

Beyond Digital Adoption: How Data Analytics Drives Marketing Effectiveness and Competitiveness in MSMEs

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Abstract

In today's digital era, the business landscape is changing rapidly and requires businesses to gain digital readiness, especially micro, small and medium enterprises' sectors (MSMEs). This study examines the strategic role of data analytics in enhancing the competitiveness of micro, small, and medium enterprises (MSMEs). Drawing on the resource-based view and dynamic capabilities theory, the study argues that data analytics creates value not through mere adoption but through its effective integration into marketing and decision-making processes. The findings highlight that embedding data analytics within core marketing strategies enables MSMEs to better understand customers, optimize marketing campaigns, and deliver more personalized offerings, thereby improving marketing effectiveness and customer engagement. Moreover, the study emphasizes the critical role of human and managerial capabilities in translating analytical insights into actionable marketing strategies. Strategic and managerial training is identified as a key driver of digital readiness, allowing MSMEs to adapt to market dynamics and sustain competitive advantage. Overall, the study contributes to the digitalization literature by demonstrating that MSME competitiveness depends more on the strategic application of data analytics than on the ownership of digital technologies alone.

Keywords: data analytics, MSME competitiveness, digital readiness, strategic marketing integration, managerial capabilities

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Introduction

In today's digital era, the business landscape is changing rapidly and requires businesses to be adaptive to technology, especially in the micro, small, and medium enterprises (MSMEs) sector. This adaptation, commonly referred to as digital readiness, reflects the ability of firms to adopt, integrate, and utilize digital technologies effectively in their operations and strategies. For MSMEs, digital readiness is crucial to enhancing competitiveness, responding to market dynamics, and sustaining long-term business growth. Furthermore, fashion retail MSMEs in Indonesia have made a substantial contribution to the national economy. This sector plays an important role in generating income and supporting economic growth at both local and national levels. In addition, fashion retail MSMEs significantly contribute to labor absorption by creating employment opportunities for a large segment of the workforce (Kementerian Koperasi dan UKM RI, 2023).

However, MSMEs face significant challenges in maintaining their survival and achieving sustainable growth in an increasingly competitive business environment. One major challenge arises from competition with large companies that have stronger capital, advanced technology, and broader market reach. In addition, the rapid expansion of global e-commerce platforms intensifies price competition and increases customer expectations. These platforms often offer greater convenience, variety, and efficiency, making it difficult for MSMEs to compete on equal terms. As a result, MSMEs must continuously adapt their strategies and enhance their capabilities to remain competitive and grow (Barus et al., 2023).

Big data analysis of customers' data, market trends, and purchasing behavior provides valuable insights that can help businesses enhance their competitiveness. Through systematic analysis, firms can better understand customer needs, preferences, and buying patterns. These insights allow businesses to design more targeted and personalized marketing campaigns. As a result, digital marketing strategies can be optimized to reach the right audience at the right time. Consequently, marketing activities become more effective and efficient compared to traditional, intuition-based approaches (Cadden et al., 2023; Maroufkhani et al., 2020; Mikalef et al., 2018).

The Purpose of This Research

The purpose of this research is to examine how data analytics can be transformed from a mere technological resource into a strategic asset that enhances the competitiveness of micro, small, and medium enterprises (MSMEs). Grounded in the resource-based view and dynamic capabilities theory, the study aims to clarify that competitive advantage does not arise simply from adopting data-related technologies, but from strategically integrating analytical capabilities into marketing and decision-making processes. By doing so, the research seeks to extend existing MSME digitalization literature with a more nuanced, strategy-oriented perspective.

Specifically, this research aims to investigate the role of data analytics integration within digital marketing strategies as a key mechanism through which MSMEs improve marketing effectiveness and customer engagement. The study focuses on how analytical insights can be embedded into everyday marketing activities, such as understanding customer behavior, optimizing campaigns, and personalizing offerings. Through this lens, the research intends to demonstrate that the strategic application of data analytics is a critical pathway through which MSMEs achieve and sustain competitiveness in dynamic market environments.

In addition, the study aims to explore the importance of human and managerial capabilities in enabling effective use of data analytics. It seeks to assess how strategic and managerial training supports digital readiness by equipping MSME owners and managers with the skills needed to interpret data, align digital tools with business objectives, and translate insights into concrete marketing actions. Ultimately, the purpose of this research is to provide both theoretical and practical insights into how MSMEs can build adaptive, data-driven marketing capabilities that lead to long-term competitive advantage rather than short-term technological adoption.

Related Work

Some recent studies have examined how big data analytics influence the digital marketing capabilities of MSMEs in China. These studies generally focus on the direct impact of data-driven insights on marketing performance and strategic decision-making. However, they have not taken digital readiness into account as a moderating factor that may shape the effectiveness of big data analytics adoption. In addition, much of the existing research has been conducted in developed countries with more advanced technological infrastructure and digital ecosystems. Consequently, the findings may not be fully applicable to the Indonesian context, which differs in terms of technological maturity, market characteristics, and MSME digital capabilities (Abrokwah-Larbi, 2024; Sharabati et al., 2024).

