

Digital Proficiency and Entrepreneurial Mindset for SME Success through Market Savvy and Tech Literacy

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ABSTRACT

Micro, Small, and Medium Enterprises (MSMEs) are vital to Indonesia economy, yet many face challenges in adapting to the digital era. **This study examines** the impact of market orientation on business performance, with digital literacy as a potential mediator, focusing on MSMEs in Surabaya, Indonesia. **Using a quantitative approach**, Structural Equation Modeling (SEM) with Warp-PLS was employed to analyze data from 70 MSME owners collected through questionnaires. **The results demonstrate** that market orientation significantly influences both digital literacy and business performance. However, digital literacy does not mediate the relationship between market orientation and business performance, suggesting that its role is direct rather than intermediary. **These findings highlight** the critical importance of market-oriented strategies in driving MSME success and underline the necessity for improved digital literacy to enhance competitive advantage. MSME managers are encouraged to adopt structured customer feedback mechanisms, invest in digital training programs, and leverage market monitoring tools to better adapt to dynamic market demands. By integrating market orientation with advanced digital practices, MSMEs can achieve sustainable growth and improved operational efficiency. **Future research** should explore other potential mediators, such as innovation capacity or organizational culture, to better understand the dynamics of MSME performance. This study provides valuable insights into how MSMEs in mid-tier urban centers can thrive in the digital era, contributing to broader discussions on entrepreneurship and digital transformation in developing economies.

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1. INTRODUCTION

Micro, Small, and Medium Enterprises (MSMEs) are pivotal to Indonesia informal sector, serving as major contributors to employment and the national economy. MSMEs are a key sector supported by the government, as their growth fosters entrepreneurship and contributes to regional economic development because you can use it source Power nature and sources Power humans have optimally [1].

In 2016, MSMEs accounted for 99.9% of business units in Indonesia and provided employment for nearly 97% of the workforce, highlighting their critical role in the national economy [2]. Based on number the type business micro at most absorb power Work up to 87 percent. Temporary business big only can absorb

3.3%. It appears MSME actors are expected can become pusher growth economy domestic.

However, Indonesia, as one of the countries affected by the spread of the Covid-19 virus, immediately took various anticipatory measures, including suggestions for social distancing, suggestions for working from home, and closing all public service sectors. The Covid-19 pandemic has had a major impact on business sustainability of Micro, Small and Medium Enterprises. Based on results survey, as many as 96% of perpetrators business confess Already experience impact negative Covid-19 on business processes (A total of 1,785 cooperatives and 163,713 actors business micro small intermediate). As many as 75% of them experience impact decline significant sales [3]. The same thing happened in the province of East Java, which is deep several news media be delivered almost 100% of MSMEs experience loss [4]. In this case the owner business small and micro need build market-oriented strategies for develop effort and monitoring need consumer in Century pandemic.

In this condition, MSMEs need notice orientation the market in increase ability accept A information as well as ability browse and identify information received especially in digital form or digital literacy. The city of Surabaya is one of them potential city produce A product or business For help economy society in the midst of a pandemic. The number of MSMEs in the city of Surabaya is 260 thousand [5]. However unfortunately, condition ability perpetrator business scale small town in inner Surabaya using digital media nowadays more inclined to in early majority group where in the group the respondents still try it out various existing technology and for its use required consideration quite a long time. See condition that, then so perpetrator much needed effort training special for develop business. For example give material related benefits, benefits and convenience do sell buy online, practice How method selling on market places, and flows for sell online, as well browse current trend popular then applied in his business.

Surabaya, as Indonesia second-largest city and a hub for economic activity in East Java, hosts approximately 260,000 MSMEs, making it a critical focal point for understanding the interplay between digital literacy and business performance. Unlike other regions in Indonesia, Surabaya presents a unique juxtaposition of rapid urbanization and traditional business practices, where many MSMEs are still in the early stages of digital adoption. This contrasts with regions such as Jakarta, where digital infrastructure and adoption rates are comparatively higher. By focusing on Surabaya, this study aims to shed light on the specific challenges and opportunities faced by MSMEs in mid-tier urban centers, providing insights that are both regionally specific and broadly applicable to similar contexts in developing economies.

