International Journal of Financial, Accounting, and Management (IJFAM)
ISSN: 2656-3355, Vol 7, No 3, 2025, 419-433 https://doi.org/10.35912/ijfam.v7i3.3383

Digital marketing transformation through artificial intelligence: A study of Nigerian small businesses

Ferdinand C Okigbo[1], Sophia Mbamalu[2], Chinedu Kingsley Iruogu[3]
Nnamdi Azikiwe University, Awka, Nigeria[1-3]
chinwikeokigbo@yahoo.com[1], Sophiaobi6@gmail.com[2], ck.iruogu@pg.unizik.edu.ng[3]

Article History
Received on 27 August 2025
1st Revision on 3 September 2025
2nd Revision on 18 November 2025
Accepted on 25 November 2025

Abstract
Purpose: This study examines the impact of Artificial Intelligence (AI) on Digital Marketing Transformation among Nigerian Small and Medium Enterprises (SMEs). Specifically, it evaluates how AI-driven customer relationship management (CRM) systems enhance digital marketing and investigates how AI-based decision-making relates to marketing transformation.
Methods: The study employed a descriptive survey research design in Lagos State, Nigeria's commercial and technological hub. From a population of 11,663 SMEs, a sample size of 371 was selected using the Krejcie and Morgan (1970) formula. Data were collected through structured questionnaires and analyzed using descriptive and inferential statistics, with hypotheses tested at a 5% significance level.
Results: Findings show strong agreement that AI-enabled CRM tools enhance customer engagement, personalized service delivery, and competitive advantage. The study also found a statistically significant relationship between AI-based decision-making and digital marketing transformation, indicating that AI improves strategic precision, operational efficiency, and responsiveness to market conditions.
Conclusion: AI technologies—especially CRM automation and data-driven decision-making—are vital enablers of digital marketing transformation. Their adoption strengthens customer interaction, supports predictive insights, and promotes sustainable marketing innovation among SMEs.
Limitations: The study focused solely on SMEs in Lagos State, which may limit the generalizability of its findings across Nigeria.
Contribution: This research provides timely empirical insight into how AI-driven CRM systems and AI-supported decision-making reshape digital marketing practices and customer relationship dynamics among Nigerian SMEs, offering implications for future technological adoption, managerial strategy, and policy development.

Keywords: *AI-Driven Customer Relationship Management, Artificial Intelligence, Digital Marketing, Online Advertisement, Technology Adoption*

How to Cite: Okigbo, F. C., Mbamalu, S., & Iruogu, C. K. (2025). Digital marketing transformation through artificial intelligence: A study of Nigerian small businesses. *International Journal of Financial, Accounting, and Management*, 7(3), 419-433.

1. Introduction

In today's competitive business environment, the integration of Artificial Intelligence (AI) into digital marketing has become essential for enhancing operational efficiency and driving sustainable growth for

small and medium-sized enterprises (SMEs). The rapid and constant evolution of digital marketing has been greatly influenced by the integration of AI, marking transformative and impactful shifts in how businesses engage with consumers and enhance their marketing strategies (Chaffey & Ellis-Chadwick, 2022). Arachie, Nzewi, Gerald and Ezinne (2020) aver that the world is increasingly becoming more technologically inclined than ever before, and AI is taking the centre stage. AI technologies, including machine learning, predictive analytics, natural language processing, and customer behavior modelling, have enabled marketers to deliver highly personalized content, automate customer interactions, and enhance decision-making processes in real time (Chaffey & Ellis-Chadwick, 2022). As organizations strive for competitive advantage in a saturated digital marketplace, the adoption of AI-driven tools such as chatbots, recommendation engines, and sentiment analysis systems has become increasingly critical (T. H. Davenport, 2018; Jarek & Mazurek, 2019).

Recently, SMEs have been leveraging AI technologies to transform their digital marketing practices and improve their performance. Recent studies have highlighted that AI not only improves customer experience and operational efficiency but also redefines value creation across digital marketing channels (Dwivedi et al., 2021; Rust, 2020). The commercial viability and acceptance of AI has dramatically increased in the recent years as a result of developments in computing power, open-source tools, and universal internet connectivity (Marston, Li, Bandyopadhyay, Zhang, & Ghalsasi, 2011; Soni, Sharma, Singh, & Kapoor, 2020). This offers both opportunities and obstacles for SMEs, depending on the adoption or neglect of new technologies.

