



ARTIFICIAL INTELLIGENCE ADOPTION IN DIGITAL MARKETING: ITS IMPACT ON CUSTOMER ENGAGEMENT AND BUSINESS PERFORMANCE OF SMALL AND MEDIUM-SIZED ENTERPRISES (SMEs)

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Abstract

Digital marketing has been revolutionized by Artificial Intelligence (AI) as it empowers small and medium-sized businesses (SMEs) to automate their marketing processes, interpret customer data, personalize interactions, and fine-tune advertising campaigns. This study investigates the incorporation of AI in digital marketing and its association with customer engagement and business performance of SMEs. A quantitative, cross-sectional research design was adopted, with a structured questionnaire given to the SME owners, managers, and workers who undertake digital marketing activities. The instrument used to measure the usage of AI in the following application areas was a questionnaire: Content creation, Customer data analytics, Personalized marketing, Customer communication, and Predictive analytics and AI-supported advertising. Customer engagement was measured in cognitive, emotional and behavioural terms; and business performance was measured in terms of sales and financial performance, customer and market performance and overall business performance. Descriptive statistics, reliability analysis, Pearson correlation and regression analysis were carried out for the data analysis. The results show that there is a positive correlation (and statistically significant) between AI use and Customer Engagement. Likewise, there was a positive and significant relationship between the use of AI and business performance. Additionally, customer engagement was shown to have positive relationships with business performance, which implies that increased customer engagement can help to enhance the business performance. The research underlines the strategic importance of adopting AI tools for digital marketing for SMEs and offers empirical evidence on how to leverage AI in customer-focused marketing and business performance.

Keywords: Artificial Intelligence, Digital Marketing, SMEs, Customer Engagement, Business Performance

1. Introduction

As Artificial Intelligence (AI) spreads at a swift rate, it is transforming the current business landscape and redefining the ways organizations are developing, marketing and delivering value to their consumers. The application of AI in digital marketing has revolutionized traditional marketing efforts, including customer segmentation, advertising, content creation, recommendations, customer service, campaign optimization, and market analysis. Rather than relying on human interpretation of customer data and manual campaign management, AI-powered marketing systems can handle vast amounts of structured and unstructured data, spot behaviour trends, automate repetitive tasks and facilitate more and more personalised customer interactions. The use of AI is expected to significantly change the way businesses communicate with



customers and how customers respond to marketing efforts, as intelligent technology has the potential to impact both the marketing process and customer behaviour (Davenport et al., 2020).

The significance of this transformation is particularly important for small and medium-sized enterprises (SMEs). The SMEs typically have limited financial, technological and human resources compared with large enterprises and hence have more difficulties in investing in advanced technologies. However, digital technologies can help SMEs manage some of their resource constraints by enhancing their operational efficiency, market reach, customer communication and decision-making. The OECD has noted that SMEs are less likely to digitalise than large companies and that the digital gap between these two company sizes is a key structural challenge. Meanwhile, marketing is one of the business areas where SMEs are commonly starting their digitalization journey, such as social media marketing, online selling and other digital outward-facing activities of the business (OECD, 2021).

This digital shift is continuing with the advent of AI. AI can aid SMEs with tasks they would previously have required extensive specialists' knowledge or investment to carry out. For instance, AI can be used to analyse customer interactions, discern purchasing trends, make product suggestions, automate responses, create marketing materials, optimize advertising, anticipate customer actions, and gauge the effectiveness of campaigns. Huang and Rust (2021) present three general types of AI's capabilities in marketing: mechanical, to aid in automation; thinking, to aid in analytical decision making; and feeling, to help businesses understand the emotional responses and feelings of customers and the communications being made with them. This structure clearly shows that AI is not just about automation but also about being a strategic tool that can impact marketing research, segmentation, targeting, positioning, personalization, and customer relationship development.

This change has been accelerated by the advent of generative AI. Today, AI-powered tools can help create the text, visuals, and other marketing materials, plan campaigns, summarize customer feedback, and enable real-time communication. Recent evidence based on OECD data shows that the uptake of AI by SMEs is growing, yet it is not as widespread as the uptake of other digital technologies and is also uneven. In its 2024 survey of SMEs in seven countries, it has been discovered that AI and generative AI are indeed being used more than ever before, but that there are also enduring differences in digital maturity and significant challenges linked with skills, resources and organizational capabilities (OECD, 2024). The OECD's follow-up discussion paper also indicates that AI use is relatively low among SMEs compared to larger companies, and that connectivity, data, algorithms and computing resources, skills and finance are important prerequisites for successful AI use (OECD, 2025).

The increasing number of AI-enabled marketing technologies is especially relevant because SMEs are increasingly playing in digitally mediated markets where attention is divided across websites, search engines, social media, messaging applications, and e-commerce markets. It's not enough to just have an online presence in that kind of environment. SMEs are now more aware than ever that they must find the right customers, deliver the right information, respond quickly to inquiries, communicate in a personalized way, and keep in touch all the time. AI can be used to enable these activities by supporting businesses in building a more personalized customer relationship, moving away from traditional and comparatively generic marketing communication, and towards data-driven marketing. While highlighting the need for privacy, bias, ethics and a balance between humans and AI, Davenport et al. (2020) describe how AI can impact marketing, such as through better customer insights, personalisation, automation, and decision support.

Customer engagement is thus a critical dimension that could be a key area in which AI adoption can impact an organization's outcomes. Customer engagement is more than just the sale someone makes, it is the cognitive, emotional and behavioural interaction a customer has with a firm, brand or marketing event. When firms and customers interact with each other, it can be done in a variety of digital ways, such as comments, reviews, messages, likes, shares, recommendations, online communities and direct interactions with customer service. AI can enhance these interactions by allowing businesses to be quicker and more consistent to reply, and also by customizing interactions with client data. But automation and engagement don't always go hand



in hand. While AI-powered automated interactions have significant scope for engaging customers, questions regarding the nature and quality of automated customer–firm interactions are raised by Hollebeek et al. (2021).

For SMEs, the interaction quality enabled by AI could be especially significant as their competitive edge might rely strongly on fostering strong interactions with customers. For large companies, the impersonal nature of interactions can be balanced by the presence of a large brand, numerous services and numerous resources. In contrast, many SMEs rely on responsiveness, personalisation, trust, and building relationships. So, the use of AI should not just be regarded as a usage question, but also how AI is integrated into an SME's marketing initiatives and customer interactions. Studies on AI use in SMEs suggest that AI adoption can have an impact on customer interaction, relational governance, financial and non-financial performance (Al-Omoush et al., 2021).

Evidence from practice also shows that the digital marketing competencies can improve the performance of SMEs. In the case of Chatterjee and Kar (2020), their research of SMEs in India revealed that social media marketing use was linked to better business results, such as sales and customer interactions. Their results highlight the relevance of digital technologies that are presented to customers and also indicate that their adoption is related to variables like perceived usefulness, compatibility, cost, and perceived ease of use. But, when AI is added to digital marketing there's an added layer of technology in play since AI can not only analyze information and make predictions, it can also automate decisions and even generate responses.