This study offers a unique contribution by examining the interplay between market orientation and digital literacy, not only as individual factors but as interconnected drivers of business performance among MSMEs. Unlike previous research, which predominantly focuses on developed economies or larger enterprises, this study centers on MSMEs in Surabaya, a critical yet underexplored economic segment in Indonesia. Furthermore, by employing WarpPLS in the analysis, this research provides a robust methodological framework for understanding complex relationships within small business contexts, delivering insights that are both methodologically and contextually novel.

This study not only contributes to the understanding of market orientation and digital literacy in MSMEs but also aligns with global development goals. Specifically, it supports SDG 8 (Decent Work and Economic Growth) by emphasizing how digital literacy and market-driven strategies enhance business performance, foster job creation, and improve economic resilience. Furthermore, it aligns with SDG 9 (Industry, Innovation, and Infrastructure) by advocating for digital adoption as a key enabler of business transformation, allowing MSMEs to integrate technology for sustainable industrial growth and innovation [6].

2. LITERATURE REVIEW

To comprehensively explore the relationships among market orientation, digital literacy, and MSME performance, this section reviews the theoretical foundations and prior studies. The review focuses on the constructs of market orientation and digital literacy, their relevance to MSME performance, and gaps in the existing literature that this study aims to address.

2.1. Market Orientation

Market orientation is defined as behavior identifying organization need consumer, behavior competitors, spread market information to all over organization and respond to it with something coordination, calculation time, and calculations profit. Apart from that, a lot researcher has conclude that market orientation

has strong impact to performance. Existing literature about market orientation shows that apparently There is correlation positive and very significant between market orientation and performance company [7, 8].

Applied market orientation will form connection with more customers good as can be increase results performance sales, growth, market share and profit. Market Orientation reflects the organization philosophy to identify and meet the needs and requirements of customers by being adaptive [9].

2.2. Digital Literacy

Digital literacy is ability somebody use skills cognitive and technical For use technology with appropriate in various the shape for discover, assess and interpret information. Opinion the powered by [10] establishes there are 6 standards component digital literacy as as follows:

- Responsibility answer digital, use the internet with safe.
- Digitally productive, applying the skills you have for finish every problems in the digital environment.
- Literacy digital information, participants educate capable do research in digital environments.
- Digital collaboration, participants educate can do cooperation in the digital world.
- Digital creativity, participants educate recommended for more believe self in finish something problem with way more specific.
- Digital Learning, encouraging for learning independently, choose, apply and evaluate various digital tools both familiar and foreign.

Digital literacy empowers MSMEs to navigate the complexities of the digital era by equipping them with the skills needed for collaboration, creativity, and independent learning. These competencies enable businesses to optimize operations, foster innovation, and enhance customer engagement in increasingly competitive markets. By aligning digital literacy with a strong market orientation, MSMEs can adapt more effectively to technological advancements and shifting consumer demands, ensuring their resilience and sustained growth in the ever-changing business landscape [11].

2.3. Business Performance

Business performance for business micro small intermediate is results work achieved by employees from tasks that have been done held with not quite enough answer in accordance with tasks that have been done given to her. Result of performance must fulfil quality and quantity so that the results achieved will produce great benefits for his business.

The explanation above is supported by the results study Barna, show that orientation entrepreneurship, market orientation, orientation technology with innovation product own influence positive on excellence product [12]. Whoever has access to computer, have connection to the internet, and have method for pay goods or their services buy, get participate in e-commerce [13, 14].

This research includes to in study justification (newness) namely with give strengthening on weakness study previous through connection between variable that is influence market orientation towards performance business through digital literacy as the median. Based on the explanation above is expected this research can give more knowledge deep and testing connection about variable market orientation, performance business, and digital literacy towards business micro small and medium in Surabaya.

