

ADAPTIVE STRATEGY IN BUILDING COMPETITIVE ADVANTAGE OF MSMES INTEGRATION OF INNOVATION, DIGITALIZATION, AND SUSTAINABILITY

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Abstract

This study analyzes the integration of product innovation, digitalization, and sustainability in shaping the competitive advantage of MSMEs in Gunung Pati. The research responds to a gap in the literature, which still examines these three variables separately and assumes that strategy is planned, whereas MSME practices demonstrate adaptive and contextual patterns. This study employs a qualitative approach with a multiple case study design, using observation, in-depth interviews, and documentation as data collection techniques. Data were analyzed using thematic analysis and cross-case analysis. The findings reveal that competitive advantage is formed through the integration of the three variables, which develop organically. Innovation is contextual and based on local creativity, digitalization is utilized adaptively but not yet strategically, and sustainability functions more as operational efficiency rather than formal differentiation. This integration is not planned but emerges as an adaptive and context-based emergent strategy. This study contributes by extending the Resource-Based View and dynamic capabilities perspectives through a contextual approach and provides practical implications for developing adaptive and sustainable MSME strategies.

Keywords: Adaptive Strategy, Competitive Advantage; Msmes; Product Innovation; Digitalization; Sustainability;

INTRODUCTION

Micro, Small, and Medium Enterprises (MSMEs) play a strategic role in driving local economic growth, particularly in developing countries. In Indonesia, MSMEs contribute significantly to employment creation and income generation. However, MSMEs also face increasingly complex challenges due to dynamic market competition, technological developments, and shifting consumer preferences. These conditions require MSMEs to continuously adapt to maintain their competitive advantage (Sakova et al., 2025). In a dynamic business environment, competitive advantage is no longer solely determined by ownership of resources but also by the ability to manage and develop these resources effectively. The Resource-Based View (RBV) explains that internal resources are a key factor in achieving competitive advantage, while the dynamic capabilities perspective emphasizes the importance of adaptability in responding to environmental changes (Widyastuti et al., 2017). Therefore, MSMEs are required not only to possess resources but also to transform them into relevant strategies in accordance with market demands.

Product innovation is one of the key factors in creating differentiation and increasing the attractiveness of products in the market. Innovation enables MSMEs to offer unique value that is difficult for competitors to imitate (Wibowo et al., 2024). In addition, market orientation also influences the innovation process, as it encourages business actors to better understand consumer needs and preferences (Margaretha & Suryana, 2023). However, in practice, innovation in MSMEs is often carried out in a simple and informal manner, based more on experience than structured planning. Digitalization has also become an important aspect in improving MSME competitiveness. The use of digital platforms such as social media, e-commerce, and digital payment systems allows business actors to expand their market reach and improve operational efficiency (Octora et al., 2021). Furthermore, the adoption of mobile commerce reflects the increasing role of technology in transforming business processes (Alfan et al., 2026). Nevertheless, the level of digitalization among MSMEs remains uneven, and its implementation is often limited to practical needs rather than strategic planning.

In addition to innovation and digitalization, sustainability has emerged as a relevant aspect in business development. Sustainability practices, such as resource efficiency, waste reduction, and the use of environmentally friendly materials, can support long-term business resilience (Munawar et al., 2025). Moreover, sustainability can also enhance product value and attract environmentally conscious consumers (Hastiningsih et al., 2026). However, many MSMEs still implement sustainability practices primarily for operational efficiency rather than as a strategic differentiation factor. Previous studies have generally examined innovation, digitalization, and sustainability as separate variables, focusing on their individual effects on business performance. However, limited research has explored how these three aspects interact and integrate within the context of MSME practices. In addition, most studies assume that business strategy is developed through formal and structured processes, while in reality, MSME strategies often evolve through experience and adaptation.

