

The Utilization of Artificial Intelligence in Personalized Digital Marketing Content for Accelerating the Business Growth of MSMEs

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ABSTRACT

The rapid growth of digital technologies has encouraged Micro, Small, and Medium Enterprises (MSMEs) to adopt innovative marketing strategies to remain competitive in increasingly dynamic markets. Among these innovations, Artificial Intelligence (AI) has emerged as a powerful tool for enhancing personalized digital marketing content, improving customer engagement, and supporting business growth. This study aims to analyze the utilization of AI in personalized digital marketing and examine its contribution to accelerating MSME growth. A Systematic Literature Review (SLR) following the PRISMA 2020 framework was employed. Relevant articles were collected from major academic databases, including Scopus, ScienceDirect, SpringerLink, Emerald Insight, Wiley Online Library, Taylor & Francis Online, and Google Scholar. From an initial pool of 186 records, ten studies meeting the inclusion criteria were selected and analyzed using thematic content analysis. The findings reveal that AI enhances customer segmentation and targeting, enables personalized content generation, improves marketing automation and operational efficiency, and strengthens customer engagement. These capabilities contribute to increased sales performance, customer retention, market expansion, and overall business competitiveness. Despite challenges related to cost, digital literacy, and infrastructure, AI-driven personalization represents a strategic approach for supporting sustainable MSME growth in the digital economy.

INTRODUCTION

The rapid advancement of digital technology has fundamentally transformed the way businesses interact with consumers, particularly through the increasing adoption of data-driven digital marketing platforms. Digital transformation is no longer an option but a strategic necessity for Micro, Small, and Medium Enterprises (MSMEs) seeking to maintain competitiveness in an increasingly dynamic and complex marketplace (OECD, 2021; OECD, 2024). The integration of digital technologies enables MSMEs to expand market reach, improve operational efficiency, and strengthen customer relationships through multiple digital communication channels (Chaffey & Ellis-Chadwick, 2019; OECD, 2024). In this context, Artificial Intelligence (AI) has emerged as a transformative innovation with significant potential to enhance digital marketing strategies through its ability to process and analyze large volumes of data accurately and efficiently (Kaplan & Haenlein, 2019; OECD, 2021).

Artificial Intelligence has evolved from a mere automation technology into a strategic tool capable of supporting data-driven marketing decision-making. AI enables organizations to analyze consumer behavior, predict customer preferences, and generate highly relevant recommendations tailored to individual needs (Davenport et al., 2020; Kumar et al., 2021). In digital marketing practices, AI is widely utilized for optimizing advertising campaigns, managing chatbots, conducting customer segmentation, and generating personalized content automatically (Jarek & Mazurek, 2019; Kedi et al., 2024). These capabilities provide MSMEs with opportunities to improve marketing effectiveness without incurring the substantial operational costs typically associated with large-scale enterprises (Hussain & Rizwan, 2024; OECD, 2024).

One of the most significant developments in contemporary digital marketing is content personalization. Modern consumers tend to respond more positively to information that aligns with their preferences, interests, and behaviors than to generic marketing messages (Wedel & Kannan, 2016; Huang & Rust, 2021). AI technologies facilitate real-time personalization by analyzing customer data derived from social media activities, browsing histories, transaction records, and various forms of digital interactions (Kumar et al., 2021; Challapalli et al., 2025). Effective personalization has been shown to increase customer engagement, foster loyalty, and improve conversion rates, making it a critical factor in business growth within the digital economy (Kedi et al., 2024; Juriah & Susilastuty, 2024).

LITERATURE REVIEW

For MSMEs, the implementation of AI in personalized marketing content offers numerous benefits, ranging from enhanced customer service quality to greater efficiency in managing digital marketing campaigns. Previous studies have demonstrated that AI-powered chatbots, recommendation systems, and marketing automation tools contribute positively to customer experiences while simultaneously strengthening business competitiveness (Arfah, 2025; Segura Montañez et al., 2024). In Indonesia, the adoption of AI among MSMEs has shown encouraging progress; however, significant challenges remain, including limited resources, inadequate digital literacy, and insufficient understanding of

effective AI implementation strategies (Laksmono et al., 2025; OECD, 2024). These conditions indicate that the utilization of AI within the MSME sector remains an important area for further scholarly investigation.