3. RESEARCH METHOD

This study employed a quantitative approach, utilizing Structural Equation Modeling (SEM) with Partial Least Squares (PLS) as the analysis method. WarpPLS software was specifically chosen for its compatibility with small sample sizes and ability to analyze non-linear relationships. PLS, GSCA and WarpPLS software can applied to small samples or large. Neither does the PLS method demands large amounts of data. According to Solimun total samples on SEM WarpPLS can be obtained via the rule of thumb [15]. One of them is ten times as much variable (remembering WarpPLS is part from analysis multivariate). Amount variable in this research is 3 then ten time is 30. Apart from that, SEM Warppls also has it do resampling. So with amount small sample, the information obtained accurate and the data can be normally distributed. With

thereby researcher set amount sample as many as 70 perpetrators business micro small who use digital literacy in management his business it can be done analysis [16].

WarpPLS was selected as the SEM tool for this study due to its capacity to handle small sample sizes effectively, making it particularly suitable for research involving MSMEs, where extensive data collection is often a challenge. Additionally, WarpPLS excels in analyzing models with non-linear relationships and does not require strict assumptions of normality, which aligns well with the exploratory nature of this study. By employing WarpPLS, the study ensures robust and reliable results, offering nuanced insights into the interplay between market orientation, digital literacy, and business performance. This methodological choice strengthens the interpretation of findings, as it accommodates the unique characteristics and constraints of MSME research [17].

Type of data used in this research is primary data from results interview or questionnaire, and secondary data taken from documentation perpetrator business, as well from books and articles. Data collection techniques use studies literature, questionnaires and interviews. In the measurement use scale likert on a scale of 5. Data analysis with using PLS warp. As for the path diagram in this research as following:

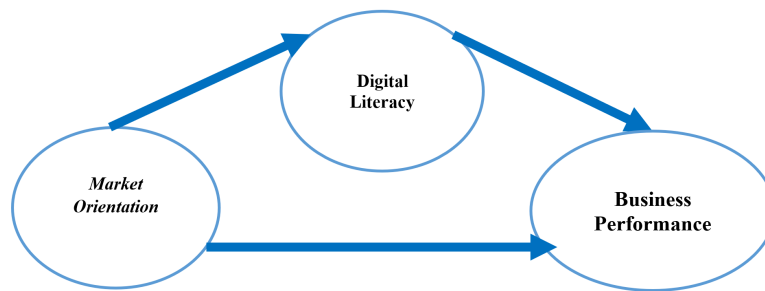


Figure 1. Path Diagram Study
Source: Processed Researcher, 2021

The Figure 1 illustrates the relationship between three key concepts: Market Orientation, Digital Literacy, and Business Performance. Market Orientation directly influences Business Performance, as indicated by the direct arrow connecting the two. Additionally, Market Orientation impacts Digital Literacy, which in turn affects Business Performance. This model highlights the role of Digital Literacy as a mediator linking Market Orientation to Business Performance, emphasizing its importance in enhancing business outcomes through strong market orientation.

4. RESULT AND DISCUSSION

Evaluating the structural model is a critical step in determining whether the relationships between the variables are well-represented and aligned with theoretical expectations. This ensures that the analysis accurately reflects the connections among market orientation, digital literacy, and business performance.

4.1. Fit Models

The goodness of fit test results are used to assess the index and the strength of the relationship between latent variables in the proposed model. The results of this test can be seen in Table 1.

Table 1. Goodness of Fit

No	Model fit and quality indices	Fit Criteria	Analysis Results
1	Average Path Coefficient (APC)	$p < 0.05$	0.355 ($p < 0.001$)
2	Average R-Squared (ARS)	$p < 0.05$	0.236 ($P = 0.010$)
3	Average Adjusted R-Squared (AARS)	$p < 0.05$	0.220 ($p = 0.014$)
4	Average block VIF (AVIF)	Acceptable if ≤ 5 , ideally ≤ 3.3	1.015
5	Average Full Collinearity VIF (AFVIF)	Acceptable if ≤ 5 , ideally ≤ 3.3	1.341

6	Tenenhous GoF (GoF)	Small ≥ 0.1 , medium ≥ 0.25 , large ≥ 0.36	0.386
7	Sympson Paradox Ratio (SPR)	Acceptable if ≥ 0.7 , ideally = 1	1.000
8	R-Squared Contribution Ratio (RSCR)	Acceptable if ≥ 0.9 , ideally = 1	1.000
9	Statistical Suppression Ratio (SSR)	Acceptable if ≥ 0.7	1.000
10	Nonlinear Bivariate Causality Direction Ratio (NLBCDR)	Acceptable if ≥ 0.7	0.667