Digital marketing transformation refers to the integration of advanced digital tools and data-driven strategies to create personalized, responsive, and predictive marketing environments (Chaffey & Ellis-Chadwick, 2022). One of the key drivers of this transformation is the adoption of AI-powered Customer Relationship Management (CRM) systems, which use machine learning algorithms, sentiment analysis, and predictive modelling to capture customer preferences and behaviors in real time, enabling SMEs to create targeted campaigns, anticipate customer needs, and improve customer retention (T. H. Davenport, 2018; Jarek & Mazurek, 2019). Again, AI-based decision-making tools are reshaping digital marketing. By applying algorithms that analyze market trends, consumer behavior, and campaign performance, SMEs can make faster and more accurate decisions that align with shifting customer demands and market dynamics (Dwivedi et al., 2021). Thus, technological advancements are imperative for sustainable business growth and development (Nwabuike, Onodugo, Arachie, & Nkwunonwo, 2020).

The Nigerian SME sector, a major contributor to the nation's economy (Ebuka, Chike, Chigozie, & Muhammed, 2025; Ebuka, Emmanuel, & Idigo, 2023), faces significant challenges in maintaining a competitive edge and ensuring long-term profitability (Ewuga, Egieya, Omotosho, & Adegbite, 2023). Despite their small size, they play a crucial role in job creation, income generation, innovation, and the Gross Domestic Product (GDP) of nations (Ebuka et al., 2025). By creating jobs and supporting innovation and creativity, SMEs greatly promote national and community economic development (Ebuka et al., 2023). However, these SMEs sometimes struggle with insufficient access to finance, infrastructural deficiencies, and low technological/AI adoption, which hinder their development, competitiveness, and sustainability (Umetiti, Nwafor, Arachie, & Ifeme, 2025).

Although some studies have been conducted on the impact of AI on SMEs (Dauda & Gulani, 2025; Ebuka et al., 2025; Ebuka et al., 2023; Chukwudi Christian Ifekanandu, Ezirim, & Asemota, 2023; Iyelolu, Agu, Idemudia, & Ijomah, 2024; Nwagbala, Ezeanokwasa, Nwachukwu, Uzodike, & Nwosu, 2025; Omonzejele & Okogun, 2025), there are still some gaps in the literature on how AI integration impacts digital marketing transformation in SMEs, especially in developing economies such as Nigeria. The adoption and utilization of AI technologies in digital marketing by Nigerian SMEs seems to remain underexplored. There is a scarcity of empirical research that combines both AI-based decision-making and CRM tools in relation to marketing transformation, hence making a case for this study. Therefore, this study aims to examine the impact of Artificial Intelligence on the digital marketing transformation of Nigerian SMEs. Specifically, this study seeks to:

1. Assess the role of AI-driven customer relationship management (CRM) systems in transforming digital marketing in Nigerian SMEs.
2. Investigate how AI-based decision-making relates to digital marketing transformation among Nigerian SMEs.

2. Literature Review

2.1 Digital Marketing Transformation

Desai and Vidyapeeth (2019) define digital marketing as the marketing of products or services using digital technologies, mainly on the Internet, but also including mobile phones, display advertising, and any other digital medium. Okwudiri, Arachie, Elechi, and Egede (2025) simply put it as allowing technology and the Internet to take the driving seat of marketing and advertising. From these definitions, it is evident that digital marketing is related to the infusion of technology into the marketing activities of firms. Digital marketing has evolved from a mere online advertising tool to a strategic driver of customer engagement, brand visibility, and revenue growth (Chaffey & Ellis-Chadwick, 2019).

This transformation goes beyond simply adopting digital channels; it encompasses the reengineering of marketing processes, customer engagement strategies, and organizational culture to align with evolving consumer expectations and technological advancements (Chaffey & Ellis-Chadwick, 2022). That is, it helps organizations that adopt it to engage more with their clients and customers.Digital marketing provides a competitive edge to firms that adopt it. Several studies have highlighted how digital technologies have revolutionized marketing strategies, enabling businesses to reach broader audiences and optimize their marketing investments (Nuseir et al., 2023; Pascalau & Urziceanu, 2020). T. Davenport, Guha, Grewal, and Bressgott (2020) posit that the integration of digital tools enables businesses to reduce information asymmetry, enhance personalization, and improve real-time interaction with consumers.

Unlike traditional marketing, digital marketing leverages analytics, AI, and automation to create targeted campaigns, refine customer segmentation, and measure return on investment (ROI) in real-time. Key aspects of digital marketing include Search Engine Optimization (SEO), Content Marketing, Social Media Marketing, Email and Mobile Marketing and Paid Advertising (PPC-pay per click). Artificial intelligence plays a central role in enabling these processes by automating decision-making, enhancing personalization, and providing predictive insights. AI provides SMEs with tools to streamline operations, reduce costs, and enhance customer satisfaction (Okafor & Chia, 2024).