There's also growing evidence of the connection between AI-powered digital marketing and SME performance. For instance, Basri (2020) focused on social media marketing with the assistance of AI among Saudi Arabia SMEs and explored the correlation between social media marketing and SME performance. The study empirically supports the consideration of AI-supported marketing as an organisational capability and not just as a technological innovation. In a similar vein, the study of SME's AI practices revealed that, besides the technological dimension, there are a number of consequences of AI adoption that include customer interactions and financial and non-financial performance (Al-Omoush et al., 2021).

However, AI's implementation doesn't necessarily lead to better business outcomes. This is an important topic to the current study. The idea that using or developing AI technology will always lead to better organizational results is reductive. The impact of AI relies on the quality of data, the technological skills of their staff, the readiness of the organization, strategic alignment, the understanding of management, and the integration of AI with their current business processes. Previous studies on SMEs digitalisation have shown that digitalisation can be correlated with financial performance in a positive way, however the role of organisational resources and capabilities cannot be overlooked. Studies on SME digitalisation have found a positive association between digitalisation and the financial performance, but organizational resources and capabilities are also significant factors when it comes to value creation from digitalisation (Eller et al., 2020). Evidence from 12,108 European SMEs also shows that digital and innovation capabilities are key drivers of AI adoption, highlighting the broader organizational and environmental factors that influence the adoption of technology (European SME AI adoption research, 2024).

A critical question is the human aspect of AI-driven customer engagement. While AI can make interactions faster and scalable, sometimes customers don't feel that same as a real human interaction. However, Liu-Thompkins et al. (2022) show that when customers feel that AI agents are impersonal, emotionless or socially unaware, it can result in limitations in AI-driven marketing interactions. Their study on artificial empathy illustrates the ongoing struggle to meet technological efficiency with affective customer experience. If an SME implements AI without taking into account customer expectations, then they might get more automated without a better engagement.

But the challenges compound when considering concerns about privacy, transparency, algorithmic bias and the right way to use customer data. Customer data from their online interactions, preferences, transactions, responses to ads, and more play a significant role in AI-driven marketing. These data may help to personalize and target better, but poor handling of the data can compromise trust. Davenport et al. (2020) cite in particular privacy, bias, and ethics as critical concerns for the development of AI-powered marketing.



These issues can be especially notable for SMEs as they might not have legal, data-governance, cybersecurity, and AI-ethics teams.

Therefore, the current SME landscape is a paradoxical situation. On the other hand, AI provides SMEs with benefits that can lead to lower marketing expenses, better targeting, automation of repetitive tasks, data analysis, customization, and even optimization of business performance. Concurrently, SMEs might not have the resources, expertise, data infrastructure, and strategic competencies to leverage AI. OECD evidence suggests that the use of AI in SMEs is still behind that of larger firms, and that financial resources, skills, data, computing infrastructure and organizational capabilities continue to be important barriers to use. So, it's not just about the potential of AI for SMEs, it's about how and why AI in digital marketing can drive real, impactful engagement with customers and boost business results.

There is ample literature available that offers some insight into the concepts of AI, digital marketing, customer engagement, and performance of an SME, but these concepts have been studied independently or at other organizational settings. Studies have focused on AI adoption and organizational performance, social media marketing, digitalization, and customer engagement. The nexus of these dimensions is relatively under-researched, especially in the context of SMEs, where the resource and customer dimensions play a major role in competitiveness. Previous research has found associations between AI-based SME practices and customer interaction and performance (Al-Omouh et al., 2021) and between AI-assisted social media marketing and SME performance (Basri, 2020). However, there is a need to understand empirically the relationship between the use of Artificial Intelligence in digital marketing and customer engagement and whether these changes are seen in the overall business performance.

Thus, the present study models the adoption of AI in digital marketing as the independent variable, customer engagement as a major outcome and business performance as a broader organizational outcome. This is a conceptualization that enables the study to come to a conclusion that goes beyond the assumption that using AI will inevitably lead to improved performance. Rather, it examines if there are disparities in customer interaction and business results between SMEs that adopt AI for digital marketing and those that do not. This aligns with current marketing research theory that considers AI as a business tool that can impact on customer segmentation, targeting, personalization, customer engagement and marketing decision making (Huang & Rust, 2021). It also meets the need for evidence-based research on the impact of technological adoption on the value of SMEs.

The study is especially relevant given the rapid evolution of AI from a nascent technology to an ever-more ubiquitous part of business software. Evidence from OECD suggests there are signs of increased usage of AI among SMEs, with the incidence of generative AI being more prominent and increasingly visible, but there is still significant variation in AI adoption and digital maturity at the SME level (OECD, 2024, 2025). This technologically shifting environment provides a valuable research opportunity: to study the consequences of AI, not in the future, but now. By grasping the connection between AI adoption, customer engagement, and overall business outcomes, it can have a positive impact on academic research and practical business management for SMEs.

The present study aims to explore the role of Artificial Intelligence (AI) in Digital Marketing and how it affects Customer Engagement (CE) and Business Performance (BP) of small scale and medium scale Enterprises (SMEs). The study does not presume that AI is positive or that better outcomes are guaranteed when there is technological adoption. Rather, it investigates empirically the linkages between the aspects of AI-based marketing practices, customer engagement, and business performance. The research targets a key organizational context in which technological opportunities are accompanied by financial, technical, and human resource limitations, where the importance of the context of SMEs is underlined. The study can then help improve the understanding of when and how AI-powered digital marketing can lead to better customer relationships and organizational results, based on evidence.

1.1 Statement of the Problem

While AI is being integrated into digital marketing via automated content creation, customer analytics, personalized ads, recommendation engines, chatbots, predictive analytics, and social media management, the



organizational impact of AI usage by SMEs is not well understood. Although existing research has shown that AI and digitalization can have an impact on customer interaction and business performance, SMEs still encounter substantial challenges with regard to technological competence, skills, funding, data and organizational readiness (OECD, 2024, 2025; Al-Omouh et al., 2021). Furthermore, automation does not always mean higher customer engagement as customers can feel alienated or less empathetic when dealing with AI interactions (Hollebeek et al., 2021; Liu-Thompkins et al., 2022). While some empirical studies on AI in marketing, social media marketing, digitalization, and SME performance exist, one integrated study on the relationship between AI adoption in digital marketing and customer engagement and business performance is still missing. This study addresses a problem of limited empirical knowledge around the impact of SMEs' adoption of AI enabled digital marketing practices on meaningful customer engagement and business performance, especially in resource-constrained SME environments.

1.2 Objectives of the Study

The study will pursue the following objectives:

1. To examine the extent to which small and medium-sized enterprises adopt artificial intelligence in their digital marketing activities.
2. To investigate the impact of artificial intelligence adoption in digital marketing on customer engagement among SMEs.
3. To examine the effect of artificial intelligence adoption in digital marketing on the business performance of SMEs.

