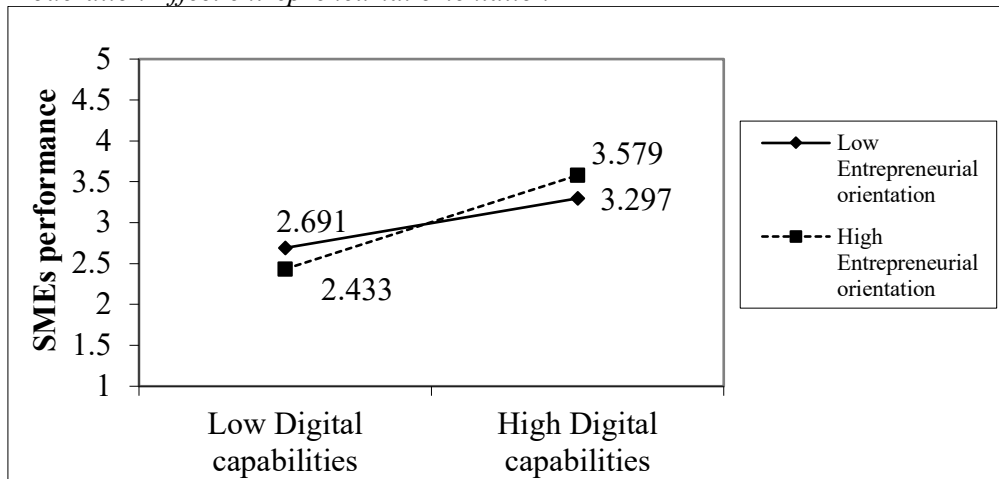
**Figure 3.**  
*Moderation effect entrepreneurial orientation*



Source: data processed using excel, (2025)

**Figure 4.**

*Moderation Effect entrepreneurial orientation*



Source: data processed using excel, (2025)