The results of the goodness of fit test indicate that while some aspects of the relationship model between the constructed variables meet the required fit criteria, others do not. According to Solimun, the necessity to fulfill all fit criteria depends on the objective of the study. If the aim is to identify the best model, then all fit criteria must be satisfied. However, the primary objective of this research is to assess the influence between variables rather than identifying the best model. Therefore, as long as one or two fit criteria are met, the analysis can still proceed [18].

4.2. Profile Variable

This study assesses indicators using loading factors and mean values. The loading factor shows an indicator relationship strength, while the mean reflects performance. Higher values indicate stronger relevance. Table 2 presents the test results for each indicator used, summarizing their contributions to the measured variables.

Table 2. Profile Variable

No	Indicator	Loading Factor	Mean
1	Satisfaction consumer (X1.1)	0.572	4.2
2	Complaint consumer (X1.2)	0.846	4.6
3	Monitor action competitors (X1.3)	0.741	4.2
4	Response to changes made competitors (X1.4)	0.607	4.0
5	Skills Functional and More Advanced (Y1.1)	0.790	3.9
6	Cooperation (Y1.2)	0.723	3.6
7	Communication (Y1.3)	0.800	4.0
8	Ability for find and choose Information (Y1.4)	0.826	4.0
9	Think Critical and Evaluation (Y1.5)	0.819	3.8
10	Understanding Culture and Social (Y1.6)	0.745	3.8
11	Security electronics (Y1.7)	0.858	3.8
12	Market Performance (Y2.1)	0.880	3.9
13	Customer Performance (Y2.2)	0.880	3.7

Data source : Processed Researcher, 2021

Higher loading factor value from 0.7 can show that indicator the capable represent the construct in question. However in his book, Ghozali states that measurement mark loading 0.5 to with 0.6 considered Still can included [19]. Based on the table above, is visible that results mark loading factor more of 0.5 which means all over indicator has fulfil condition for done testing stage next. As for the statement items that have the average value of the highest answer is related X1.2 indicators complaint consumers, besides That there are statement items that have lowest average value is related Y1.2 indicators cooperation.

4.3. Test Result Hypothesis

The relationships among market orientation, digital literacy, and business performance were tested using hypothesis analysis. This research aims to understand both the direct and indirect influences between these variables, highlighting how market orientation and digital literacy contribute to MSME performance.

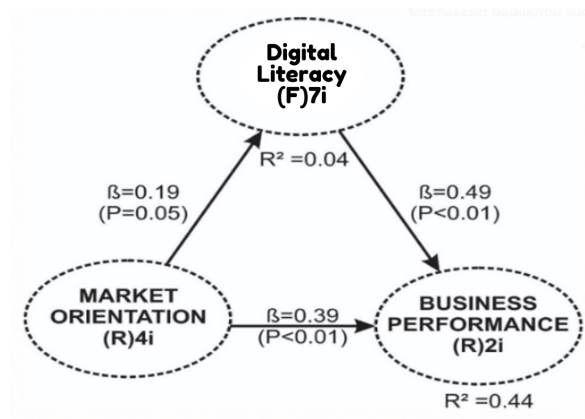


Figure 2. Hypothesis Test Results

The hypothesis framework includes direct influences represented by H1, H2, and H3, as well as an indirect influence tested in H4.

The results depicted in Figure 2 demonstrate that market orientation significantly impacts both digital literacy and business performance. Additionally, digital literacy directly influences business performance but does not mediate the relationship between market orientation and business performance. These findings emphasize the importance of fostering both market-oriented strategies and digital literacy to enhance MSME performance while acknowledging the non-mediating role of digital literacy in this context.