2.2 Artificial Intelligence (AI)

As defined by Holzinger, Langs, Denk, Zatloukal, and Müller (2019), AI is perhaps the oldest field of computer science and is very broad, dealing with all aspects of mimicking cognitive functions for real-world problem-solving and building systems that learn and think like people. That is, the areas covered by AI according to Holzinger are broad. Olan et al. (2022) opine that AI is the process of learning and expressing knowledge, and its core is enabling machines to reason and perform related activities, such as decision-making, problem-solving, and learning. In the same line of thought, Arakpogun, Elsahn, Olan, and Elsahn (2021) argue that AI is a collection of information and communication technologies that imitate human intelligence. Ebuka et al. (2023) described it as the ability of machines to perform tasks that intelligent humans do. Thus, when machines, applications, software, hardware, and other computer facilities are structured to reason as humans in different degrees and are employed in making super decision-making, AI is in action and is operational.

Dellerman et. Al. (2021) believe that it is a machine model technology that can effortlessly improve the capabilities of human intelligence by performing technical functions, from simple to complex and advanced. Yadav and Dwivedi (2023) state that AI is "the capacity of a computer or computerised robotic system to process data and produce results that are similar to the thought process of humans in learning, decision making, and problem-solving." This shows that data are the raw material for AI. AI depends on data for its activity. Its ability to analyze data at high speed makes AI supersonic in efficiency. Thus, AI analyzes data with high speed, quantity, and diversity and processes complex

cognition, relationships, and structures by changing or replacing conventional human tasks (Vashishth et al., 2024).

For the purpose of deploying AI, McCarthy (2007) averred that AI is the science and engineering of creating computer programs and hardware to learn and solve problems in ways that traditionally require human intelligence. Similarly, Yadav and Dwivedi (2023) state that the purpose of AI systems is to "solve challenging problems in ways that resemble human logic and reasoning. The benefits of AI abound from different perspectives. Kabir, Rahman, Al Mobin, and Rana (2025) holds that it is widely used in business applications, including automation, data analytics, and natural language processing. Different authors have suggested that it can be used to track user habits, provide recommendations, improve customer purchasing decisions and search results, communicate media, raise trade sales, improve organizational performance, and lower costs (Basri, 2020; Beyari & Garamoun, 2022; Chan, Teoh, Yeow, & Pan, 2019; Kassa & Worku, 2025; Vashishth et al., 2024). This is important for improving user experience, optimizing decision-making, and enhancing content marketing (Vashishth et al., 2024).

2.3 AI-Driven Customer Relationship Management (CRM) Systems

A firm that desires to succeed in the contemporary competitive business environment must develop a good CRM system. The effectiveness of this system makes a business, and its ineffectiveness mars it. Thus, CRM is crucial to both small, medium, and large-scale business enterprises. CRM capabilities are the ability of enterprises to maintain long-term customer relationships and gain customer-level profit. It is the ability of firms to build continuous customer relationships by allocating organizational resources to meet different consumer desires, including key customers, value customers, and inactive customers (Guerola-Navarro, Gil-Gomez, Oltra-Badenes, & Sendra-García, 2021).

Customer Relationship Management (CRM) is not shielded from the influence of AI. The integration of AI into CRM has revolutionized traditional methods by making CRM more proactive, data-driven and cost-effective. The use of AI in CRM is referred to as AI-Driven CRM Systems. AI-driven CRM practices refer to the application of AI technologies to manage customer interactions, enhance customer experiences, and improve business-customer relationships (Azage & Ikpeazu, 2024). Using digital technology to help enterprises develop customer relationships and improve CRM performance is vital for electronic-commerce (e-commerce) enterprises (Sun & Wang, 2021).

Underscoring the place of technology in CRM, Li and Xu (2022) opine that AI usage can help e-commerce enterprises quickly learn, judge, and make decisions based on large-scale data, gain insight into customer needs, and improve CRM capabilities. In CRM, AI leverages tools such as machine learning, natural language processing, and predictive analytics to automate, personalize, and optimize customer-related processes (Benitez, Arenas, Castillo, & Esteves, 2022). In addition, AI-powered CRMs allow marketers to anticipate customer needs, predict purchasing behavior, and deliver timely content (Chaffey & Ellis-Chadwick, 2022; Rust, 2020). These technological tools enable businesses to better understand customer behavior, predict trends, and provide tailored services, significantly improving customer engagement and loyalty (Wamba, 2022). Interaction automation utilising AI-powered chatbots and virtual assistants to handle customer inquiries, thereby, enabling faster and more efficient responses (Chatterjee, Chaudhuri, Vrontis, Thrassou, & Ghosh, 2021). Predictive analytics empowers businesses to forecast customer needs and preferences, improving marketing strategies and sales performance (Benitez, Ruiz, Castillo, & Llorens, 2020).

This shift in AI technologies is beneficial for SMEs, as AI-CRM systems offer scalability and efficiency that were previously available only to larger corporations (Ghasemaghaei & Calic, 2020). Bandari (2019) avers that AI technology can also help SMEs personalize their marketing efforts, creating more meaningful and relevant interactions with customers, thereby influencing their CRM capabilities. As digital competition intensifies, the adoption of AI-driven CRM tools offers Nigerian SMEs the opportunity to elevate their marketing strategies, align with global digital standards, and overcome traditional barriers to growth and visibility (Jarek & Mazurek, 2019).