Based on this research gap, this study aims to analyze how the integration of product innovation, digitalization, and sustainability shapes the competitive advantage of MSMEs in Gunung Pati. This study also seeks to understand how these strategies develop contextually and adaptively within MSME practices. By adopting a qualitative approach, this research provides a more comprehensive understanding of the dynamics of MSME strategies in real-world settings. This study contributes to the literature by offering an integrative perspective on competitive advantage, demonstrating how competitive advantage emerges through the dynamic interaction of innovation, digitalization, and sustainability. The proposed model extends existing perspectives on MSME strategy by emphasizing adaptive and context-driven processes. Furthermore, the findings highlight the central role of adaptive capabilities in shaping flexible and context-sensitive strategic responses among MSMEs

LITERATURE REVIEW

Innovation is widely recognized as a key driver of competitive advantage, particularly in dynamic and competitive markets. In the context of MSMEs, innovation often takes the form of product differentiation, modification, and adaptation to consumer preferences. Widyastuti et al. (2017) highlight that innovation in small businesses is closely related to entrepreneurial orientation, which encourages creativity despite limited resources. Similarly, Margaretha and Suryana (2023) emphasize that market orientation plays a crucial role in shaping innovation by aligning products with customer needs. However, innovation in MSMEs differs from the structured innovation processes commonly discussed in the literature. Wibowo et al. (2024) argue that innovation is typically viewed as a strategic and planned activity aimed at achieving competitive advantage. In contrast, MSMEs often rely on informal and experience-based approaches, such as trial-and-error and imitation. This suggests that innovation in MSMEs is more adaptive and contextual rather than systematic and formalized.

Furthermore, innovation in MSMEs is not limited to product development but also includes aspects such as packaging, presentation, and value-added features. These practices indicate that innovation emerges from continuous interaction with the market rather than from formal research and development activities. Therefore, innovation in MSMEs can be understood as a dynamic process shaped by practical experience and environmental conditions.

Digitalization has become an essential component of modern business operations, enabling MSMEs to expand market reach and improve efficiency. Octora et al. (2021) demonstrate that e-commerce adoption can enhance competitiveness by increasing visibility and accessibility. In addition, Alfian et al. (2026) highlight that mobile commerce acceptance is influenced by the readiness and capability of business actors to adopt digital technologies. Despite its potential, digitalization in MSMEs is often implemented in a limited and practical manner. Suliyanto et al. (2026) identify various challenges in social commerce adoption, including limited digital literacy and technological constraints. Similarly, Widiastini et al. (2023) find that MSMEs tend to use digital tools in a simple and fragmented way rather than as part of an integrated strategy.

Lussak and Darmawan (2022) suggest that technology can support operational improvement and service innovation. However, in practice, MSMEs often utilize digital tools primarily for basic functions such as communication and promotion. This indicates a gap between the theoretical potential of digitalization and its actual implementation. Consequently, digitalization in MSMEs should be viewed as a gradual and adaptive process influenced by resource availability and business needs.

Sustainability has gained increasing attention as a critical factor in long-term business development. In MSMEs, sustainability practices often emerge from the need to optimize resources and reduce operational costs. Bernardo and Ray (2024) argue that sustainability in small businesses is closely linked to resilience, particularly during periods of uncertainty. From a theoretical perspective, sustainability can be integrated into business strategy to enhance competitiveness and create value (Munawar et al., 2025). Hastiningsih et al. (2026) further emphasize that sustainability based on local identity can strengthen product attractiveness and support sustainable tourism

development. However, these perspectives are not always reflected in MSME practices. In reality, sustainability in MSMEs is frequently implemented as an operational necessity rather than a strategic initiative. Practices such as waste reduction, resource efficiency, and the use of local materials are often driven by cost considerations. Komaladewi et al. (2019) also highlight the importance of local characteristics in shaping business attractiveness, which aligns with sustainability practices rooted in local resources. Therefore, sustainability in MSMEs can be understood as a practical and context-dependent approach rather than a formal strategic framework.

In a dynamic business environment, the ability to adapt is crucial for maintaining competitiveness. Sakova et al. (2025) emphasize that dynamic environments require businesses to develop capabilities that enable rapid responses to change. Sari and Ahmad (2026) further argue that organizational agility plays a significant role in enhancing competitiveness. However, in MSMEs, adaptation does not always occur through formal strategic planning. Widyastuti et al. (2017) suggest that small business actors often rely on experience and intuition in decision-making. Similarly, Sutrisno et al. (2025) highlight the importance of strategic integration, but such integration is rarely explicitly formulated in MSME practices. This indicates that MSME strategies tend to evolve through continuous interaction with the business environment. Rather than being deliberately planned, strategies often emerge from practical actions and learning processes. As a result, MSME strategies can be characterized as adaptive and context-driven, reflecting the dynamic nature of small business operations.