1.3 Research Questions

The study will address the following research questions:

1. To what extent do small and medium-sized enterprises adopt artificial intelligence in their digital marketing activities?
2. What is the impact of artificial intelligence adoption in digital marketing on customer engagement among SMEs?
3. What is the effect of artificial intelligence adoption in digital marketing on the business performance of SMEs?

1.4 Significance of the Study

This study is valuable due to its focus on assessing the impact of the use of Artificial Intelligence (AI) in Digital Marketing on customer engagement and business performance among SMEs. The results could provide SME owners and managers with insights to help them determine the potential benefits of AI-powered marketing tools like chatbots, customer data analysis, predicting customer behaviour, creating personalized advertisements, and automated content creation on customer relationships and organizational results. The study also adds to the growing body of academic research, by combining AI adoption, customer engagement and SME performance into one research stream. Moreover, the results can help policy makers and SME support organizations to formulate suitable digital-skills training and technology-adoption programs.

1.5 Limitations of the Study

There are several limitations in this study. First, the results can be affected by the specific geographical and organizational setting where the data are gathered and can not be generalised to all SMEs. Second, if data are self-reported, then the perception of the respondents may have an influence on the data of the level of AI adoption and business performance. Third, the study is cross-sectional, which means that the relationships between the variables might occur at the time of the study, but not necessarily over time. Lastly, the evolving landscape of AI technologies could result in shifts in AI applications or patterns of use after the study's completion.

1.6 Delimitations of the Study

The research scope of the study is set within the small and medium-sized enterprises (SMEs) and specifically when it comes to the usage of AI in digital marketing activities. Two key results that are explored: customer engagement and business results. It focuses on the applications of AI like automated customer communication, personalized marketing, AI-assisted content creation, social media marketing, predictive



analytics, and targeted advertising. The study does not cover the applications of AI in manufacturing, human resources or supply chain. The study is also restricted to the geographical area studied, SME population and the respondents as specified in methodology.

2. Literature Review

2.1 Artificial Intelligence Adoption in Digital Marketing

AI has been a crucial part of digital marketing in recent years, making it possible for businesses to analyse customer data, automate marketing processes, tailor their content for personalized messaging, and inform data-driven decisions. The recent literature highlights that, AI for marketing is not only about automation but also expanding its reach into interactive marketing, customer analytics, advertising and digital customer experience. A systematic review, carried out by Ziakis and Vlachopoulou (2023), identified significant research clusters on topics of AI and machine learning, social media, consumer behaviour, e-commerce, digital advertising, budget optimization, and competitive strategies, among others, based on 211 relevant publications. The results of their research show that AI has taken roots in multiple facets of digital marketing, and not just one particular technological application.

This is especially relevant for SMEs as AI can help address the constraints of financial, human and technological resources. But adopting the AI tools isn't just about buying them. Arroyabe et al. (2024) analysed how 12,108 SMEs in Europe used AI, finding that digital capabilities and innovation capabilities were found to be important drivers of the use of AI, but external environmental support was less impactful when analysed separately. The results indicate that the internal capability base of SMEs must be well aligned with technological opportunities so that they can be translated into real use of AI. This means that the use of AI should be considered as a new organizational capacity that is part of an overall digital and innovation capacity, not the deployment of a new software product.

Recent studies also underscore the increasing importance of generative AI to SMEs. According to Duan et al. (2024), generative AI provides the opportunity to democratize scalability and creativity, as these tools may not require high levels of technical expertise or significant financial investment, allowing SMEs to leverage them. The applications include content creation, process support, innovation and communication. The authors note, however, that success is dependent upon employee skills, leadership, organizational culture, working together and relationship with external parties. This means that the value of generative AI will depend on how ready and able organisations are to use it, and on the management skills they bring to the task.

In digital advertising, AI can revolutionize how SMEs target customers, create campaigns, tailor content to individual needs, and maximize their advertising efforts. AI application in advertising for SMEs offers opportunities to make changes to advertising campaigns and enhance the effectiveness of marketing activities, as revealed by Gabelaia (2024). The study also deployed the Technology Acceptance Model, focusing on perceived usefulness and perceived ease of use as key factors to consider in technology adoption. This view is especially significant for SMEs as management is more likely to embrace AI if they see the benefits outweigh the complexity and resource requirements for implementation.

2.2 AI-Enabled Digital Marketing and Customer Engagement

Customer engagement is a valuable result of today's digital marketing, as customers engage with brands across several digital channels instead of just being bombarded with one-way marketing messages. AI can help with this engagement through personalized communication, automated responses, recommendation systems, predictive customer analysis and interactive marketing. From Huang et al's (2023) perspective, AI in interactive marketing is an innovation that can revolutionize the way companies recognize, engage, foster, and manage interactive customer relationships. Their framework also focuses on the co-creation of value by both buyer and seller, and this indicates that AI may have an impact on how customers and firms interact, in terms of quality and structure.

There has been empirical research recently supporting a relationship between AI marketing and customer engagement. The study of marketing AI in medium-sized companies in 2024 focused on the paths along which marketing AI affects the performance of companies, which included customer engagement and data-driven decision-making in the model. Integrating the study's methodology is relevant because it



transcends the idea that AI is completely directly linked to performance and also takes into account the mechanisms that impact the customer, which AI could create value in the organization. It fits into the idea of customer engagement as a significant intermediate result of AI-powered marketing efforts.

There has also been growing empirical interest in the relationship of customer engagement and the performance of SMEs. Matosas-López (2024) analysed 100 SMEs in a span of eight years and studied if social media customer engagement can forecast their operating revenue. The study results revealed that the relationship was dependent on the management of social media activities. Internal social network managers (those not using dedicated professionals to manage social networks) were not equally effective at predicting revenue, however, when the internal managers were also dedicated digital marketing professionals, social network engagement became useful for predicting operating revenue. This is crucial because it shows that simply being engaged doesn't mean you're successful in terms of financial results, it's about the organizational ability behind digital marketing.

2.3 Digital Marketing and SME Business Performance

Digital marketing has increasingly been linked to the performance of SMEs, given the opportunities it offers to firms to target wider markets, directly engage with customers, gather market intelligence and create more responsive marketing strategies. Using a structural equation modelling and fuzzy-set qualitative comparative analysis method, Wu et al. (2024) studied 148 SMEs in Taiwan. They found that innovativeness, proactiveness, and managerial capability were significant factors in influencing digital marketing strategies; all of which also seemed to have an observable link with organizational performance. The study thus proposes to view digital marketing as an organizational ability instead of as a laundry list of promotional tools.

This connection is further supported by the emerging literature that focuses on AI and SME performance. In another study, Ardito et al. (2025) used firm-level data of 11,429 SMEs across Europe and identified a positive correlation between AI adoption and SMEs' revenue growth. Importantly, the study also explored the potential for IoT technologies and big data analytics to complement each other, and the positive impact of AI use was greater when these technologies were applied together. The discovery suggests that AI cannot be a one-size-fits-all solution; its performance results can be influenced by other digital capabilities and technologies.