2.4 AI- Based Decision-Making Systems

Decision-making plays a vital role in achieving organizational goals and objectives. It is fundamental to the success of any business because it can make or break a business firm. The deployment of AI in decision-making is described as an AI-Based Decision-Making System. It refers to the use of AI technologies, such as machine learning algorithms, deep learning, data mining, and predictive analytics, to analyze vast datasets and support strategic, real-time business decisions. AI-based decision systems guide marketing planning, budgeting, customer segmentation and content delivery. These systems can process data faster and more accurately than human analysts, reducing uncertainty and enhancing precision in decision-making processes (Dwivedi et al., 2021; Rust, 2020). In addition, AI algorithms can simulate different market scenarios, recommend optimal strategies, and continuously learn from outcomes, making them dynamic tools for digital marketers. They enhance strategic thinking by providing intelligent, evidence-based support to marketing leaders and champions.

2.5 Hypothesis statement

AI-based decision-making has a statistically significant relationship with digital marketing transformation among Nigerian SMEs.

2.6 Theoretical Framework

This study is anchored on the Technology Acceptance Model proposed by Fred Davis in 1985 in his doctoral thesis at the MIT Sloan School of Management. The Technology Acceptance Model (TAM) is considered the most influential and commonly employed theory for describing an individual's acceptance of information systems (Lee, Kozar, & Larsen, 2003). It is the only model that has captured the attention of the Information Systems community. Davis (1989) proposed that system use is a response that can be explained or predicted by user motivation, which, in turn, is directly influenced by an external stimulus consisting of the actual system's features and capabilities.

Davis (1989) suggested that a user's motivation can be explained by three factors: perceived Ease of Use, Perceived Usefulness, and Attitude Toward Using the system. He hypothesized that a user's attitude toward a system is a major determinant of whether the user will actually use or reject the system. The attitude of the user was influenced by two major beliefs: perceived usefulness and perceived ease of use, with the latter having a direct influence on the former. These beliefs were hypothesized to be directly influenced by system design characteristics. Some researchers claim that TAM may have attracted easier and quicker research, such that less attention has been given to the real problem of technology acceptance (Lee et al., 2003).

This model was criticized because human behavior calls for extensions and changes and is more complicated than what TAM proposes. This gave rise to TAM 2 (Venkatesh and Davis (2000) and TAM 3 (Venkatesh, Morris, Davis, & Davis, 2003). TAM 2 and TAM 3 include additional variables, such as subjective norms, experience, and facilitating situations. Furthermore, TAM's emphasis on individual users limits its understanding of organizational-level adoption, in which elements such as leadership, policy, and financial restrictions have a major impact.

In the context of AI-driven CRM, TAM helps understand how Nigerian SMEs perceive and adopt these technologies. When SMEs find AI solutions useful and easy to implement, they are more likely to integrate them effectively (Venkatesh & Davis, 2000). The model ensures that SMEs properly use ICT and AI platforms to improve customer engagement, satisfaction, and business success, thereby helping to identify obstacles to technology acceptance (Ojambo & Yılmaz, 2020). Anchoring this study to the TAM provides a comprehensive framework for examining how AI-driven CRM practices can enhance SME performance.

2.7 Empirical Reviews

Ebuka et al. (2025) investigated the effect of AI adoption on business performance, with a specific focus on the use of Generative AI and ChatBots for customer relationship management (CRM) among SMEs in Southeastern Nigeria. Using a quantitative survey research design, the researchers drew a sample of 371 digitally literate SME owners from a population of 11,231 SMEs across the five southeastern states,

with 310 valid responses analyzed. Data were collected through structured electronic questionnaires and analyzed using descriptive and inferential statistics, including regression analysis, at a 5% level of significance. The findings revealed that although awareness of AI tools was relatively high among respondents, actual adoption and usage remained significantly low. However, regression analysis showed that both Generative AI and ChatBot usage had statistically significant and positive effects on CRM capability, jointly accounting for 98.1% of the variance. ChatBot usage demonstrated a slightly stronger influence on CRM than Generative AI.

The study by Azage and Ikpeazu (2024) titled "AI Driven Customer Relationship Management Practices and Sustainable Growth of Nigerian SMEs" examined how AI-powered CRM practices influence the long-term growth of SMEs in Nigeria. Drawing on a random sample of 450 SMEs across the country, data were collected using structured questionnaires and analyzed using descriptive statistics and Pearson's correlation techniques. The findings revealed strong positive correlations between AI-CRM dimensions, such as customer data management, interaction automation, segmentation, predictive analytics, and sales optimization, and the sustainable growth of SMEs. Conversely, customer engagement strategies showed relatively weak associations with growth outcomes.