4.3.1. Influence Direct

In testing hypothesis influence direct, for reception or rejection hypothesis based on the terms H_0 are accepted and H_a is rejected if $t_{count} < t_{table}$ for $\alpha = 0.05$ and H_0 is rejected and H_a is accepted if $t_{count} > t_{table}$ for $\alpha = 0.05$, namely:

H1: Market Orientation has an effect to Digital Literacy

H2: Digital Literacy is influential on Business Performance

H3: Market Orientation has an effect on Business Performance

The direct influence between variables, along with their coefficient values and significance levels, is summarized in Table 3:

Table 3. Relationships between Variables

No	Connection between Variable (Variable Descriptor → Variable Response)	Coefficient Track	p-value	Information
1	Market Orientation → Digital Literacy	0.189	0.05	Significant
2	Market Orientation → Business Performance	0.390	<0.001	Highly Significant
3	Digital Literacy → Business Performance	0.488	<0.001	Highly Significant

H1: There is an influence Market Orientation towards Digital Literacy

Influence Market Orientation towards Digital Literacy with coefficient track of 0.189 and $p = 0.05$. Considering that p is the same with 0.05 then said significant, so hypothesis the accepted. Coefficient track marked positive (0.189) indicates that the more tall Market Orientation so Digital Literacy is increasing increase.

H2: There is an influence Market Orientation to Business Performance

Influence Market Orientation to Business Performance with coefficient track of 0.390 and $p < 0.001$. Considering p more small of 0.01 then said highly significant, so hypothesis the accepted. Coefficient track marked positive (0.390) indicates that the more tall Market Orientation so Business Performance increasingly increase.

H3: There is an influence Digital Literacy to Business Performance

Influence Digital Literacy to Business Performance with coefficient track of 0.488 and $p < 0.001$. Considering $p < 0.001$ then said highly significant, so hypothesis the accepted. Coefficient track marked positive (0.488) indicates that the more tall Digital Literacy so Business Performance is increasing increase.

4.3.2. Indirect Influence

In testing hypothesis influence No direct, for reception or rejection hypothesis based on the terms Ho are accepted and Ha is rejected if $t_{count} < t_{table}$ for $\alpha = 0.05$ and Ho is rejected and Ha is accepted if $t_{count} > t_{table}$ for $\alpha = 0.05$.

The details of the indirect influence test results are presented in Table 4 below:

Table 4. Influence No Direct 2 Segment Mediation

No.	Variable Explainer	Variable Mediation	Variable Response	Coefficient Influence No Direct	Track P- Value	Ket
1	Market Orienta- tion	Digital Lit- eracy	Business Perfor- mance	0.092	0.136	No Mediation

H4: Influence Market Orientation to Business Performance through Digital Literacy

Coefficient track influence No direct Market Orientation to Business Performance through Digital Literacy is 0.092 with $p = 0.136$. Considering $p > 0.05$, so Digital Literacy is not is variable mediation. With Thus H4 is rejected.

4.4. Discussion

This research demonstrates that market orientation significantly influences the digital literacy of SMEs, providing them with a substantial competitive advantage in today digital era. Digital literacy, as explored in this study, plays a critical role in enhancing overall business performance. These findings align with previous research, which indicates a strong and positive relationship between market orientation and business performance. Market orientation in SMEs involves a deep understanding of customer needs and preferences, the ability to monitor and analyze competitors, and the capability to respond swiftly to market changes [19]. SMEs with strong market orientation tend to be more open to technological innovation and proactive in adopting digital tools, enabling them to better meet customer demands. This, in turn, fosters improvements in digital literacy among SME owners and employees, as they are required to effectively utilize digital technologies for collecting customer data, analyzing market trends, and optimizing marketing strategies [20].

Furthermore, SMEs must leverage market orientation to identify customer needs and adapt to increasing global competition. Market-oriented SMEs strive to deliver greater value to customers through product and service innovations and operational efficiency, with the ultimate goal of achieving profitability [21]. Through market orientation, SMEs can generate innovative business ideas, gain competitive advantages, and improve overall business performance. Market-oriented activities focus on customer satisfaction by continuously evaluating and aligning products and services with consumer needs, as customer satisfaction is a critical success factor [22]. Various studies highlight that market-oriented small businesses prioritize the market as their key target, utilizing available resources to create sustainable competitive advantages. This approach not only ensures customer satisfaction but also significantly enhances marketing and overall business performance.