The urgency of this study stems from the growing need for MSMEs to adopt innovative technologies capable of accelerating business growth in an increasingly competitive digital environment. Although AI offers substantial advantages in marketing personalization, its adoption among MSMEs remains considerably lower than that of larger enterprises due to financial constraints, technological barriers, and limited digital competencies (OECD, 2024; Sawang & Sornlertlamvanich, 2026). Furthermore, most existing studies have examined AI implementation in digital marketing from a general perspective, while research specifically focusing on AI-driven personalized content as a catalyst for MSME business growth remains limited (Hussain & Rizwan, 2024; Kedi et al., 2024). Therefore, a comprehensive examination of AI-powered content personalization is essential to better understand its contribution to enhancing MSME marketing performance and long-term sustainability.

Several previous studies have highlighted the positive relationship between AI adoption and marketing performance. Kedi et al. (2024) found that AI significantly enhances customer experiences and sales performance through personalized marketing automation. Arfah (2025) reported that AI-driven marketing strategies in fashion-oriented MSMEs improved customer engagement and promotional effectiveness. Similarly, Segura Montañez et al. (2024) demonstrated that AI positively influences digital marketing quality and business competitiveness. Laksmono et al. (2025) further emphasized the role of AI in strengthening digital marketing strategies among Indonesian MSMEs. Nevertheless, these studies primarily focus on the general implementation of AI and have not specifically explored how AI-based content personalization can serve as a sustainable mechanism for accelerating MSME business growth.

Based on the aforementioned discussion, this study aims to analyze the utilization of Artificial Intelligence in personalized digital marketing content and to identify its contribution to accelerating the growth of Micro, Small, and Medium Enterprises (MSMEs). The findings are expected to contribute to the growing body of knowledge on AI and digital marketing while providing practical insights for MSME owners and policymakers in designing more effective, adaptive, and technology-driven marketing strategies in the era of digital transformation.

METHODOLOGY

This study employed a Systematic Literature Review (SLR) approach to systematically identify, evaluate, and synthesize existing research on the utilization of Artificial Intelligence (AI) in personalized digital marketing content and its contribution to accelerating the growth of Micro, Small, and Medium Enterprises (MSMEs). The review process followed the PRISMA 2020 guidelines proposed by Page et al. (2021).

Research Design

This research adopted a qualitative literature-based design. Relevant studies were collected from major academic databases, including Scopus, ScienceDirect, SpringerLink, Emerald Insight, Wiley Online Library, Taylor & Francis Online, and Google Scholar. The search was conducted using the following keywords and Boolean operators: ("Artificial Intelligence" OR "AI") AND ("Personalized Marketing" OR "Personalized Content") AND ("Digital Marketing") AND ("MSMEs" OR "SMEs"). Only articles published between 2018 and 2026 were considered.

Inclusion and Exclusion Criteria

Articles were included if they: (1) were published between 2018 and 2026; (2) focused on AI applications in digital marketing, personalized content, or MSME business development; (3) were peer-reviewed journal articles or reputable conference proceedings; and (4) were available in full text. Articles were excluded if they were duplicates, non-scientific publications, unrelated to marketing applications of AI, or lacked sufficient methodological information.

Identification, Screening, Eligibility, and Inclusion

The initial database search identified 186 records. During the identification stage, 34 duplicate articles were removed, leaving 152 articles for screening. The screening process involved reviewing titles, abstracts, and keywords to assess relevance to the research objectives. As a result, 91 articles were excluded because they did not specifically address AI-based personalization, digital marketing, or MSME growth.

Subsequently, 61 full-text articles were assessed for eligibility. During this stage, articles were examined in detail to evaluate their methodological quality, relevance to the research topic, and completeness of findings. A total of 51 articles were excluded: 36 articles discussed AI in a general context without focusing on digital marketing personalization, 9 articles lacked sufficient empirical evidence, and 6 articles were not directly related to MSME business growth.