In a mixed-method study titled "Improving Customer Engagement and CRM for SMEs with AI Driven Solutions," Iyelolu et al. (2024) explored the impact of AI tools on customer engagement and CRM enhancement in Nigerian SMEs. This research utilized a combination of literature reviews, in-depth case studies, and expert surveys involving industry professionals and SME operators. Thematic analysis of qualitative data revealed that technologies such as AI-powered chatbots, recommendation engines, and sentiment analysis significantly improved personalized communication, task automation, and customer insight generation. However, the study also identified major barriers, such as high implementation costs and integration complexities.

Omonzejele and Okogun (2025) conducted a literature review on the role of Artificial Intelligence (AI) in enhancing the productivity of Nigerian small-scale businesses (SSBs). This study was anchored in the Technology Acceptance Model (TAM). It synthesizes empirical and conceptual insights from global and local studies published between 2000 and 2024. This review focused on AI tools, such as chatbots, recommendation engines, and analytics solutions, and evaluated their influence on operational efficiency, customer engagement, and data-driven decision-making. The results revealed that AI adoption among Nigerian SSBs remains low, at approximately 14%, due to high costs, poor infrastructure, low digital literacy, and a shortage of skilled personnel. Nevertheless, businesses that embraced AI recorded productivity gains of 20-35% and up to 30% improvement in service delivery and cost reduction.

Nwagbala et al. (2025) examined the opportunities and challenges associated with AI adoption for the sustainability of MEs in Africa. This study was based on the Resource-Based View (RBV) theory and highlighted how AI tools such as machine learning, predictive analytics, and automation enhance operational efficiency, reduce costs, and promote innovation. Using a conceptual research design and secondary data sources, we synthesized the existing literature on AI and SME performance. The findings revealed that AI offers significant benefits, including improved decision-making, customer engagement, and sustainable business practices. However, adoption is hindered by high costs, a lack of skilled workforce, inadequate infrastructure, and cultural resistance to technological change.

Dauda and Gulani (2025) examined the impact of digital marketing and AI (AI) on the performance of SMEs in Northeast Nigeria. This study focused on how digital marketing and AI influence key performance indicators, including customer satisfaction, competitive advantage, and revenue growth. Using a descriptive survey design, data were collected from 379 SMEs selected from a population of 21,358 registered businesses through interviews and structured questionnaire. Data analysis, conducted using SPSS (v26), involved crosstab analysis, descriptive statistics, and multiple regression modeling. The results showed that 70% of SMEs have adopted digital marketing, and 52% of them use AI tools. Digital marketing ($B = 0.48$, $p = 0.001$) and AI adoption ($B = 0.41$, $p = 0.002$) significantly improved SME performance. These factors collectively explained 68% of the variation in performance ($R^2 =$

0.68). The study identified high implementation costs, a lack of technical expertise, and data privacy concerns as major barriers to digital adoption.

Okafor and Chia (2024) examined the impact of digital strategies on the operational efficiency of small businesses in North Central Nigeria, focusing on Facebook advertising and YouTube. The study was based on the Technology Acceptance Model (TAM) and Network Perspective Theory (NPT), and employed a mixed-methods approach using surveys and interviews. Data were collected from a sample of 321 SMEs drawn from a population of 13,378 registered with SMEDAN using quota sampling. Statistical analyses, including ANOVA and regression (SPSS v20), revealed that Facebook advertising significantly enhanced customer patronage ($R^2 = 0.782$, $F = 354.07$, $p < 0.05$), while YouTube usage had a significant positive effect on customer satisfaction ($R^2 = 0.759$, $F = 310.27$, $p < 0.05$). Together, digital strategies explained more than 75% of the variation in operational efficiency.

Chukwuemeka, Kn, Chinenye Monica, and Promise (2024) studied the role of smart technology in the sustainability and competitiveness of SMEs in Anambra State, Nigeria. Employing a qualitative approach and descriptive research design, the study conducted in-depth interviews with 10 SME owners selected through convenience sampling. Thematic analysis was performed using MAXQDA Analytics Pro 2020 to analyze the verbatim transcripts. The results showed that smart technology, encompassing digital tools, automation, and data analytics, significantly enhanced operational efficiency, decision-making, and customer engagement. It also identified challenges such as the high cost of technological infrastructure, limited digital skills among SMEs, and inadequate policy support.

In their study titled "Role of Artificial Intelligence on SMEs Management in Southwest Nigeria," Adegbuyi, Noor, and Adeniyi (2024b) examined the awareness, understanding, and adoption of AI-driven systems among SME operators in Southwest Nigeria. Using a sample of 355 SME respondents, data were gathered through questionnaires and analyzed using means, percentages, standard deviations and t-tests. The results showed that while 75% of respondents were aware of AI technologies, only 55–63% demonstrated a deep understanding of or had implemented such tools. The key barriers identified included limited financial resources, insufficient digital infrastructure, lack of technical skills, and cultural resistance to change.