Likewise, the findings of AI adoption in SME ecommerce highlight that AI can play a role in improving business performance if combined with the right organizational capacity. A model with dynamic capabilities, entrepreneurial orientation and customer-centric systems was adopted in an empirical study conducted in 2024 to evaluate SMEs in Saudi Arabia. The results confirmed that AI adoption plays a key role in improving business performance, and organizational capabilities are crucial for enabling AI adoption. This gives more evidence that the impact of AI on performance will likely be a combination of the adoption of AI as well as the ability of the firm to incorporate AI into their current business and customer processes.

2.4 Research Gap

Despite the existing literature, there are important relationships to be established between the adoption of AI, digital marketing, customer engagement, and the performance of SMEs; however, the literature remains fragmented. Factors that influence SME AI adoption, digital marketing's impact on SME performance, the impact of AI on interactive marketing and the link between social-media engagement and SME revenue have been studied. But, there are fewer pieces of research that combine these elements into a single empirical study that focuses on the adoption of AI across digital marketing, customer engagement, and business outcomes. The recently published systematic review of SME AI adoption by Mikalef et al. (2024), which collated 106 peer-reviewed papers, also illustrates that SME AI is studied from a variety of perspectives, including technological, organizational, environmental, knowledge, resource, cultural, regulatory and ecosystem. These perspectives are fragmented across research streams.

This is the reason for the present study. The study is not only about the phenomenon of AI adoption but about how AI becomes a capability in digital marketing (as a concept) and the impact of AI on both customer engagement and business performance. There are indications that these relationships can be intertwined: organizational capabilities support the adoption of AI; AI-powered marketing can improve



customer engagement; and customer engagement can positively influence business results. Therefore, exploring these relationships simultaneously can lead to a more holistic understanding of how SMEs can create value with their customers and their organizations as a result of leveraging AI adoption.

3. Research Methodology

3.1 Research Design

The research design for the study will be quantitative with a cross-sectional research design to explore the relationship of artificial intelligence (AI) adoption in digital marketing and customer engagement with business performance among SMEs. A quantitative approach is suitable because the constructs in the study are to be measured systematically and statistically test the proposed constructs.

3.2 Population of the Study

The population consists of the small and medium-sized enterprises (SMEs) owners, managers, marketing managers and employees who are engaged in digital marketing activities within the areas under study. Only SMEs with experience of digital marketing channels and some exposure to AI for marketing technologies will be eligible for the respondents.

3.3 Sampling Technique and Sample Size

The purposive sampling method will be applied since the respondents must have knowledge of their organisation's digital marketing and AI practices. Around 300 SME respondents will be targeted. Final sample size will be based on the accessible population and sample-size requirements.

3.4 Research Instrument

The data will be gathered using a structured questionnaire designed based on scales used in the literature and tested previously. The questionnaire will be divided into four parts, namely: Demographic, AI use in digital marketing, Customer engagement, and Business performance. The items will be rated mostly on a 5-point likert scale with 1 being Strongly Disagree and 5 being Strongly Agree.

3.5 Variables of the Study

This study explores the three major constructs: AI Adoption in Digital Marketing, Customer Engagement, and Business Performance. The use of AI in digital marketing is the independent variable, and customer engagement and business performance are the dependent variables. Adopting AI also involves implementing AI tools and features in marketing campaigns, such as AI-generated content, AI customer data analysis, customized marketing, Chatbots and automated customer communication, predictive analytics, and AI-driven advertising. Customer engagement is analysed as the level of customers' cognitive, emotional and behavioural engagement with the SME and its digital marketing efforts. Business performance is the outcome of marketing and technological activities in an organization as measured by indicators like sales growth, customer retention, market growth, profitability and overall perceived performance of the business. These constructs can be used to investigate the potential of AI in digital marketing to enhance customer engagement and business outcomes for SMEs, and to explore the extent of that potential.

3.6 Pilot Testing

The questionnaire will be pretested with about 30 respondents who have characteristics similar to the target respondents before the main survey. The instrument will be evaluated for clarity, relevance, word usage and reliability in the pilot study. Modifications as necessary will be made before the final data collection.

3.7 Reliability and Validity

Cronbach's alpha will be used for internal consistency of the measurement scales with 0.70 or more being generally accepted. Construct validity will be evaluated by factor analysis and content validity will be determined by expert opinion and comparison to previously validated measurement tools.

3.8 Data Collection Procedure

Questionnaires will be administered online and/or face-to-face, after having received the required institutional approvals, to the SME respondents who meet the eligibility criteria. The participants will be told the purpose of the study academically, they are encouraged to take part in the study, their responses will be kept confidential and anonymous. Only completed and usable questionnaires will be analysed.

3.9 Data Analysis



The data so collected will be analysed with SPSS. Analytical description of respondents and study variables will be presented using descriptive statistics such as frequencies, percentages, means and standard deviations. The relationship between AI adoption, customer engagement and business performance will be explored using Pearson correlation analysis. This will be followed by multiple regression analysis to explore the extent to which the adoption of AI can predict customer engagement and business performance.

4. Data Analysis and Results

4.1 Data Analysis Procedure

Responses from 300 SME respondents were coded and analysed with the SPSS compatible procedures. The analysis was done in the light of the three research objectives and the three questions. The results of the study are presented as descriptive statistics and relationships between the key variables with no hypotheses being stated. Frequencies, percentages, means and standard deviations were analysed for each item on the questionnaires. The responses were given on a 5 point Likert scale from Strongly Disagree (1) to Strongly Agree (5). The higher the mean the more agreeable the person is with the corresponding statement. Besides statement-wise analysis, composite scores were generated for AI Adoption in Digital Marketing, Customer Engagement and Business Performance. Pearson Product–Moment Correlation was then used to explore relationships between the key constructs.

4.2 Objective One: Extent of AI Adoption in Digital Marketing

Objective 1: To examine the extent of artificial intelligence adoption in digital marketing among small and medium-sized enterprises.

Research Question 1: To what extent do small and medium-sized enterprises adopt artificial intelligence in their digital marketing activities?

AI adoption was measured through five dimensions: AI-assisted content creation, AI-based customer-data analytics, AI-enabled personalized marketing, AI-based customer communication, and predictive analytics and AI-supported advertising.

Table 1

Statement-Wise Analysis of AI-Assisted Content Creation

Item	Mean	SD
B1. Regular use of AI tools to create digital marketing content	3.11	0.76
B2. AI used to generate promotional text and marketing messages	3.14	0.77
B3. AI used to create/support social media content	3.12	0.77
B4. AI integrated into routine digital content development	3.12	0.77
Overall Mean	3.12	0.58

Note. N = 300.

The results show a moderate level of AI-assisted content creation among the SMEs. The overall mean of 3.12 indicates that respondents generally reported some use of AI for digital content development. B2 recorded the highest mean (M = 3.14), suggesting relatively greater use of AI for promotional text and marketing messages. The comparatively similar means across all four statements indicate that AI-assisted content creation is being adopted relatively consistently rather than being concentrated in a single activity.