After completing the eligibility assessment, 10 articles met all inclusion criteria and were selected for the final review and synthesis. These studies formed the primary evidence base for analyzing the role of AI driven personalized marketing content in enhancing MSME performance and business growth.

Quality Assessment

The quality of the selected studies was assessed using criteria adapted from Kitchenham and Charters (2007). Each article was evaluated based on five aspects: research objectives, methodological rigor, data quality, clarity of findings, and relevance to the review topic. Only studies demonstrating adequate methodological quality and strong relevance were included in the final analysis. All ten selected articles satisfied the quality assessment requirements.

Data Analysis

The collected data were analyzed using thematic content analysis. Information extracted from each article included research objectives, methodologies, AI technologies employed, personalization strategies, and reported impacts on MSME growth. The findings were coded, categorized into major themes, and synthesized narratively to identify recurring patterns, similarities, differences, research trends, and existing knowledge gaps regarding AI-driven personalized digital marketing for MSMEs.

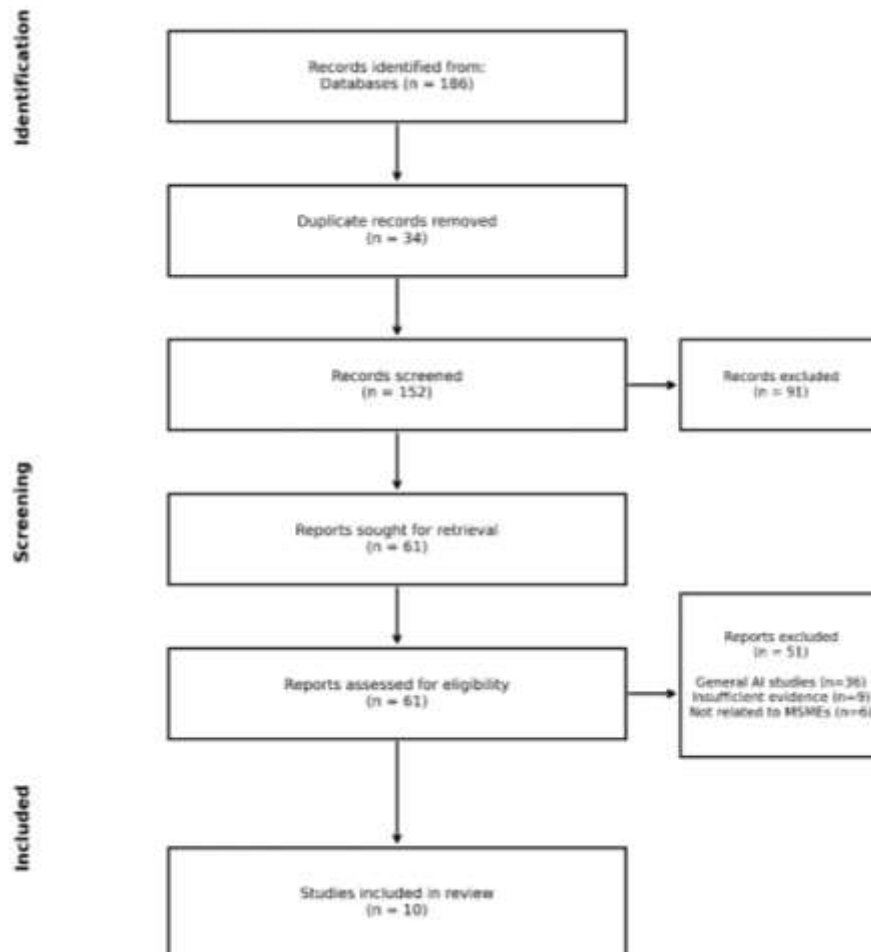


Figure 1. PRISMA 2020 Flow Diagram.

RESEARCH RESULT

This study aimed to examine the utilization of Artificial Intelligence (AI) in personalized digital marketing content and its contribution to accelerating the growth of Micro, Small, and Medium Enterprises (MSMEs). Following the PRISMA-based selection process, ten articles that met the inclusion criteria and passed the quality assessment stage were selected for further analysis. These studies were published between 2021 and 2025 and represent various geographical contexts, methodological approaches, and AI applications in digital marketing. The selected articles provide empirical and conceptual evidence regarding how AI technologies support customer engagement, marketing automation, personalization, and business performance improvement among MSMEs.