Chukwudi Christian Ifekanandu et al. (2023) investigated how AI adoption affects the marketing performance of quoted manufacturing firms in Nigeria, focusing on sales and market share growth. The study used Innovation Diffusion Theory and employed a correlational design with a positivist research philosophy. Data were collected through structured questionnaires from 206 managers sampled from a population of 426 across 71 quoted firms in South-South Nigeria. Spearman rank-order correlation coefficient (rho) was used for analysis via SPSS version 23. The findings reveal that AI technologies have a strong and significant relationship with both sales growth ($rho = 0.710$, $p < 0.01$) and market share growth ($rho = 0.622$, $p < 0.01$). AI capabilities also strongly correlated with sales growth ($rho = 0.745$, $p < 0.01$) and market share growth ($rho = 0.688$, $p < 0.01$).

Arachie, Dibua, and Idigo (2023) conducted a study titled "Artificial Intelligence as a Catalyst for the Sustainability of Small and Medium Scale Businesses in Nigeria," focusing on SMEs registered under the Corporate Affairs Commission (CAC) in Southeast Nigeria. With a population of 27,546 SMEs, a sample of 379 respondents was drawn using Krejcie and Morgan's sample size determination method. Data collection involved structured questionnaires and interviews, which were analyzed using descriptive statistics, including frequencies and percentages. The study found that although many SME operators are aware of artificial intelligence, actual usage, especially in CRM and marketing functions, is minimal, with most operations still carried out manually. The authors emphasized the need for improved AI education, supportive financing models, and policy-level interventions to facilitate the integration of AI. This research highlights the existing gap between AI awareness and practical application, reinforcing the need for systemic support for AI-CRM adoption in Nigeria's SME sector.

Nwankwo and Adigwe (2023), in their study titled "The Impact of AI-Driven Decision-Making on Digital Marketing Strategy Among SMEs in Lagos State," investigated how AI tools affect strategic

marketing transformation. This study focused on a population of 500 registered SMEs across Lagos State, of which 250 were selected using purposive sampling. Data were analyzed using multiple regression analysis in SPSS. The statistical value ($R^2 = 0.68$, $p < 0.05$) indicates a significant positive relationship between the adoption of AI decision-making tools and digital marketing efficiency. The findings revealed that SMEs utilizing AI for real-time customer insights, campaign optimization, and predictive analysis experienced a 35% increase in marketing effectiveness.

Okeke and Bello (2022), conducted a study titled "Artificial Intelligence and Data-Driven Decision-Making in Small Business Digital Marketing in Abuja Metropolis." The study targeted 320 SMEs registered under the Abuja Enterprise Agency, of which 180 SMEs were randomly sampled. Using Structural Equation Modeling (SEM) for data analysis, the researchers found a strong correlation between AI adoption and marketing transformation outcomes ($\beta = 0.72$, $p < 0.01$). The study emphasized that businesses using AI-based platforms for decision-making achieved improved personalization and campaign ROI of up to 42%.

Adegbuyi, Noor, and Adeniyi (2024a), in their work titled "Leveraging Artificial Intelligence for Strategic Marketing Decisions in SMEs: Evidence from South-West Nigeria," examined 150 SMEs across Ogun and Oyo States. Using correlation and regression analyses through STATA, they found a significant link between AI utilization and improvements in digital marketing metrics ($r = 0.64$, $p < 0.05$). The study highlighted that AI systems, particularly those used for customer segmentation and automated content generation, led to increased customer engagement and sales conversion rates.

Chukwu and Onuoha (2020) in their study titled "The Role of Intelligent Technologies in Enhancing Marketing Decision-Making among Nigerian SMEs," surveyed 120 SMEs in Enugu and Anambra State, using a stratified sampling technique. Data were analyzed using descriptive statistics and chi-square tests, which revealed that 78% of SMEs using AI tools reported enhanced marketing agility and responsiveness. The chi-square value ($\chi^2 = 24.15$, $p < 0.01$) confirmed the significance of AI systems in real-time decision making.

3. Research Methodology

This study adopted a descriptive survey research design, which is appropriate for collecting data on current practices and opinions. Using this design, the study can obtain generalizable quantitative data and help identify trends and correlations between AI adoption and marketing performance. The study was conducted in Lagos State, Nigeria, which is recognized as the commercial and technological hub of the country and hosts a substantial proportion of SMEs and digital start-ups. According to the Small and Medium Enterprises Development Agency of Nigeria (Nigeria & Statistics, 2013), Lagos accounts for over 37% of Nigeria's active SMEs, making it a suitable location for understanding how digital marketing transforms small businesses through AI technologies.

