e-ISSN 2746-5667
5th INTERNATIONAL CONFERENCE ON BUSINESS & SOCIAL SCIENCES
RESPONSIBLE AI AND HUMAN-CENTERED DESIGN: BRIDGING ETHICS AND INNOVATION

CHALLENGES SUSTAINABILITY OF MSMEs IN THE DIGITAL ERA IN BONTANG

Muh.Takwin[1*]

[1]Doctoral Program in Management Science, Indonesian College of Economics (STIESIA) Surabaya

*Corresponding Author: anditakwin22@gmail.com

Abstract: Purpose: This study aims to analyze the influence of digital literacy, entrepreneurial orientation, access to digital finance, and competitive pressure on the business performance of MSMEs, and its implications for their sustainability in Bontang City. The research employed a quantitative approach with explanatory design. Population of this research were all MSMEs in Bontang City with sample of 120 respondents selected through purposive sampling. Data analysis used Structural Equation Modeling with Partial Least Squares (PLS-SEM) approach. The results reveal that digital literacy, entrepreneurial orientation, and competitive pressure have significant effects on business performance of MSMEs with path coefficients of 0.291 (p=0.002), 0.324 (p=0.000), and 0.228 (p=0.008) respectively. Access to digital finance does not show significant direct effect on business performance (p=0.229). Business performance significantly affects MSMEs sustainability with path coefficient of 0.401 (p=0.000). Business performance also proven to mediate the influence of digital literacy, entrepreneurial orientation, and competitive pressure on MSMEs sustainability. The findings emphasize the critical role of digital skills, proactive entrepreneurial strategies, and market dynamics in enhancing performance and supporting long-term business sustainability. MSMEs need to improve digital literacy and entrepreneurial orientation to face competitive pressure in digital era. This research provides a comprehensive model that links digital and entrepreneurial drivers to sustainability through business performance in the specific context of MSMEs in industrial cities in Indonesia.

Keywords: Digital Literacy, Entrepreneurial Orientation, Digital Finance, Competitive Pressure, Business Performance, MSME Sustainability

---

1. Introduction

Micro, Small, and Medium Enterprises (MSMEs) are recognized as the backbone of Indonesian economy, contributing significantly to Gross Domestic Product (GDP) and employment. According to data from the Ministry of Cooperatives and SMEs (2023), MSMEs contribute 61.07% to Indonesia's GDP and absorb 97% of the total workforce. In Bontang City, which is known as a strategic industrial hub in East Kalimantan, MSMEs play a vital role in supporting the local community and diversifying the economic base beyond large corporations in oil and gas sector.

However, the rapid advent of the digital era presents both unprecedented opportunities and formidable challenges for these businesses. The phenomenon observed in Bontang shows a growing digital divide, where many MSMEs struggle to adapt to e-commerce platforms, digital marketing, and online payment systems. Based on a report from the Bontang City Cooperatives and MSMEs Office (2023), approximately 65% of local MSMEs have not yet integrated digital tools into their operations effectively, potentially hindering their growth and competitiveness in the regional market.

The digital transformation accelerated by the COVID-19 pandemic has forced businesses to adapt quickly to digital platforms. However, many MSMEs in Bontang face significant constraints in this transition. Factors such as low digital literacy, a reactive rather than proactive business mindset, and limited access to tailored digital financial products are highlighted as key constraints in several focus group discussions conducted by local business development agencies. This phenomenon underscores the urgency of evaluating the managerial and strategic factors that underpin MSME resilience and performance in the digital age.

Furthermore, the competitive pressure from larger, digitally-savvy businesses and other MSMEs entering the online marketplace is intensifying, forcing local businesses to adapt or risk obsolescence. A preliminary survey conducted in early 2023 showed that 45% of MSMEs in Bontang reported decreased sales due to competition from online sellers from other regions.

On the other hand, the concept of business sustainability in the digital age emphasizes the importance of adopting strategies that ensure not only short-term profitability but also long-term viability, adaptability, and positive social impact. Sustainable MSMEs are those that can leverage digital tools to enhance efficiency, reach new markets, and build customer loyalty. Elia et al. (2020) emphasize that digital transformation, when coupled with a strong entrepreneurial spirit, can build a resilient and sustainable business model. Practices that prioritize continuous learning, innovation, and strategic agility are believed to foster positive outcomes such as improved performance and long-term sustainability.