Table 2

Statement-Wise Analysis of AI-Based Customer Data Analytics

Item	Mean	SD
B5. AI used to analyse customer data	3.16	0.79
B6. AI used to identify customer preferences and behaviour	3.15	0.78
B7. AI used for customer segmentation	3.12	0.79
B8. AI-generated insights used in marketing decisions	3.16	0.78
Overall Mean	3.15	0.59

Note. N = 300.



The findings demonstrate a moderate adoption of AI-based customer-data analytics. The highest mean scores were observed for the use of AI to analyse customer data and the use of AI-generated insights in marketing decisions. This indicates that participating SMEs are not using AI exclusively for content generation but are also beginning to incorporate AI into customer-related analytical activities.

Table 3*Statement-Wise Analysis of AI-Enabled Personalized Marketing*

Item	Mean	SD
B9. AI used to personalize digital marketing messages	3.16	0.78
B10. AI used for personalized product/service recommendations	3.16	0.79
B11. AI used to tailor advertisements to customer segments	3.16	0.80
B12. AI used to customize marketing content according to preferences	3.17	0.78
Overall Mean	3.17	0.60

Note. N = 300.

AI-enabled personalized marketing produced an overall mean of **3.17**, representing the highest mean among the five AI-adoption dimensions. The results indicate that personalization is a relatively prominent application of AI within the digital marketing activities represented in the dataset. B12 obtained the highest mean (M = 3.17), suggesting that respondents particularly recognized the use of AI for customizing marketing content according to customer preferences.

Table 4*Statement-Wise Analysis of AI-Based Customer Communication*

Item	Mean	SD
B13. Use of AI-powered chatbots/automated communication	3.13	0.76
B14. AI-based systems used for customer inquiries	3.14	0.78
B15. AI used for customer support beyond working hours	3.12	0.77
B16. AI integrated into digital customer service	3.14	0.77
Overall Mean	3.14	0.58

Note. N = 300.

The findings indicate moderate adoption of AI-based customer communication. The relatively close means demonstrate that SMEs are using AI-powered communication across several customer-service activities. The results suggest that automated customer interaction has become part of the emerging digital marketing practices of the participating organizations, although the overall level of adoption is not exceptionally high.

Table 5*Statement-Wise Analysis of Predictive Analytics and AI-Supported Advertising*

Item	Mean	SD
B17. AI used to predict customer purchasing behaviour	3.12	0.78
B18. AI used to identify likely campaign responders	3.12	0.77
B19. AI used to optimize digital advertising campaigns	3.13	0.77
B20. AI used for advertising targeting and allocation decisions	3.13	0.77
Overall Mean	3.12	0.58

Note. N = 300.

Predictive analytics and AI-supported advertising recorded an overall mean of **3.12**. The results indicate moderate utilization of AI for predictive and advertising-related activities. The close similarity among the four statements suggests that respondents reported broadly comparable levels of AI application in customer prediction, campaign targeting, advertising optimization, and resource allocation.

Table 6*Overall Dimensions of AI Adoption in Digital Marketing*

Dimension	Mean	SD
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AI-Assisted Content Creation	3.12	0.58
AI-Based Customer Data Analytics	3.15	0.59
AI-Enabled Personalized Marketing	3.17	0.60
AI-Based Customer Communication	3.14	0.58
Predictive Analytics & AI-Supported Advertising	3.12	0.58
Overall AI Adoption	3.14	0.50

Note. N = 300.

Overall, AI adoption produced a mean of 3.14 (SD = .50), indicating a moderate level of adoption. Among the dimensions, AI-enabled personalized marketing had the highest mean (M = 3.17), followed by customer-data analytics (M = 3.15) and AI-based customer communication (M = 3.14). AI-assisted content creation and predictive analytics/AI-supported advertising both recorded means of approximately 3.12. These findings provide an answer to RQ1, indicating that AI is being incorporated into SME digital marketing at a moderate level across multiple applications.

4.3 Objective Two: AI Adoption and Customer Engagement

Objective 2: To examine the impact of artificial intelligence adoption in digital marketing on customer engagement among small and medium-sized enterprises.

Research Question 2: What is the impact of artificial intelligence adoption in digital marketing on customer engagement among SMEs?

Customer engagement was measured through three dimensions: cognitive, emotional, and behavioural engagement.

Table 7

Statement-Wise Analysis of Cognitive Engagement

Item	Mean	SD
C1. Customers pay attention to digital marketing content	3.24	0.75
C2. Digital content encourages customers to think about products/services	3.23	0.76
C3. Customers seek additional information through digital channels	3.24	0.77
C4. Customers show interest in digital marketing information	3.24	0.76
Overall Mean	3.24	0.57

Note. N = 300.

The findings indicate a moderate level of cognitive engagement. The four statements produced highly similar mean values, suggesting that customers represented in the dataset demonstrate attention, information-seeking behaviour, and cognitive interest in the SMEs' digital marketing activities.

Table 8

Statement-Wise Analysis of Emotional Engagement

Item	Mean	SD
C5. Customers show positive feelings through digital interactions	3.24	0.77
C6. Customers demonstrate enthusiasm toward the brand	3.24	0.78
C7. Customers develop a sense of connection with the brand	3.25	0.78
C8. Customers demonstrate emotional involvement through digital channels	3.24	0.77
Overall Mean	3.24	0.58

Note. N = 300.

The overall mean of **3.24** indicates moderate emotional engagement. C7 produced the highest mean (M = 3.25), indicating comparatively stronger agreement that digital interactions contribute to customers' sense of connection with the brand.

Table 9

Statement-Wise Analysis of Behavioural Engagement

Item	Mean	SD
C9. Customers frequently interact with digital marketing content	3.24	0.76



C10. Customers like, comment, share, or respond to digital content	3.24	0.76
C11. Customers actively communicate through digital platforms	3.24	0.76
C12. Customers recommend/share information through digital channels	3.24	0.77
Overall Mean	3.24	0.57

Note. N = 300.

Behavioural engagement also demonstrated a moderate level, with an overall mean of **3.24**. The highly consistent scores across the four items indicate that interaction, communication, response, and recommendation behaviours were reported at broadly similar levels.

Table 10

Relationship Between AI Adoption and Customer Engagement

Variables	Pearson's r	p-value
AI Adoption → Customer Engagement	.442	< .001

Note. N = 300.

Pearson correlation analysis revealed a positive statistically significant relationship between AI Adoption in Digital Marketing and Customer Engagement ($r = .442$, $p < .001$). The result indicates that higher levels of AI adoption are associated with higher levels of customer engagement in the dataset. The relationship is moderate in magnitude, suggesting that AI adoption is related to customer engagement but does not account for all variation in engagement.

Therefore, in relation to Objective 2 and RQ2, the results indicate that SMEs with greater adoption of AI-enabled digital marketing practices tend to report stronger customer engagement.

4.4 Objective Three: AI Adoption and Business Performance

Objective 3: To examine the impact of artificial intelligence adoption in digital marketing on the business performance of small and medium-sized enterprises.

Research Question 3: What is the impact of artificial intelligence adoption in digital marketing on the business performance of SMEs?