Rafiah et al. identify digital readiness as a key factor in achieving successful digital transformation among MSMEs. Their study highlights the importance of technological infrastructure, digital skills, and organizational support in enabling MSMEs to adopt digital solutions effectively. However, the analysis does not specifically examine digital readiness as a moderating variable that influences the relationships between big data analysis and digital marketing strategies. As a result, the conditional effects of varying levels of digital readiness on the effectiveness of data-driven marketing initiatives remain unclear. This gap suggests the need for further research to better understand how digital readiness shapes the impact of big data analysis on MSMEs' digital marketing performance (Rafiah et al., 2022).

Lastly, Anatan et al. develop a comprehensive framework to measure digital readiness among MSMEs. Their framework captures key dimensions such as technological infrastructure, digital skills, organizational culture, and management support. This contribution provides a useful tool for assessing the level of preparedness of MSMEs in adopting digital technologies. Nevertheless, the interaction between digital readiness and big data analysis in shaping business outcomes has not been examined in their study. In particular, how these factors jointly influence the competitiveness of MSMEs remains an open area for further investigation (Anatan & Nur, 2023).

Our Reflections on Beyond Digital Adoption

We argue that data analytics alone is not a strategic asset unless translated into effective marketing and decision-making processes based on resource-based view (RBV) (Barney, 1991) and dynamic capabilities theory (Teece et al., 1997). Furthermore, we hypothesize that MSMEs operate within context-specific dynamics in which the pathway to competitiveness does not occur directly through technology adoption alone, but rather through its strategic application, particularly in how data-driven insights enhance marketing effectiveness and customer engagement. We believe this perspective adds nuance to MSME digitalization theory by suggesting that *“smaller firms achieve competitiveness not simply by owning or*

adopting data-related technologies, but by effectively integrating those tools into their digital marketing strategies”.

Additionally, we suggest that MSMEs should focus on integrating data analytics into their marketing strategies rather than merely adopting digital technologies, for example by using analytical insights to better understand customers, optimize marketing campaigns, and personalize offerings. Integration means embedding data analytics into the core of their marketing strategy so that data-driven insights guide everyday decision-making. By analyzing customer data, MSMEs can better understand customer preferences, behaviors, and purchasing patterns. These insights enable businesses to optimize marketing campaigns by targeting the right audience at the right time with appropriate messages. Furthermore, data analytics allows MSMEs to personalize products, services, and promotions according to individual customer needs. As a result, integrated use of data analytics can improve marketing effectiveness, strengthen customer relationships, and enhance overall competitiveness.

Training in strategic data use is essential for enabling MSMEs to move beyond basic adoption of digital tools. Such training helps develop a strategic mindset in which data is treated as a valuable asset for decision-making rather than merely as operational output. By learning how to interpret and apply data insights, MSME owners and managers can align digital tools with their business goals. This strategic approach supports digital readiness by ensuring that technology use is purposeful and integrated into core business processes. Moreover, training encourages MSMEs to proactively respond to market changes and customer needs using data-driven strategies. As a result, MSMEs become more adaptive, competitive, and resilient in an increasingly digital business environment.

Encouraging managerial training in turning analytical insights into marketing actions is crucial for improving organizational performance. Such training helps managers understand how to translate data findings into clear, actionable marketing strategies. By developing these skills, managers can make more informed decisions regarding customer targeting, product positioning, and promotional activities. Training also reduces the gap between data analysis and practical implementation within daily marketing operations. Furthermore, it empowers managers to evaluate campaign performance and adjust strategies based on real-time insights. As a result, marketing efforts become more effective, efficient, and aligned with overall business objectives.

Conclusion

In conclusion, this study emphasizes that data analytics should not be viewed as a standalone technological asset but as a strategic resource whose value emerges only when effectively integrated into marketing and decision-making processes. Grounded in the resource-based view and dynamic capabilities theory, our arguments highlight that MSME competitiveness is shaped less by the mere adoption of digital tools and more by how these tools are strategically applied. This perspective contributes to the digitalization literature by clarifying that ownership of data-related technologies does not automatically translate into competitive advantage for smaller firms.

Furthermore, the findings underscore the importance of embedding data analytics within core marketing strategies to enhance customer understanding, campaign optimization, and personalization. When analytical insights guide everyday marketing decisions, MSMEs are

better positioned to engage customers in more targeted and meaningful ways. Such integration strengthens marketing effectiveness and fosters deeper customer relationships, which are critical for sustaining competitiveness in dynamic and highly competitive markets.

Finally, the role of human and managerial capabilities emerges as a central enabler of successful data-driven transformation. Strategic and managerial training equips MSME owners and managers with the skills needed to interpret data, convert insights into actionable marketing initiatives, and continuously refine strategies based on performance feedback. By developing these capabilities, MSMEs can build greater adaptability and resilience, ensuring that digital readiness evolves into long-term competitive advantage rather than remaining a superficial technological upgrade.

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Declaration of Generative AI and AI-Assisted Technologies in the Writing Process

The author declares that ChatGPT, an AI-assisted writing software, was used in proofreading and refining the language used in the manuscript. The usage was limited to correcting grammatical and spelling errors and rephrasing statements for accuracy and clarity. The author further declares that, apart from ChatGPT, no other AI or AI-assisted technologies have been used to generate content in writing the manuscript. The ideas, design, procedures, findings, analyses, and discussion are originally written and derived from careful and systematic conduct of the research.

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