The primary instrument for data collection was a structured questionnaire developed based on validated items from previous studies, such as Osho and Ogunode (2016), and adapted to suit the context of Nigerian SMEs. The population of this study comprises owners and digital marketing managers of registered SMEs in Lagos State, Nigeria, particularly those who engage in digital marketing activities. According to the SMEDAN and National Bureau of Statistics (2022) report, Lagos State is home to approximately 11,663 registered SMEs. From this population of 11,663, a sample size of 371 was obtained by applying the Krejcie and Morgan (1970) sample size formula. While distributing the questionnaire, emphasis was given to SMEs that used some form of AI in their marketing activities. The collected data were analyzed using descriptive and inferential statistics.

Descriptive statistics, such as frequency distribution, means, and standard deviation, were used to summarize respondents' characteristics and general trends in AI adoption. Inferential statistics were also used for data analysis (regression analysis), and the hypothesis was tested at a 5% level of significance. A total of 319 copies of the questionnaire were used for the analysis because 40 of the 371 distributed copies were not returned, while 12 were either not completely filled or mutilated beyond usage.

4. Results and Discussions

4.1 Objective 1

Assess the role of AI-driven customer relationship management (CRM) systems in transforming digital marketing in Nigerian SMEs.

Table 1. the role of AI-driven CRM Systems in Transforming Digital Marketing among Nigerian SMEs

S/N	Items	SA	A	D	SD	Mean	STD
1	Artificial Intelligent Customer Relationship Management (AI-CRM) systems enhance personalized customer interaction.	190	120	8	1	3.56	.562
2	AI-CRM tools improve customer retention and loyalty.	80	176	50	13	3.01	.756
3	AI-based CRM tools contribute to real-time customer service delivery.	107	132	60	20	3.02	.881
4	Adoption of AI-CRM tools increases SMEs' competitive advantage.	99	129	79	12	2.99	.843
5	AI-CRM systems help SMEs analyze customer behaviour for better decision-making	200	117	2	-	3.62	.499
6	The use of AI-CRM tools enhances targeted marketing campaigns.	310	8	1	-	3.97	.229
7	AI-driven CRM solutions increase sales conversion rates for SMEs.	100	176	32	11	3.14	.730
8	Integrating AI into CRM systems improves customer satisfaction levels.	89	112	90	28	2.82	.940
9	AI-powered CRM tools reduce operational costs in customer relationship management	50	149	81	39	2.66	.886

Source: Field Survey, 2025

The data in Table 1 provide insights into how AI-driven Customer Relationship Management (CRM) systems are perceived to transform digital marketing among Nigerian SMEs. The results show that the respondents generally agreed that AI-driven CRM systems play an important role in transforming digital marketing among Nigerian SMEs. The use of AI-CRM tools to enhance targeted marketing campaigns recorded the highest mean score (X = 3.97, SD = .229), indicating a very strong agreement and a high level of consistency among the respondents. Similarly, the role of AI-CRM systems in analyzing customer behavior for better decision-making (X = 3.62, SD = .499) and enhancing personalized customer interaction (X = 3.56, SD = .562) was also strongly supported, with relatively low variability in responses. In contrast, items such as the ability of AI-powered CRM tools to reduce operational costs (X = 2.66, SD = .886) and the integration of AI into CRM systems to improve customer satisfaction (X = 2.82, SD = .940) received lower mean ratings, showing weaker agreement and greater divergence of opinion among the respondents. Overall, the findings suggest that respondents perceive AI-CRM systems as most impactful in targeted marketing, decision-making, and customer personalization, while their effectiveness in reducing costs and improving customer satisfaction is viewed less strongly.

4.2 Objective 2

Investigating the influence of AI-based decision-making on digital marketing transformation among Nigerian SMEs.

Table 2. Investigating how AI-based decision-making influences digital marketing transformation among Nigerian SMEs

AI-based decision-making							
S/N	Items	SA	A	UN	D	SD	Mean
1	AI tools improve the speed and accuracy of business decision-making.	120	141	3	40	15	3.97
2	AI-based decisions reduce human error in marketing operations.	100	145	15	39	20	3.83
3	My business can uses AI to forecast market trends and customer behaviour.	220	89	-	10	-	4.63
4	AI decision-making has significantly improved our operational efficiency.	88	130	29	70	2	3.73
5	AI adoption in decision-making is cost-effective for SMEs.	120	121	17	49	12	3.90
Digital Marketing Transformation							
	Items	SA	A	UN	D	SD	Mean
1	Digital marketing has increased customer reach and engagement in my business.	300	16	-	3	-	4.92
2	Online platforms (e.g., social media) have improved brand visibility for my SME.	310	9	-	-	-	4.97
3	My business uses digital marketing analytics to guide strategy and campaigns.	200	112	-	5	2	4.58
4	There has been a positive impact on sales since adopting digital marketing strategies in my business.	189	108	-	19	3	4.45
5	Digital marketing has helped us better understand customer needs and preferences.	237	72	-	10	-	4.68

Source: Field Survey, 2025

The results on AI-based decision-making in Table 2 reveal that respondents generally hold positive views regarding the contribution of AI tools to SME digital marketing transformation. The first item, which examined whether AI tools improve the speed and accuracy of business decision-making, recorded a mean of 3.97, suggesting a strong agreement among respondents that AI adoption enhances both efficiency and reliability in business choices. The second item, which focused on whether AI-based decisions reduce human error in marketing operations, had a mean score of 3.83, indicating agreement. This implies that most respondents believed that AI plays a significant role in minimizing mistakes that often arise from manual processes, although the level of agreement was slightly lower than that for the first item.