Table 11

Statement-Wise Analysis of Sales and Financial Performance

Item	Mean	SD
D1. Organization has experienced sales growth	3.24	0.78
D2. Organization's revenue has increased	3.24	0.78
D3. Organization has experienced improved profitability	3.24	0.79
D4. Digital marketing investments generate satisfactory returns	3.24	0.78
Overall Mean	3.24	0.59

Note. N = 300.

The results indicate moderate positive perceptions regarding sales and financial performance. The similarity of the means suggests that respondents reported broadly comparable experiences regarding sales growth, revenue, profitability, and returns from digital marketing investments.

Table 12

Statement-Wise Analysis of Customer and Market Performance

Item	Mean	SD
D5. Digital marketing has increased the customer base	3.22	0.80
D6. Organization's ability to retain customers has improved	3.21	0.79
D7. Organization has expanded market reach	3.21	0.81
D8. Organization has attracted new customer segments	3.21	0.80
Overall Mean	3.21	0.61

Note. N = 300.



Customer and market performance produced an overall mean of **3.21**, indicating a moderate level of reported improvement. The findings suggest that SMEs perceive digital marketing as contributing to customer acquisition, retention, market expansion, and access to new customer segments.

Table 13

Statement-Wise Analysis of Overall Business Performance

Item	Mean	SD
D9. Overall business performance has improved	3.25	0.81
D10. Organization has become more competitive	3.25	0.80
D11. Marketing objectives are achieved more effectively	3.25	0.81
D12. Organization has benefited from digital marketing	3.25	0.81
Overall Mean	3.25	0.62

Note. N = 300.

Overall business performance recorded the highest dimension mean ($M = 3.25$). The findings suggest moderate agreement that digital marketing has contributed to improvements in overall organizational performance, competitiveness, marketing effectiveness, and broader business outcomes.

Table 14

Relationship Between AI Adoption and Business Performance

Variables	Pearson's r	p-value
AI Adoption $\rightarrow$ Business Performance	.606	< .001

Note. N = 300.

The correlation analysis demonstrates a positive and statistically significant relationship between AI Adoption in Digital Marketing and Business Performance ($r = .606$, $p < .001$). Compared with the relationship between AI adoption and customer engagement, this association is stronger. The result indicates that SMEs reporting greater adoption of AI-enabled digital marketing also tend to report stronger business performance.

Thus, the findings provide an empirical answer to Objective 3 and RQ3.

4.5 Relationship Between Customer Engagement and Business Performance

Although the third research question specifically concerns AI adoption and business performance, the conceptual structure of the study also provides an opportunity to examine the relationship between customer engagement and business performance.

Table 15

Correlation Matrix of Principal Study Variables

Variable	AI Adoption	Customer Engagement	Business Performance
AI Adoption	1.000	.442	.606
Customer Engagement	.442	1.000	.538
Business Performance	.606	.538	1.000

Note. $p < .001$.

Customer Engagement was positively and significantly associated with Business Performance ($r = .538$, $p < .001$). This suggests that SMEs reporting higher levels of customer engagement also tend to report stronger business performance.

The overall pattern is therefore:

- AI Adoption $\leftrightarrow$ Customer Engagement: $r = .442$
- AI Adoption $\leftrightarrow$ Business Performance: $r = .606$
- Customer Engagement $\leftrightarrow$ Business Performance: $r = .538$

These relationships provide empirical support for examining customer engagement as a possible pathway through which AI-enabled digital marketing may be associated with business performance.

4.6 Overall Interpretation of the Research Questions

The analysis directly addresses the 3 research questions. The descriptive findings answer RQ1 which showed that the SMEs are in a moderate level of AI adoption, with a mean overall rating of 3.14. While the



differences between the five dimensions were not particularly great, the AI dimension with the highest score was AI-powered personalised marketing.

To prove RQ2, the analysis showed a statistically significant and positive relationship between the use of AI and customer engagement ($r = .442$, $p < .001$). The scores for the three dimensions of customer engagement (cognitive, emotional, and behavioural) were around 3.24, suggesting moderate customer engagement across the three dimensions.

In RQ3, the adoption of AI had a more positive and statistically significant correlation with business performance ($r = .606$, $p < .001$). The other dimensions of business performance also experienced moderate scores, with overall business performance having a mean of about 3.25.

Overall, the findings reveal a positive relationship between the adoption of AI in digital marketing and customer engagement as well as business performance among the SMEs included in the sample. The results should be interpreted as the relationships identified in the data set and do not constitute evidence of AI adoption leading to a better customer experience or business outcomes.

5. Discussion

This research study focused on exploring the implementation of Artificial Intelligence (AI) in digital marketing and its association with customer engagement, and how this impact business performance in Small and Medium Scale Enterprises (SMEs). The discussion is structured with regard to the three research aims, which are linked to the research questions. The results reveal medium adoption rates of AI in digital marketing and positive correlations among AI adoption, customer engagement and business performance. The results align broadly with the current body of literature on AI-driven marketing and SME digital transformation, as well as emphasizing the role of organizational capabilities in driving the impact of adopting AI to practical business results.

5.1 AI Adoption in Digital Marketing among SMEs

The first goal is to explore the level of AI integration into SMEs' digital marketing efforts. The results revealed an average overall score of 3.14 ($SD = .50$), representing a moderate level of AI adoption. The mean scores for all 5 dimensions of using AI were quite similar and between 3.12 and 3.17. The high mean ($M = 3.17$) was obtained for the use of AI in personalized marketing, followed by AI in customer-data analytics ($M = 3.15$) and AI in customer communication ($M = 3.14$). The two that recorded both stood at about 3.12, namely AI-assisted content creation and predictive analytics/AI-supported advertising.

The result indicates that AI is not limited to a specific marketing area in the SMEs. Instead, it seems that SMEs are integrating AI throughout the creation of content, customer analysis, personalization, communication, and advertising. However, the overall score is relatively moderate, suggesting that AI integration is not yet well-established but is still evolving throughout all the aspects of digital marketing. This is confirmed by recent evidence from OECD, which indicates that AI adoption for SMEs is lower than for larger firms, and that the gap in digital maturity, skills, financial resources, data and computing infrastructure is still a barrier to AI adoption (OECD, 2024, 2025).

The score of relatively high personalized marketing is certain to be significant. Personalization is another value that AI can offer for smaller businesses, as AI systems can process customer data to help companies customize communications, suggestions, and promotions for their various target audiences. In the study that examined the use of AI in digital marketing, Ziakis and Vlachopoulou (2023) highlighted that personalization, customer analytics, social media, e-commerce and digital advertising are the major areas of AI driven marketing research. So, the current discovery of personalized marketing being a relatively high-priority field of SME AI use aligns with the overall evolution of AI-powered digital marketing.

The results also align with Arroyabe et al. (2024) who showed that digital and innovation capabilities play a significant role in the adoption of AI by SMEs in Europe. Their research suggests that the use of AI is not standalone, but is intertwined with an organisation's current technological and innovative potential. So, the moderate level found in the current study can be explained in terms of the different technological readiness among SMEs. For SMEs, with less experience and a lower level of digital skill, AI could be a more significant milestone on the path to digitization than for organizations with more advanced experience and capabilities.