Table 1 presents the characteristics of the ten selected studies, including authors, year of publication, research objectives, methodology, and key findings.

Table 1. Characteristics of Selected Studies

No	Author(s)	Year	Research Objective	Method	Key Findings
1	Kedi, Ejimuda, Idemudia, & Ijomah	2024	To examine AI-powered personalized marketing automation in SMEs	Literature Review	AI-based personalization improves customer experience, engagement, and sales performance.
2	Laksmono, Zulfikri, & Priyana	2025	To investigate the use of AI in improving digital marketing strategies for Indonesian MSMEs	Qualitative Study	AI enhances targeting accuracy, customer interaction, and marketing effectiveness.
3	Arfah	2025	To analyze AI-driven marketing strategies in fashion MSMEs	Case Study	Personalized promotions generated by AI increase customer engagement and purchase intention.
4	Segura Montañez, Mamani Perez, Malca Gonzalez, & Bejarano Auqui	2024	To evaluate the effect of AI on digital marketing performance in SMEs	Quantitative Study	AI significantly improves marketing quality, customer satisfaction, and competitiveness.
5	Davenport, Guha, Grewal, & Bressgott	2020	To explore the future role of AI in marketing practices	Conceptual Study	AI supports customer analytics, personalization, and strategic marketing decision-making.
6	Huang & Rust	2021	To develop a strategic framework for AI implementation in marketing	Conceptual Framework	AI transforms customer interactions through intelligent personalization and automation.
7	Kumar, Ramachandran, & Kumar	2021	To investigate emerging	Literature Review	AI-driven analytics facilitate better customer

			technologies in marketing		segmentation and personalized communication.
8	Jarek & Mazurek	2019	To analyze the relationship between AI and marketing innovation	Literature Review	AI increases marketing efficiency through automation and predictive customer analysis.
9	Hussain & Rizwan	2024	To develop a framework for AI adoption in SMEs	Framework Development	AI adoption strengthens marketing capabilities and supports business scalability.
10	Juriah & Susilastuty	2024	To explore the future of AI in digital marketing	Qualitative Review	AI-driven content personalization increases customer retention.

The selected studies consistently indicate that Artificial Intelligence has become an important technological enabler for improving digital marketing performance in MSMEs. Most studies emphasize the role of AI in automating marketing activities, enhancing customer segmentation, and delivering personalized content based on consumer preferences and behavioral data.

Thematic Findings

AI-Driven Customer Segmentation and Targeting

One of the most frequently reported themes across the selected studies is the role of Artificial Intelligence in enhancing customer segmentation and targeting. Traditional segmentation approaches often rely on demographic characteristics and manual analysis, limiting the ability of MSMEs to identify specific customer preferences and behavioral patterns. The reviewed studies indicate that AI enables businesses to process large volumes of customer data from multiple digital channels, including social media platforms, website interactions, online transactions, and customer feedback, thereby generating more accurate and dynamic customer profiles.

Davenport et al. (2020), Kumar et al. (2021), and Huang and Rust (2021) emphasize that AI-powered analytics facilitate predictive customer segmentation by identifying behavioral trends and purchase intentions. Similarly, Laksmono et al. (2025) found that Indonesian MSMEs utilizing AI-based analytics were able to improve customer targeting accuracy and optimize marketing resource allocation. The findings suggest that AI-driven segmentation allows MSMEs to deliver highly relevant marketing messages to specific customer groups,

increasing the effectiveness of digital marketing campaigns and improving customer acquisition rates.

Personalized Content Generation and Customer Engagement

The second dominant theme concerns the ability of AI to generate personalized marketing content that enhances customer engagement. The reviewed studies consistently demonstrate that AI technologies facilitate the creation of individualized marketing messages based on customer preferences, browsing history, purchasing behavior, and interaction patterns. Through machine learning algorithms and predictive analytics, businesses can recommend products, personalize promotional offers, and tailor communication strategies to individual consumers.