Although previous studies have examined innovation, digitalization, and sustainability in MSMEs, most focus on the relationships among these variables and their impact on performance. These studies tend to assume that business strategies are developed through formal and structured processes. However, limited research has explored how MSME actors actually implement and manage these aspects in their daily business activities. Moreover, existing literature does not fully capture the practical dynamics of MSMEs, which are shaped by resource constraints, experience, and direct market interaction. Therefore, this study aims to address this gap by examining how innovation, digitalization, and sustainability are practiced and integrated contextually and adaptively within MSMEs. By focusing on real-world practices, this study provides a deeper understanding of how competitive advantage is formed through everyday business activities rather than formal strategic planning.

METHOD

A. Research Approach and Design

This study employs a qualitative approach using a multiple case study design to gain an in-depth understanding of MSME business practices in real-world contexts. This approach is considered appropriate for exploring complex phenomena that cannot be adequately captured through quantitative methods. The multiple case study design allows for comparisons across different business units, enabling a more comprehensive understanding of emerging patterns. The focus of this research is to examine how MSME actors manage innovation, digitalization, and sustainability in their daily business activities. Therefore, the qualitative approach provides flexibility in capturing experiences, perceptions, and contextual dynamics. In addition, this design facilitates the identification of adaptive strategies that develop organically within each business unit.

B. Research Setting and Participants

The study was conducted in Gunung Pati, a region characterized by dynamic MSME development, particularly in the culinary and locally based business sectors. The research participants consist of selected MSME actors, chosen through purposive sampling based on criteria such as business continuity, engagement in market activities, and relevance to innovation, digitalization, and sustainability practices. Each MSME is treated as an individual case, allowing for detailed exploration of business practices. This approach enables the study to capture variations across different types of businesses, providing a richer and more nuanced understanding of MSME strategies.

C. Characteristics of MSMEs

This study involves ten MSMEs operating in various sectors, including culinary, beverage, local food processing, services, and handicrafts. The diversity of business types allows for broader exploration of adaptive practices across different contexts.

No MSME Name	Business Sector
1 Jasuke (Corn-Milk-Cheese)	Culinary (processed corn snacks)
2 Keripik Mbak Binung	Culinary (chips/snacks)
3 Fresh Juice Indonesia	Beverage (juice & fruit-based products)
4 Pisang Goreng (Euy)	Culinary (modern banana products)
5 Angkringan 41	Traditional culinary
6 Miluji Aneka Catering	Local food processing (cassava-based products)
7 Ayam Geprek Bakar	Culinary (processed chicken)
8 Tempe Kelor	Health-oriented food
9 Printing & Photocopy Services	Service (document and printing services)
10 Batik Sentral Malam	Handicraft and textile

The diversity of sectors supports cross-case analysis and enhances the comprehensiveness of the findings regarding adaptive MSME practices.

D. Data Collection Techniques

Data were collected through three primary techniques: in-depth interviews, direct observation, and documentation. Semi-structured interviews were conducted to allow flexibility in exploring participants' experiences and perspectives. Observations were carried out to capture real business activities, including production processes, customer interactions, and the use of technology. Documentation served as supporting data to strengthen the findings. This study involved multiple researchers, each responsible for collecting data from a specific MSME. Each researcher conducted fieldwork and interviews directly with one business unit, allowing for deeper and more contextual exploration. This approach enhances data validity through direct engagement and enables cross-case triangulation. The involvement of multiple researchers also provides diverse perspectives and minimizes individual bias in the data collection process.