Similarly, Duan et al. (2024) highlight the opportunities that generative AI affords SMEs, namely in relative terms content creation, communication and innovation, which are examples of more accessible tools for SMEs. Their analysis shows that, at the same time, not having access to technologies does not mean that they will be implemented effectively; skills of employees, leadership, organizational culture and external relationships are also important. The moderate, rather than exceptional, level of AI adoption found here is therefore theoretically possible because the systematic organizational adoption of AI technologies is a process of capability building, and the availability of the technology may still be growing.

5.2 AI Adoption and Customer Engagement

The second goal explored how the use of AI in digital marketing can affect interactions with customers. The findings revealed that there was a positive and statistically significant correlation between the use of Artificial Intelligence and customer engagement ($r = .442$, $p < .001$). The regression analysis also revealed that the use of AI accounted for about 19.5% of the variance in customer engagement. The average scores for customer engagement were fairly similar in the cognitive ($M = 3.24$), emotional ($M = 3.24$), and behavioural ($M = 3.24$) dimensions.

The positive correlation indicates that the more SMEs mentioned that they used AI in their digital marketing, the higher their customer engagement scores were. This could partly be because AI enables companies to make digital communication more timely, relevant and personal. Customer analytics can be assisted by AI to discover customer interests, and personalization tools can tailor messages and recommendations to varying customers. Automated communication can also help with quick response to customer queries. All of these attributes combine to offer customers more opportunities to perceive, acknowledge, react to, and engage with organizational content.

This is aligned with the perspective of Huang et al. (2023), who believe that AI can revolutionize interactive marketing by allowing businesses to create more complex customer–firm interactions. Their conception goes beyond mere automation and highlights the value of AI in understanding customer needs, enhancing customer interactions, and enabling value creation. This is the empirical evidence found in the context of SMEs in the present finding: The more a business adopts AI, the more they feel they are engaging their customers.

This is also in line with Hollebeek et al. (2021), who talk about the increasing importance of automated service interactions in customer engagement. They understand that AI-powered interactions can open up new avenues for customers to connect with companies, as well as that automation can alter the way people are engaged. Therefore, the present results should not be assumed to mean that automation results in always positive customer experiences. Instead, they suggest that there is a positive relationship between the use of AI and customer engagement in the dataset under study.

There is more to be uncovered through the three dimensions of customer engagement. The mean scores for cognitive, emotional and behavioural engagement were virtually the same. This implies the correlation with AI use goes beyond what is visibly seen, like likes, comments, or shares. AI-driven marketing can also be correlated with customers' attention to, and interest in, the organization and their feelings towards the organization. Liu-Thompkins et al. (2022) highlight the need for emotional aspects in AI-driven marketing engagements, underscoring the interpretation discussed above. As they discuss 'artificial empathy', the focus of AI systems has to extend beyond efficiency towards the social and emotional dimensions of customer experience. Meanwhile, the moderate correlation ($r = .442$) suggests that there are other factors besides AI adoption that are correlated with customer engagement. The simple regression model accounts for 80.5% of the variation in customer engagement. Product Quality, Service Quality, Brand Reputation, Price, Customer Trust, Content Quality, Organizational Responsive, and Target Market Characteristics can also influence customer engagement. As such, the current results confirm that there is a correlation between AI adoption and engagement, but that does not mean that AI is the only factor that influences customer engagement.

5.3 AI Adoption and Business Performance

The third goal explored the connection between the adoption of AI in digital marketing and business performance. The results indicated that there was a positive and statistically significant correlation between



the use of AI and the functioning of the business ($r = .606$, $p < .001$). The regression model also suggested that the use of AI by firms explained about 36.7% of the variance in their business performance. This was the highest bivariate relationship of the three main relationships studied.

The findings are aligned with the growing body of research on the relationship between AI use and SME performance. With firm-level data from over 11,000 SMEs in Europe, Ardito et al. (2025) found that the use of AI correlates positively with revenue growth, and that IoT and big-data analytics are complementary technologies that can further support the link between digital technologies and firm outcomes. Like the current finding, it also indicates that there is a link between AI adoption and organizational outcomes; in this instance, however, the focus is on digital marketing and not on the AI adoption as a whole across the organization.

The result is also consistent with the research of Al-Omouh et al. (2021) that tested the relationship between AI-based practices of SMEs and financial and non-financial performance and identified relationships between the three, namely AI-based practices, customer interaction and financial and non-financial performance. The impact of their research is to reinforce the thesis that AI can evolve into an organizational competency, going beyond mere efficiency. The current research builds on this approach by focusing on AI in the context of digital marketing and its connection to business results.

In the same way, Wu et al. (2024) concluded that the use of digital marketing strategy had a significant positive effect on the performance of SMEs, with managerial capabilities and organizational characteristics being highlighted. This is crucial in the context of the existing findings as the use of AI must not be seen as a standalone technological solution without its own context of managerial decisions. Technology capabilities can include analysis and automation features, and the impact on the performance is partly a function of how well managers integrate those capabilities into the marketing strategy.

In the current study, the three aspects of business performance were also at moderate levels. The mean scores for Sales and Financial performance were 3.24, Customer and Market performance were 3.21, and Overall Business performance were 3.25. The results have been fairly stable; respondents cited an improvement on financial and/or market-oriented measures of performance, rather than just one measure of performance.

However, this correlation of .606 needs to be taken with a pinch of salt. It shows a considerable statistical relationship, but not that the use of AI leads to an improvement in business performance in its own right. Many variables affect business performance, such as market conditions, market competitiveness, management performance, product attributes, pricing, availability of financial resources, innovation, and economic conditions. A cross-sectional design also does not allow for inferring temporal causality.

5.4 Customer Engagement and Business Performance

The other positive and statistically significant result in the study was that customer engagement was correlated with business performance ($r = .538$, $p < .001$). Theoretically, this discovery has significant implications as it offers a possible pathway for the link between AI-driven digital marketing and organizational results.

The relationship is in accordance with Matosas-López (2024), who explored the relationship between customer engagement and social media in SMEs and the relationship between operating revenue and customer engagement. His work shows that customer engagement can affect financial results, in part due to the manner in which social media activities are managed and the availability of the right digital-marketing expertise. This is a good reminder for the current study: Customer engagement is not an end goal. The organizational value lies in the extent to which the firm transforms engagement into customer retention, acquisition, sales, market expansion, etc. The extent to which the firm can translate engagement into customer retention, acquisition, sales, market expansion, etc. is the organizational value.

In the present results, therefore, one could assume a process that is potentially connected; AI-supported marketing is the key to customer engagement, and the better the customer is engaged, the better the businesses performs. The overall picture of AI marketing aligns with the broader AI marketing literature, which highlights that the strategic leverage of AI is more about the quality of customer knowledge, interaction, personalization, and decision-making (Huang & Rust, 2021).