Kedi et al. (2024) reported that AI-powered personalized marketing automation significantly improves customer experience and engagement levels. Likewise, Arfah (2025) found that personalized promotional content generated through AI increased customer interaction and purchase intention in fashion-oriented MSMEs. Several studies also highlighted the growing role of AI-powered chatbots in providing real-time customer support and personalized communication. Juriah and Susilastuty (2024) noted that chatbot-based interactions improve customer responsiveness and strengthen customer relationships. Furthermore, recommendation systems integrated into digital platforms were found to enhance customer satisfaction by presenting products that align with individual preferences. Collectively, these findings indicate that AI-driven personalization contributes substantially to customer engagement and relationship-building activities.

Marketing Automation and Operational Efficiency

Marketing automation emerged as another important theme within the reviewed literature. AI technologies enable MSMEs to automate repetitive marketing tasks such as email marketing, customer follow-up, social media scheduling, campaign optimization, and performance monitoring. Automation reduces the need for extensive human intervention while simultaneously improving the speed and accuracy of marketing processes.

Jarek and Mazurek (2019) argue that AI enhances marketing efficiency by automating data processing and decision-making activities. Similarly, Hussain and Rizwan (2024) found that AI adoption supports scalable marketing operations, allowing small businesses to manage larger customer bases without proportionally increasing operational costs. Kedi et al. (2024) further demonstrated that automated marketing systems improve campaign performance through continuous optimization based on customer responses. For MSMEs with limited financial and human resources, marketing automation provides a cost-effective mechanism for maintaining consistent customer communication while maximizing operational productivity. Consequently, AI contributes not only to marketing effectiveness but also to organizational efficiency and resource optimization.

Impact on MSME Business Growth

The findings reveal a strong positive relationship between AI adoption and MSME business growth. Across the selected studies, AI-driven personalized marketing was associated with improved sales performance, enhanced customer loyalty, broader market reach, and increased business competitiveness. By delivering relevant and timely content, AI enables businesses to strengthen customer relationships and improve conversion rates.

Segura Montañez et al. (2024) found that AI implementation significantly improved digital marketing quality and customer satisfaction, which subsequently contributed to business competitiveness. Laksmono et al. (2025) reported that MSMEs utilizing AI-based marketing strategies experienced greater customer retention and market expansion opportunities. Furthermore, Arfah (2025) observed that personalized promotional strategies increased purchase intention and repeat transactions among customers. The reviewed literature suggests that AI creates value through both customer-oriented and operational mechanisms. Enhanced customer engagement increases revenue potential, while automation and analytics improve business efficiency. Together, these outcomes contribute to sustainable MSME growth and long-term competitive advantage in digital markets.

Challenges and Barriers to AI Adoption in MSMEs

Despite the substantial benefits reported in the literature, the adoption of AI among MSMEs remains constrained by several challenges. One of the most commonly identified barriers is the high initial investment required for acquiring AI technologies and digital infrastructure. Many MSMEs operate with limited financial resources, making large-scale technology adoption difficult.

Another significant challenge relates to the shortage of human resources possessing adequate AI-related skills and digital competencies. Laksmono et al. (2025) and Hussain and Rizwan (2024) noted that many MSME owners and employees lack the technical expertise necessary to effectively implement and manage AI systems. Additionally, limited digital literacy often reduces the ability of firms to fully utilize available AI capabilities.

Infrastructure limitations also represent a major obstacle, particularly in developing economies where access to advanced digital technologies and reliable internet connectivity remains uneven. Furthermore, several studies highlighted concerns regarding data privacy, cybersecurity, and ethical issues associated with collecting and processing customer information. As AI-driven personalization relies heavily on customer data, businesses must ensure compliance with privacy regulations and maintain customer trust. These findings indicate that while AI offers significant opportunities for MSME development, successful adoption requires adequate technological readiness, skilled human resources, supportive infrastructure, and robust data governance frameworks.