Based on this background, the research questions in this study are: How do digital literacy, entrepreneurial orientation, access to digital finance, and competitive pressure influence the business performance of MSMEs in Bontang? And how does business performance contribute to their overall sustainability in the digital era? The purpose of this research is to empirically test the relationships between these variables and provide recommendations for strengthening MSME support policies in Bontang.

2. Literature review

Digital Literacy

Digital literacy refers to the ability to use digital technology, communication tools, and networks to access, manage, integrate, evaluate, and create information (van Dijk, 2020). In the context of MSMEs, digital literacy encompasses skills in using e-commerce platforms, social media for marketing, digital payment systems, and basic data analysis. MSME owners with high digital literacy can effectively utilize digital tools to enhance their business operations. Prior studies (e.g., Utomo et al., 2023) have proven that digital literacy enhances operational efficiency and market reach, positively impacting business performance. Indicators of digital literacy include: (1) Ability to use digital devices and applications; (2) Understanding of digital marketing concepts; (3) Capability in utilizing e-commerce platforms.

Entrepreneurial Orientation

Entrepreneurial orientation is defined as the strategy-making processes and styles of firms that engage in entrepreneurial activities, characterized by innovativeness, proactiveness, and risk-taking (Lumpkin & Dess, 1996). Firms with a strong entrepreneurial orientation are more likely to seize new opportunities and adapt to market changes. Research by Hermawan et al. (2023) states that entrepreneurially oriented MSMEs show higher performance and resilience in dynamic environments. Indicators include: (1) Innovation in products/services; (2) Proactive in seeking new opportunities; (3) Willingness to take business risks.

Access to Digital Finance

Access to digital finance involves the availability and use of financial services delivered through digital platforms, such as mobile banking, e-wallets, and fintech lending (Ozili, 2018). It is expected to lower transaction costs and improve financial inclusion for MSMEs. However, studies in developing contexts (e.g., Suryono et al., 2021) show that its impact on performance can be mixed, depending on trust, usability, and regulatory support. Indicators include: (1) Ease of access to digital payment systems; (2) Availability of digital lending platforms; (3) Understanding of digital financial products.

Competitive Pressure

Competitive pressure is the degree of strain felt by a business due to the actions of competitors in its market (Porter, 2008). In the digital era, this pressure is intensified by the ease of market entry and global competition. This pressure can be a double-edged sword; it can threaten survival but also force businesses to innovate and improve efficiency. Li et al. (2022) found that competitive pressure significantly drives the adoption of digital technologies and can lead to performance improvements. Indicators include: (1) Intensity of local competition; (2) Pressure from online competitors; (3) Need for continuous innovation.

Business Performance

Business performance reflects the outcomes of a business based on its economic and operational goals. Indicators according to Richard et al. (2009) include sales growth, profitability, market share, and customer satisfaction. In the context of MSMEs, performance is a critical precursor to long-term survival and growth. Indicators include: (1) Sales growth; (2) Profitability; (3) Market share; (4) Customer satisfaction.

MSME Sustainability

MSME sustainability refers to the ability of a business to maintain its operations and achieve long-term goals by balancing economic viability, social responsibility, and environmental stewardship, while adapting to changing market conditions (Johnson & Schaltegger, 2020). In the digital era, this includes the capacity for continuous digital adaptation and innovation. Indicators include: (1) Business continuity; (2) Ability to adapt to market changes; (3) Social responsibility; (4) Environmental awareness.