E. Data Analysis Techniques

Data were analyzed using thematic analysis to identify patterns and themes emerging from the field data. The analysis process followed several stages, including data reduction, coding, categorization, and interpretation. The study applied open coding to identify initial concepts, followed by axial coding to group related codes into categories, and selective coding to develop core themes. This process resulted in three main variables: innovation, digitalization, and sustainability. In addition, cross-case analysis was conducted to compare findings across different MSMEs. This approach allows the identification of similarities and differences in business practices, leading to a deeper understanding of adaptive strategies. Data analysis was carried out collaboratively through discussions among researchers to ensure consistency and depth of interpretation, as well as to reduce subjective bias.

F. Validity and Trustworthiness

To ensure data validity, this study employed triangulation of sources and methods. Source triangulation was conducted by comparing information obtained from different participants, while method triangulation involved comparing interview, observation, and documentation data. Furthermore, continuous discussions among researchers were conducted to verify the consistency of findings. The involvement of multiple researchers enables cross-validation and strengthens the credibility of the results. Therefore, the findings of this study can be considered reliable and trustworthy.

G. Author Contributions

All authors contributed to the research process. The first author was responsible for conceptualization, research design, and manuscript preparation. Co-authors were involved in data collection, where each researcher conducted fieldwork and interviews with individual MSME units. Data analysis was carried out collaboratively through cross-case discussions to ensure consistency and depth of interpretation. All authors reviewed and approved the final manuscript.

RESULTS AND DISCUSSION

The findings of this study are derived from a thematic analysis process involving open coding, axial coding, and selective coding (see Appendix A1-A6). This process resulted in three main variables: innovation, digitalization, and sustainability, which form the basis of the analysis. The discussion is structured according to these variables and their integration within MSME practices.

A. Innovation Practices in MSMEs

The results indicate that innovation practices in MSMEs emerge from three main categories: product differentiation, value-added quality, and packaging innovation. These categories were identified through axial and selective coding processes. Empirical findings show that MSME actors actively develop product variations through modifications in taste, processing techniques, and presentation (*Field findings, 2026*). Innovation is primarily driven by direct interaction with customers and is implemented through trial-and-error processes rather than formal research and development. In addition, the use of local ingredients and creative adaptation contributes to unique product offerings. Furthermore, innovation extends beyond product features to include quality enhancement and aesthetic improvements. Practices such as using fresh and preservative-free ingredients, emphasizing health benefits, and improving visual presentation reflect efforts to increase product value (*Field findings, 2026*). Packaging also plays a role in attracting consumers and strengthening brand identity.

In comparison with existing literature, innovation is often conceptualized as a structured and strategic process aimed at achieving competitive advantage (Wibowo et al., 2024; Margaretha & Suryana, 2023). However, the findings of this study suggest that innovation in MSMEs is more adaptive and context-driven. This indicates a divergence between theoretical assumptions and actual practices. Moreover, innovation in MSMEs is characterized by flexibility and experiential learning, which contrasts with the capability-based perspective emphasized in previous studies (Hikmah et al., 2024; Sakova et al., 2025). This highlights a dialectical relationship between formal innovation theory and informal business practices.

B. Digitalization Practices in MSMEs

Based on selective coding results, digitalization practices are shaped by categories such as marketing strategies, location advantages, and service-related activities. Digital tools are increasingly integrated into daily business operations, although their use remains relatively simple. The findings reveal that MSMEs utilize digital technologies such as WhatsApp, social media platforms, and digital payment systems to support marketing and transactions (*Field findings, 2026*). These tools are primarily used for communication, promotion, and facilitating customer interactions. However, digitalization is implemented based on immediate needs rather than long-term strategic planning.

The level of digital adoption varies among MSMEs (*Field findings, 2026*). While some businesses actively manage online reputation and use digital payment systems, others still rely on traditional methods such as word-of-mouth marketing. This variation reflects differences in digital literacy and resource availability. In line with previous studies, digitalization has been associated with improved competitiveness and operational efficiency (Octora et al., 2021; Alfian et al., 2026). However, this study finds that digitalization is often underutilized and remains fragmented in practice. This highlights a gap between the theoretical potential of digital transformation and its actual implementation. Additionally, digitalization is not always perceived as a strategic priority (*Field findings, 2026*). This contrasts with literature emphasizing its critical role in business transformation (Sutrisno et al., 2025; Lussak & Darmawan, 2022). Therefore, digitalization in MSMEs can be understood as a gradual and adaptive process rather than a fully developed strategy.