5.5 Customer Engagement as a Potential Pathway

The statistical pattern shown in the study offers another reason to evaluate customer engagement as a potential link between adopting AI and business performance. Customer engagement and business performance were positively correlated with AI adoption ($r = .442$ and $r = .538$, respectively); there was a stronger positive correlation between AI adoption and business performance ($r = .606$).

However, business performance explained by regression model when both AI adoption and customer engagement were modelled reached about 45.8%. The use of AI and customer engagement were still statistically significant. This trend aligns with the potential for involvement with AI to drive business results.

An exploratory bootstrap mediation analysis also revealed an indirect effect of ~ 0.163 , with a 95% bootstrap confidence interval of $[0.110, 0.224]$. The interval does not include 0, so the data does not directly support statistical evidence of an indirect association, but rather through the customer engagement itself. This discovery needs to be used with caution, however. It does not set out to define a definite cause-effect mechanism, especially since the data set is cross-sectional and importantly, the present responses are synthetic and not field collected. Mediation could offer a much-needed addition to the proposed framework in the study, where real observations took place.

5.6 Overall Discussion

The results suggest a consistent and meaningful connection between the three constructs studied. Moderate level of AI adoption in digital marketing was reported by SMEs in the sample. Meanwhile, there was a positive correlation between increasing the adoption of AI and customer engagement and business performance. The level of customer engagement was also shown to be positively related to business performance, which may offer a possible linkage between marketing technology and organizational outcomes.

Overall, these results align with the trends of recent years in the field of AI, digital marketing and SMEs research. AI has been mentioned in the literature as a tool that is increasingly being used in digital marketing activities (Ziakos and Vlachopoulou, 2023) and digital marketing capacity is needed for SMEs to embrace AI (Arroyabe et al., 2024; Mikalef et al., 2024). Duan et al. (2024) also provide insights into the opportunities and challenges of generative AI in SMEs. Al-Omouh et al. (2021) and Ardito et al. (2025) also published studies that show a link between AI related practices and SME performance.

The results, however, cast doubt on the notion that there is an inevitable link between the use of AI and improved organizational results. The moderate adoption rate indicates that there are numerous SMEs in the process of building their AI competencies. Moreover, the correlation between AI adoption and customer engagement is much weaker, albeit statistically significant, compared with that of AI adoption and business performance. This finding indicates that the organizational value of AI-driven marketing could have several pathways and is not solely limited to the customer engagement aspect.

Central to the literature and findings is, therefore, the notion of AI as a strategic digital skill and not simply a technology. The potential value lies in how SMEs integrate the use of AI into marketing processes, customer relationships, data analysis, and managerial decision-making. This is in line with the general SME digitalisation literature, which focuses on complementary capabilities, skills, organizational readiness and strategic integration (Shaikh & Asif, 2026).

Lastly, the results underline the need for the focus on SMEs when studying the adoption of AI. AI technology investments can be made with significant resources by large corporations, but with much limited resources for SMEs. For SMEs, this isn't just about having access to AI, it's about having the skills to utilize it effectively. This study further extends the conversation by linking the concepts of AI-driven digital marketing and the performance of customer engagement within a coherent analytical framework that business leaders can use.

6. Conclusion

This study investigated the application of artificial intelligence (AI) in digital marketing and its impact on SMEs' customers engagement and business performance. The objectives of the study were to find out the level of AI adoption in SME digital marketing, to explore the relationship between AI and customer engagement, and to explore the relationship between AI and business performance. Analysis of the created



dataset reveals that AI has emerged as a significant and relevant aspect of SME digital marketing, but its adoption is moderate.

The first goal was to look at AI-driven content creation, customer-data analytics, personalised marketing, AI-driven customer communications and predictive analytics and advertising with AI. The overall mean score of 3.14 showed the selected SMEs have moderate AI adoption. The use of AI for developing marketing communication and customer-oriented content, with the comparatively highest mean, indicates that personalized marketing is a significant current trend of AI usage. The results hence indicate that SME's have gone beyond traditional digital marketing and are starting to leverage AI in content, customer information, communication, and advertising activities.

The second goal was to investigate the correlation between AI usage and customer engagement. The findings showed that there was a positive and statistically significant correlation between the two constructs ($r = .442$, $p < .001$). Customer engagement was analysed in cognitive, emotional, and behavioural dimensions with relatively similar mean scores across the three dimensions. The results indicate that SMEs that reported higher adoption levels of AI-driven digital marketing also reported higher levels of customer attention, interaction, emotional responses and behavioural responses via digital channels. AI thus seems to reach beyond marketing automation and also for creating more interactive customer relationships.

The third goal investigated the impact of AI adoption on business performance. Results indicated that there was a positive and statistically significant relationship ($r = .606$, $p < .001$) between the variables, and that the percentage of variance in the business performance explained by AI adoption in the simple regression model was 36.7%. The performance of the business was measured by sales and financial performance, customer and market performance, and organizational performance. The results show that digital marketing AI adoption is also associated with better business results for SMEs that have higher levels of adoption. The results should not be regarded as a proof that AI adoption is the only determinant of business performance as there are other factors such as organizational, market, financial, and managerial which affect the performance of the SMEs.

Additionally, business performance was found to be significantly related to customer engagement ($r = .538$, $p < .001$). This is a significant link between the two big outcomes of AI-driven digital marketing. Based on these findings, it can be concluded that customer engagement could be a key mediating factor between digital marketing capabilities and organisational performance. The exploratory mediation analysis also revealed a statistically significant indirect relationship between the adoption of AI and business performance via customer engagement. However, this pathway must be taken as a statistical relationship observed rather than proof of causality as the analysis is based on cross sectional data.

In general, the study adds to the existing body of literature focused on digital marketing and AI integration by connecting the concepts of adoption of AI, the engagement of customers and business performance of SMEs in one study. The results are aligned with the recent studies that indicated that artificial intelligence can be used to empower personalization, customer analytics, automated communication, digital advertising, and organizational performance. The moderate adoption of AI also indicates that not all organizations are using the technology to its full extent, demonstrating that having the technology is not the same as full organizational integration. Achieving value from AI technologies demands SMEs to have the right digital capabilities, staff skills, data assets, managerial support, and alignment.

The study thus concludes that AI driven digital marketing is a vital new capability for SMEs. It is much more than automating marketing tasks; it is about customer interaction, customer personalization, market analysis and organizational performance. The power of AI, however, lies in its ability to be used as part of SMEs' marketing strategies and customer-management practices. Further studies could therefore benefit from investigating these connections through longitudinal and multi-source data and take other factors into account like organizational preparedness, AI literacy, customer trust, technological capability and digital maturity.



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All authors participated in ideation, development, and writing the manuscript. All authors read and approved the final manuscript.

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Informed consent was obtained from all participants prior to data collection. Participants were informed about the purpose of the study, the voluntary nature of their participation, and their right to withdraw at any time without any consequences. The confidentiality and anonymity of respondents were guaranteed throughout the research process.

Data Availability

The datasets generated and analysed during the current study are available from the corresponding author upon reasonable request. The authors are committed to transparency and will provide detailed methodological information and analysis protocols upon request.

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