Hypothesis Development

Based on theoretical and empirical reviews, the research hypotheses are formulated as follows:
H1: Digital literacy has significant positive effect on business performance
H2: Entrepreneurial orientation has significant positive effect on business performance
H3: Access to digital finance has significant positive effect on business performance
H4: Competitive pressure has significant positive effect on business performance
H5: Business performance has significant positive effect on MSME sustainability
H6: Business performance mediates the effect of digital literacy on MSME sustainability
H7: Business performance mediates the effect of entrepreneurial orientation on MSME sustainability
H8: Business performance mediates the effect of access to digital finance on MSME sustainability
H9: Business performance mediates the effect of competitive pressure on MSME sustainability
The conceptual framework of this research can be illustrated as follows:
Digital Literacy → Entrepreneurial Orientation → Business Performance → MSME Sustainability → Access to Digital Finance → Competitive Pressure →

3. Method

Research Design

This study uses a quantitative approach with explanatory research design. The research aims to explain the causal relationships between variables through hypothesis testing.

Population and Sample

The population is all registered MSMEs in Bontang City, which amounts to 1,250 businesses according to data from the Bontang City Cooperatives and MSMEs Office (2023). The sample was determined using the Slovin formula with 5% margin of error, resulting in 300 MSMEs.

However, after considering accessibility and response rate, the final sample was taken purposively based on criteria of MSMEs that have been operating for at least one year and have some exposure to digital tools (e.g., using smartphones for business, social media, etc.). The number of samples that met the criteria and provided complete responses was 120 respondents.

Data Collection

Data collection was conducted through structured questionnaires distributed directly and online to MSME owners in Bontang from January to March 2024. The questionnaire used a Likert scale of 1 to 5 (1 = strongly disagree to 5 = strongly agree). Before the main survey, a pilot test was conducted with 30 MSME owners to test the validity and reliability of the instrument.

Data Analysis

Data analysis was performed using Structural Equation Modeling with the Partial Least Square (PLS-SEM) approach using SmartPLS 3.0 software. The analysis was conducted in two stages: first, testing the outer model to assess the validity and reliability of the instrument through loading factor values, Average Variance Extracted (AVE), and composite reliability. Second, testing the inner model to determine the relationships between variables by examining path coefficients and t-statistics with bootstrap resampling of 5000 samples.

Operational Definition of Variables

All variables were measured reflectively using multiple indicators adapted from previous studies with modifications to fit the context of MSMEs in Indonesia.

4. Discussion

The results show that Digital Literacy has a significant positive effect on Business Performance (H1 supported). This indicates that MSME owners in Bontang who possess the skills to effectively use digital tools can improve their sales, efficiency, and customer engagement. This finding aligns with van Dijk (2020), who emphasized that digital competence is a key resource in the modern economy. MSMEs with high digital literacy can leverage online platforms to reach wider markets and optimize their operations.

Entrepreneurial Orientation significantly influences Business Performance (H2 supported). MSMEs that are innovative, proactive, and willing to take calculated risks are better positioned to identify new market opportunities and adapt their business models, leading to superior performance. This supports the theory of Lumpkin & Dess (1996). In the context of Bontang, MSMEs with strong entrepreneurial orientation are more likely to develop unique products and services that differentiate them from competitors.

Access to Digital Finance did not show a significant direct effect on Business Performance (H3 not supported). A possible explanation is that while digital financial services are available, MSMEs in Bontang may face issues related to trust, digital security concerns, or a lack of products tailored to their specific needs. Simply having access does not automatically translate into performance gains without addressing these underlying barriers. This finding contradicts Ozili (2018) but aligns with Suryono et al. (2021) who found contextual factors significantly influence the effectiveness of digital finance.

Competitive Pressure has a significant positive effect on Business Performance (H4 supported). This suggests that the pressure from competitors acts as a catalyst for MSMEs in Bontang to improve their offerings, become more efficient, and adopt necessary digital technologies to stay relevant, consistent with Porter's (2008) views on competitive dynamics. MSMEs that perceive high competitive pressure are motivated to innovate and enhance their value proposition.

Business Performance has a strong, significant effect on MSME Sustainability (H5 supported). This is a crucial finding, as it confirms that achieving good financial and market performance provides the necessary resources and stability for MSMEs to invest in long-term strategies, ensure their survival, and contribute to the local economy sustainably. This supports Johnson & Schaltegger's (2020) emphasis on economic viability as foundation for sustainability.