DISCUSSION

AI as a Strategic Tool for Personalized Digital Marketing

The findings of this review demonstrate that Artificial Intelligence has evolved beyond a supporting technology and has become a strategic tool for personalized digital marketing in MSMEs. Across the reviewed studies, AI was consistently associated with improved customer segmentation, predictive analytics, personalized communication, and automated decision-making. These findings support the argument of Huang and Rust (2021) that AI is transforming marketing from a mass communication approach toward a highly individualized and data-driven paradigm. Through machine learning algorithms, businesses can analyze customer behavior patterns and deliver relevant content at the right time and through the most appropriate channels.

The thematic findings further reveal that AI enables MSMEs to overcome traditional limitations in customer analysis and marketing execution. Unlike conventional marketing approaches that rely on generalized customer profiles, AI facilitates dynamic segmentation and real-time personalization. This capability allows MSMEs to compete more effectively in digital markets despite limited resources. Consequently, AI should not merely be viewed as a technological innovation but as a strategic marketing enabler that strengthens customer-centric business practices.

Contribution of AI to MSME Business Growth

The reviewed studies indicate that AI-driven personalized marketing contributes significantly to MSME business growth through multiple mechanisms. First, personalized content enhances customer engagement by increasing the relevance of marketing messages. Customers are more likely to interact with content that reflects their interests, preferences, and purchasing behaviors. As reported in several studies, improved engagement often leads to higher conversion rates, stronger customer relationships, and increased customer loyalty.

Second, AI contributes to operational efficiency through marketing automation. Automated campaign management, chatbot services, recommendation systems, and customer analytics reduce the workload associated with repetitive marketing activities. This efficiency is particularly important for MSMEs, which often operate with limited financial and human resources. The findings suggest that AI enables small businesses to achieve greater marketing effectiveness without proportionally increasing operational costs.

Third, AI supports business scalability and market expansion. By leveraging customer data and predictive analytics, MSMEs can identify emerging market opportunities, improve customer acquisition strategies, and optimize resource allocation. Collectively, these benefits contribute to increased sales performance, enhanced competitiveness, and sustainable business growth. Therefore, the evidence indicates that AI-driven personalization functions as both a marketing enhancement tool and a growth accelerator for MSMEs.

Comparison with Previous Studies

The findings of this review are consistent with previous literature emphasizing the transformative role of AI in marketing. Davenport et al. (2020) argued that AI enhances marketing decision-making through advanced customer analytics and predictive capabilities. Similarly, Kumar et al. (2021) highlighted the importance of AI-driven technologies in improving customer segmentation and personalized communication. The current review confirms these observations, particularly within the context of MSMEs.

The results also align with Kedi et al. (2024), who found that AI-powered personalized marketing automation improves customer experience and sales performance. Likewise, the findings support the conclusions of Segura Montañez et al. (2024), who reported positive effects of AI on marketing quality and business competitiveness. However, unlike many previous studies that focus on large organizations or general marketing applications, this review specifically demonstrates how AI-driven personalization contributes to MSME growth through customer engagement, operational efficiency, and market expansion.

Furthermore, the review extends the work of Hussain and Rizwan (2024) by highlighting the practical implications of AI adoption for small businesses operating in resource-constrained environments. While previous studies often discuss AI adoption conceptually, the present review synthesizes empirical evidence showing the direct relationship between AI-enabled personalization and business growth outcomes among MSMEs.

Theoretical Implications

This study contributes to the growing literature on Artificial Intelligence, digital marketing, and small business development by providing a synthesized understanding of the mechanisms through which AI influences MSME performance. The findings reinforce the principles of customer-centric marketing theory, which emphasize the importance of understanding and responding to individual customer needs. AI enhances the implementation of these principles by enabling businesses to process customer data at a scale and speed that would be impossible through traditional approaches.

The review also supports the Resource-Based View (RBV), which suggests that organizational capabilities and strategic resources are key determinants of competitive advantage. AI can be considered a strategic technological resource that enables MSMEs to develop superior marketing capabilities, strengthen customer relationships, and improve business performance. Consequently, the study expands existing theoretical perspectives by positioning AI-driven personalization as an important source of competitive advantage in digital business environments.