C. Sustainability Practices in MSMEs

Thematic analysis indicates that sustainability practices are primarily associated with operational efficiency, resource utilization, and social contributions. These practices are identified through categories related to waste management and organizational challenges. Empirical findings show that MSMEs engage in sustainability practices such as using local materials, minimizing waste, and repurposing by-products (*Field findings, 2026*). In some cases, businesses also demonstrate social responsibility through community-oriented activities. These practices reflect an awareness of resource efficiency and social impact. However, sustainability is not explicitly implemented as a formal strategy (*Field findings, 2026*). Instead, it emerges as a response to operational constraints and cost considerations. This suggests that sustainability in MSMEs is largely pragmatic and context-dependent.

In contrast, literature often positions sustainability as a strategic tool for enhancing competitiveness (Munawar et al., 2025; Wibowo et al., 2024). The findings of this study indicate that MSMEs have not fully leveraged sustainability as a differentiation strategy. This reveals a gap between theoretical frameworks and practical implementation. Furthermore, challenges such as limited human resources and a lack of workforce regeneration affect the sustainability of MSMEs (*Field findings, 2026*). This highlights the importance of considering organizational and social dimensions in sustainability discussions.

D. Integration of Innovation, Digitalization, and Sustainability

Cross-case analysis demonstrates that innovation, digitalization, and sustainability do not operate independently but are interconnected within MSME practices. This integration emerges inductively from empirical data rather than being formally designed. The findings show that MSME actors simultaneously implement product innovation, utilize digital tools, and adopt efficiency practices in their daily operations (*Field findings, 2026*). These elements interact dynamically as responses to market demands and environmental conditions. Moreover, the integration of these variables reflects an adaptive and context-driven strategy (*Field findings, 2026*). MSME actors do not explicitly formulate strategies; instead, they develop business practices through experience and continuous interaction with the market.

Compared to existing literature, strategic integration is often viewed as a result of structured organizational capabilities (Sutrisno et al., 2025; Hikmah et al., 2024). However, this study finds that integration can emerge organically through routine business activities. These findings suggest that competitive advantage in MSMEs is not solely derived from resource ownership but from the ability to adapt and integrate various practices in a dynamic environment. This aligns with the concept of dynamic capabilities, which emphasizes responsiveness and flexibility (Sakova et al., 2025; Sari & Ahmad, 2026).

E. Conceptual Model

Based on thematic and cross-case analysis, this study proposes a conceptual model illustrating the integration of innovation, digitalization, and sustainability in shaping MSME competitive advantage. The model is derived inductively from empirical findings and reflects adaptive business practices. The model shows that these three elements are interconnected and influenced by contextual factors such as market conditions and resource constraints. Rather than being formally structured, the integration develops organically through everyday business activities.