Characteristics of the implementing company market orientation can seen from how much big understanding they for fulfil need customer present and future as well as use ability they for offer solution more needs superior than competitor. Market orientation is very important for performance company Because can encourage and support development product new for fulfil current and future market needs [23]. Market orientation can also be help company determine strategy and approach for understand the market. Market orientation applied to a company will form connection with more customers good as can be increase results performance sales, growth, market share and profit [19].

The results of this research demonstrate that a strong market orientation can directly contribute to improved business performance. Enhanced business performance resulting from market orientation can be interpreted as improvements across various operational aspects, such as process efficiency, product innovation, and better resource management. SMEs with a high level of market orientation are more likely to invest in new technologies, employee training, and advanced management systems, all of which contribute to increased

productivity and profitability. Additionally, quick awareness of and response to market changes enable SMEs to remain relevant and competitive, mitigate business risks, and seize new opportunities more effectively. Thus, market orientation serves as a solid strategic foundation for achieving comprehensive business performance improvements [24].

Additionally, mastery digital literacy by capable SMEs reflect digital media with activity related daily activities with product them, like promotion and marketing product. Social media used for marketing like WhatsApp, Instagram, Facebook as well as market places available on digital markets such as Shopee, Tokopedia, Lazada and Alibaba. Influence method online marketing for SMEs can give big profits, expanding his efforts and can earn customer new from his business. This is supported results research [25] explains that use of social media as means promotion and marketing have an impact positive to increasing loyalty customer. So that can be concluded that SMEs in Surabaya City have positive and good abilities and understanding to digital literacy that can support development owned business. So that matter it can provide impact to perpetrator business can get profit high effort.

Capable SMEs Nor can it survive during a pandemic free from ability in manage finance as well as set marketing strategy. Ability adapt the proven with increasing customer awareness through digital marketing [26]. Awareness works for remind return consumer will brand ever Yes, because during the pandemic focus consumer No again on expensive brands or no, but the focus is When this pandemic is over. Many SMEs are capable change method sale from offline to online, start from promotion until marketing strategy innovation [27]. So at the moment pandemic, MSME actors who have using the marketplace as means sale relatively capable endure compared to with those who are still offline [28]. Meanwhile, those who haven't used the marketplace as means sell, start apply it.

In this research, digital literacy equips employees and management with the ability to use technology effectively in both operations and business strategies. Digital literacy encompasses the understanding and skills required to utilize digital tools, software applications, and relevant online platforms for business purposes [29]. With strong digital literacy, MSME owners can leverage data and analytics to make more informed and strategic decisions, improve operational efficiency through automation, and expand market reach via digital marketing and e-commerce platforms. These capabilities collectively contribute to enhanced productivity, cost efficiency, and the ability to respond swiftly to market demands.

Enhancing digital literacy enables MSMEs to innovate more rapidly and adapt effectively to technological changes and market trends. Employees with higher digital literacy are better equipped to integrate new technologies, optimize the use of social media for communication and branding, and leverage digital platforms for collaboration and project management. Additionally, MSMEs can utilize big data and analytics to identify valuable patterns and trends, aiding in strategic planning and product development. Consequently, strong digital literacy helps MSMEs remain competitive, responsive to customer needs, and adaptive to evolving market dynamics, all of which collectively contribute to improved overall business performance.

The ability to leverage digital literacy offers significant and rewarding opportunities for SMEs to thrive in the digital era. SMEs in Surabaya have demonstrated a positive understanding of digital literacy, which supports their efforts in business development and contributes to higher profits for the community at large. SME performance is typically measured across three key aspects: profitability, productivity, and market presence. Profitability refers to the achievement of financial targets as planned by the company [30]. These financial goals generally focus on metrics such as revenue growth, profit margins, cash flow, return on capital employed, return on investment, and overall economic value. Productivity is assessed based on the company ability to meet customer demands effectively and the efficiency of employee performance. Business performance in terms of market presence is evaluated by metrics such as product sales achievements, market position, and market share. Moreover, the more SMEs engage in social media marketing, the greater the profits they are likely to achieve.