Practical Implications for MSMEs

The findings offer several practical implications for MSME owners, managers, and policymakers. First, MSMEs should consider AI adoption as a strategic investment rather than merely a technological upgrade. AI-powered tools such as recommendation systems, customer analytics platforms, automated

email marketing solutions, and chatbot technologies can significantly improve marketing effectiveness and customer engagement.

Second, capacity-building initiatives are necessary to enhance digital literacy and AI-related competencies among MSME owners and employees. Since many barriers to AI adoption stem from limited technical expertise, training programs and digital transformation support initiatives can facilitate more effective implementation. Government agencies, business associations, and educational institutions can play an important role in supporting AI readiness among MSMEs.

Third, policymakers should develop supportive ecosystems that encourage AI adoption through infrastructure development, funding opportunities, and regulatory frameworks that promote responsible data management. Such initiatives would help reduce adoption barriers and enable a larger number of MSMEs to benefit from AI-driven marketing innovations.

Future Research Directions

Although the reviewed studies provide valuable insights, several areas require further investigation. Future research should conduct empirical studies examining the long-term impact of AI-driven personalization on MSME performance across different industries and geographical contexts. Comparative studies between AI-adopting and non-adopting MSMEs would also provide stronger evidence regarding the effectiveness of AI implementation.

Further research is needed to explore the relationship between AI adoption and organizational readiness factors such as digital maturity, technological capabilities, and managerial support. Additionally, future studies should examine ethical considerations related to customer data privacy, algorithmic transparency, and responsible AI use in personalized marketing practices.

Finally, emerging AI technologies such as generative AI, conversational AI, and advanced predictive analytics present new opportunities for MSMEs. Investigating the integration of these technologies into personalized digital marketing strategies may provide important insights into the future development of AI-enabled business growth and competitiveness.

CONCLUSIONS AND RECOMMENDATIONS

This study demonstrates that Artificial Intelligence (AI) plays a significant role in enhancing the effectiveness of personalized digital marketing content and accelerating the business growth of Micro, Small, and Medium Enterprises (MSMEs). Based on the synthesis of ten selected studies, AI contributes to MSME development through four primary mechanisms: improving customer segmentation and targeting accuracy, generating personalized content that enhances customer engagement, automating marketing activities to increase operational efficiency, and strengthening overall business performance through increased sales, customer retention, and market expansion. AI-driven personalization enables MSMEs to better understand customer preferences and behaviors, allowing them to deliver relevant marketing messages that foster stronger customer relationships and higher conversion rates.

The findings further indicate that AI functions not only as a technological tool but also as a strategic resource that supports customer-centric marketing and sustainable competitive advantage. By leveraging predictive analytics, recommendation systems, chatbots, and marketing automation platforms, MSMEs can improve marketing effectiveness while optimizing limited organizational resources. However, despite these benefits, AI adoption among MSMEs remains constrained by challenges related to financial limitations, digital literacy gaps, inadequate technological infrastructure, and concerns regarding data privacy and ethical AI implementation.

Overall, this review confirms that AI-driven personalized digital marketing represents an important catalyst for MSME growth in the digital economy. The integration of AI technologies offers substantial opportunities for improving competitiveness, strengthening customer engagement, and supporting long-term business sustainability. Therefore, greater efforts from business owners, policymakers, and supporting institutions are required to facilitate wider AI adoption and maximize its potential benefits for MSME development.

This study has several limitations. First, the review included only ten selected articles, which may not fully represent the diversity of AI implementation across MSMEs. Second, the study relied solely on secondary data from published literature without incorporating primary empirical evidence. Third, variations in research contexts, industries, and methodologies may limit the generalizability of the findings. Finally, the rapid evolution of AI technologies may affect the long-term relevance of some conclusions.

ADVANCED RESEARCH

Future studies should conduct empirical and longitudinal research to examine the long-term impact of AI-driven personalized marketing on MSME performance. Comparative studies between AI-adopting and non-adopting MSMEs are also recommended to strengthen evidence of AI effectiveness. Further research should explore organizational readiness, ethical issues related to data privacy and AI governance, and the potential of emerging technologies such as generative AI and predictive analytics. Additionally, efforts to improve AI literacy and support digital transformation among MSMEs should be encouraged.

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