The mediation analysis shows that Business Performance successfully mediates the influence of Digital Literacy, Entrepreneurial Orientation, and Competitive Pressure on MSME Sustainability (H6, H7, H9 supported). This confirms that these factors contribute to sustainability primarily by first enhancing the business's performance. The mediation for Access to Digital Finance was not significant (H8 not supported), reinforcing its non-significant direct effect.

5. Conclusion

This study concludes that the sustainability of MSMEs in Bontang in the digital era is significantly driven by their business performance. Key factors that enhance this performance are digital literacy, entrepreneurial orientation, and competitive pressure. Surprisingly, access to digital finance alone does not directly boost performance, indicating a need for more holistic support beyond mere availability.

Theoretical contributions of this study lie in validating a model that links digital and entrepreneurial drivers to sustainability via performance in the specific context of a developing city's MSMEs. It highlights that performance is a central mechanism for achieving sustainability.

Theoretical Implications

This research contributes to the literature by providing empirical evidence on the relationships between digital era challenges and MSME sustainability in the context of an industrial city in Indonesia. The findings support and extend the Resource-Based View theory by demonstrating how digital literacy and entrepreneurial orientation serve as valuable resources that drive performance and sustainability.

Practical Implications

The findings suggest several practical implications:

1. Local governments and business development agencies should focus on enhancing the digital literacy of MSME owners through targeted and practical training programs that address specific business needs.
2. Fostering an entrepreneurial mindset through mentoring, workshops, and networking opportunities is crucial for building resilient businesses that can adapt to digital transformation.
3. Policymakers should work with financial institutions to improve the relevance, security, and trustworthiness of digital finance products for MSMEs, moving beyond simple access to ensure effective utilization.
4. MSMEs should view competitive pressure as a motivator for innovation and continuous improvement rather than merely a threat.

Limitations and Suggestions for Future Research

A limitation of this study is its focus on a single city and its cross-sectional design, which limits generalizability and causal inference. Future research could employ a longitudinal approach, expand the geographical scope to include multiple cities, and include qualitative methods to

STIESIA ICOBUSS e-ISSN 2746-5667

gain deeper insights into the contextual challenges and strategies of MSMEs. Additional variables such as government support, leadership style, and technological infrastructure could be incorporated to provide a more comprehensive understanding. This would help in developing more adaptive, inclusive, and sustainable support policies for the MSME sector in the digital age.

References

Elia, G., Margherita, A., & Passiante, G. (2020). Digital entrepreneurship ecosystem: How digital technologies and collective intelligence are reshaping the entrepreneurial process. Technological Forecasting and Social Change, 150, 119791.

Hermawan, M. S., Suharmomo, S., & Purwanto, E. (2023). Entrepreneurial orientation and SMEs performance: The mediating role of innovation capability. Journal of Small Business Strategy, 33(1), 45-58.

Johnson, M. P., & Schaltegger, S. (2020). Entrepreneurship for sustainable development: A review and model future research. Journal of Business Venturing, 35(5), 106038.

Li, L., Tong, Y., Wei, L., & Yang, S. (2022). Digital transformation: A review and research agenda. Journal of Management Analytics, 9(2), 125-148.

Lumpkin, G. T., & Dess, G. G. (1996). Clarifying the entrepreneurial orientation construct and linking it to performance. Academy of Management Review, 21(1), 135-172.

Ozili, P. K. (2018). Impact of digital finance on financial inclusion and stability. Borsa Istanbul Review, 18(4), 329-340.

Porter, M. E. (2008). The five competitive forces that shape strategy. Harvard business review, 86(1), 78-93.

Richard, P. J., Devinney, T. M., Yip, G. S., & Johnson, G. (2009). Measuring organizational performance: Towards methodological best practice. Journal of Management, 35(3), 718-804.

Suryono, R. R., Budi, I., & Purwandari, B. (2021). Challenges and trends of financial technology (Fintech): A systematic literature review. Information, 12(7), 267.

Utomo, H., Nurhaida, T., & Novianti, E. (2023). The role of digital literacy on MSME performance during the COVID-19 pandemic. Journal of Asian Finance, Economics and Business, 10(2), 45-55.

Van Dijk, J. A. G. M. (2020). The digital divide. John Wiley & Sons.