In the literature, market orientation is often associated with improved business performance through a deeper understanding of customer needs and preferences, as well as the ability to adapt to market changes. Digital literacy, on the other hand, is viewed as the ability to effectively utilize digital technology in operations and business strategy, enhancing efficiency and boosting the competitiveness of MSMEs. However, the results of this study reveal that digital literacy does not significantly alter or strengthen the connection between market orientation and business performance in the MSMEs analyzed. This may be attributed to various factors, such as suboptimal technology adoption levels, insufficient training, or differences in industry contexts that influence the role of digital literacy.

The findings of this study, while focused on MSMEs in Surabaya, are broadly applicable to other

regions and industries. For instance, the principles of market orientation such as understanding customer needs and monitoring competitors are universal and can be adapted to industries like retail, manufacturing, and services. Similarly, enhancing digital literacy offers value across sectors by enabling businesses to leverage e-commerce platforms, optimize supply chains, and improve customer engagement through digital marketing. In regions where MSMEs face similar challenges, such as limited resources and technological adoption barriers, the strategies outlined in this study can serve as a blueprint for fostering resilience and competitive advantage. Future research could further explore these applications, tailoring the framework to specific industries or regional characteristics to enhance its generalizability.

5. MANAGERIAL IMPLICATIONS

The findings of this study suggest three key managerial actions that MSME leaders can implement to improve business performance through market orientation and digital literacy:

- MSME managers should establish structured mechanisms to gather and analyze customer feedback regularly. This can include simple surveys, digital feedback tools, or monitoring social media interactions. Understanding customer needs helps businesses align products and services with market demand, ensuring customer loyalty and satisfaction.
- MSMEs must allocate resources for training employees and management in digital skills. This includes practical workshops on using e-commerce platforms, leveraging digital marketing tools, and interpreting data analytics. Improved digital competencies empower businesses to expand market reach and optimize operations.
- Managers should utilize accessible tools, such as Google Trends, competitor analysis software, or social media analytics, to stay updated on market trends and competitor activities. Proactively monitoring market dynamics enables MSMEs to adapt quickly and maintain a competitive edge.

6. CONCLUSION

This study highlights the critical roles of market orientation and digital literacy in enhancing the performance of MSMEs, particularly in Surabaya. Market orientation directly influences business performance and digital literacy, while digital literacy serves as a key driver for operational efficiency and customer engagement. However, digital literacy does not mediate the relationship between market orientation and business performance, suggesting that other factors may bridge this connection. These findings underscore the importance of integrating digital tools and market-oriented strategies to achieve sustainable growth for MSMEs.

The reliance on self-reported data collected through questionnaires introduces potential biases, such as social desirability bias or inaccuracies in responses. Additionally, the sample size of 70 participants, while sufficient for the analytical methods used, may limit the generalizability of the findings. The study focus on MSMEs in Surabaya also means that regional characteristics could influence the results, making them less applicable to other regions or industries with different contexts.


To address these limitations, future research should consider triangulating self-reported data with observational or transactional data to enhance objectivity and reliability. Expanding the sample size and including MSMEs from diverse regions and industries would improve the generalizability of findings. Furthermore, exploring alternative mediating variables, such as innovation capacity or organizational culture, could provide deeper insights into the dynamics of MSME performance. Longitudinal studies examining changes in digital literacy and market orientation over time would also offer valuable contributions to this growing area of research.

7. DECLARATIONS

7.1. About Authors

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7.2. Author Contributions

Conceptualization: SS; Methodology: SS; Software: AA; Validation: SS and ML; Formal Analysis: SS; Investigation: AA; Resources: AA; Data Curation: SS; Writing Original Draft Preparation: SS and AA; Writing Review and Editing: ML and AA; Visualization: SS; All authors, SS, ML, and AA, have read and agreed to the published version of the manuscript.

7.3. Data Availability Statement

The data presented in this study are available on request from the corresponding author.

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7.5. Declaration of Conflicting Interest

The authors declare that they have no conflicts of interest, known competing financial interests, or personal relationships that could have influenced the work reported in this paper.

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