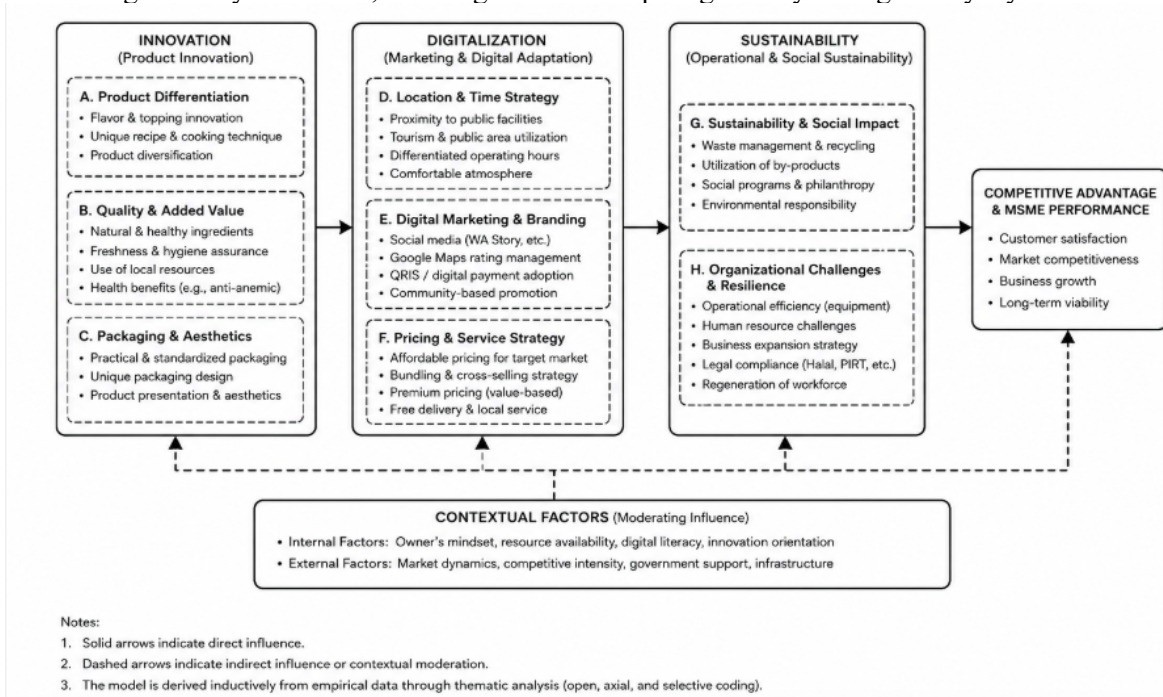


Figure-1: Conceptual Model: Integrated Innovation, Digitalization, and Sustainability Practice in MSME

This model highlights that MSME strategies are adaptive and non-linear, emphasizing the role of experience and context in shaping business decisions. Therefore, competitive advantage is understood as the result of dynamic interaction among innovation, digitalization, and sustainability practices.

CONCLUSION

This study concludes that the competitive advantage of MSMEs in Gunung Pati is not determined by a single factor, but rather by the integration of innovation, digitalization, and sustainability practices. This study reinforces the importance of an integrative approach in understanding MSME strategy, particularly through the dynamic interaction of innovation, digitalization, and sustainability. These elements develop simultaneously within daily business activities and are shaped by the interaction between business actors and their market environment. Innovation emerges through product variation, creativity, and adaptation to consumer preferences, while

digitalization is utilized in a practical manner to support marketing and transactions. Sustainability, on the other hand, is primarily implemented as an effort to improve operational efficiency and resource utilization. The findings indicate that the integration of these three variables does not occur through formal strategic planning. Instead, it evolves organically as MSME actors respond to changing market conditions and operational constraints. This suggests that MSME strategies are inherently adaptive and context-driven. The study highlights that competitive advantage is formed through continuous adjustment and learning processes rather than through structured and deliberate strategy formulation.

From a theoretical perspective, this study contributes to the literature by extending the understanding of competitive advantage beyond traditional frameworks. While previous studies emphasize structured strategies and organizational capabilities, this research demonstrates that strategy in MSMEs can emerge from practice-based and experience-driven processes. This finding supports the perspective of dynamic capabilities, which emphasizes the importance of adaptability and responsiveness in a dynamic environment (Sakova et al., 2025; Sari & Ahmad, 2026). Furthermore, the study challenges the assumption that innovation, digitalization, and sustainability operate independently, showing instead that they are interconnected and mutually reinforcing in practice. From a practical perspective, the findings provide insights for MSME actors and policymakers. Business actors are encouraged to enhance their adaptive capabilities by continuously experimenting with product innovation, improving digital literacy, and adopting sustainable practices. Policymakers, on the other hand, can support MSMEs by providing training programs, facilitating access to digital platforms, and promoting sustainable business practices. These efforts can help create a more supportive ecosystem for MSME development.

Despite its contributions, this study has several limitations. The research is limited to a specific geographical area, which may affect the generalizability of the findings. However, the use of multiple case studies and in-depth analysis provides a rich understanding of MSME practices. Future research is recommended to explore similar phenomena in different regions and sectors, as well as to employ quantitative approaches to test the relationships identified in this study. Overall, this study emphasizes that competitive advantage in MSMEs is the result of an adaptive and integrated process. By understanding how innovation, digitalization, and sustainability interact in practice, this research offers a more realistic and contextual perspective on MSME strategy.

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