The third item, which asked whether businesses could use AI to forecast market trends and customer behavior, had the highest mean of 4.63, showing a very strong consensus among respondents. This indicates that the predictive capability of AI is widely recognized as its most valuable contribution to decision-making in SMEs. The fourth item, which measured the extent to which AI decision-making improved operational efficiency, yielded a mean of 3.73. This reflects a general agreement that AI adoption streamlines operations, although there is some variation in perception across respondents. Finally, the fifth item, which assessed whether AI adoption in decision-making is cost-effective for SMEs, had a mean of 3.90, showing strong agreement that AI is not only effective but also economical for small businesses, thereby reducing overall expenses in the long term.

Turning to the section on digital marketing transformation, the results reveal even higher levels of agreement, demonstrating that SMEs perceive digital marketing as highly impactful and necessary. The first item, which asked whether digital marketing has increased customer reach and engagement, recorded a mean of 4.92, showing overwhelming agreement that online marketing significantly expanded market access. The second item, which measured the contribution of online platforms such as social media to brand visibility, recorded the highest mean in the section at 4.97, indicating almost unanimous agreement that digital platforms have transformed how SMEs are perceived and recognized in the market. The third item, which examined whether businesses use digital marketing analytics to guide their strategy and campaigns, had a mean of 4.58, implying strong support for the view that data-driven insights from digital platforms are increasingly shaping SME marketing strategies. The fourth item, which asked whether sales had increased since the adoption of digital marketing, recorded a mean of 4.45, suggesting a strong consensus that digital strategies had tangible positive effects on revenue. Finally, the fifth item, which assessed whether digital marketing has helped SMEs better understand customer needs and preferences, obtained a mean score of 4.68, indicating that digital tools are widely recognized as critical in enabling businesses to capture and respond to customer expectations more effectively.

4.3 Test of Hypothesis

AI-based decision-making has a statistically significant relationship with digital marketing transformation among Nigerian SMEs.

Table 3. Regression Result Outputs

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	df	F	t	Sig
1	.853[a]	.727	.726	1.254	1	843.735	53.514	.000[b]

a. Predictors: (Constant) Perceived AI based decision-making
b. Dependent Variable: Digital marketing transformation SMSs
Source: Field Survey, 2025

The regression results in Table 3 reveal a strong positive relationship between perceived AI-based decision-making and digital marketing transformation among Nigerian SMEs, as indicated by the correlation coefficient (R) of 0.853. The R Square value of 0.727 shows that approximately 73% of the variance in digital marketing transformation can be explained by the perceived use of AI-based decision-making. The adjusted R Square value of 0.726, which accounts for the number of predictors, further confirms the model's strength and reliability. The standard error of the estimate was 1.254, indicating a relatively low average deviation of the predicted values from the actual outcomes. The model's significance is supported by a high F-value of 843.735 and a significance level (Sig.) of 0.000, demonstrating that the regression model was statistically significant.

Based on the decision rule for hypothesis testing: if the p-value (Sig.) ≤ 0.05, we rejected the null hypothesis (H_0) and accepted the alternative hypothesis (H_1). Since the Sig. As shown in Table 3, is 0.000, we accept the alternate hypothesis that AI-based decision-making has a significant relationship with digital marketing transformation among Nigerian SMEs. This implies that leveraging AI in decision-making processes can meaningfully contribute to how SMEs transform and implement digital marketing strategies.

4. Results and Discussion

The results of Objective 1, which focused on assessing how AI-driven Customer Relationship Management (CRM) systems contribute to digital marketing transformation among Nigerian SMEs, revealed a generally positive perception among respondents. Mean scores ranging from 2.66 to 3.97 on a 4-point Likert scale suggest a strong agreement that AI-CRM tools enhance customer engagement, personalized service, and competitive advantage. These findings align with those of Christian Chukwudi Ifekanandu, Anene, Iloka, and Ewuzie (2023), who observed that AI-enabled CRM systems

significantly enhance customer satisfaction and loyalty by offering real-time, personalized marketing interactions.

Similarly, Okolie and Umeh (2022) emphasized that AI-driven CRM tools support SMEs in building stronger customer relationships, which are critical in a digitally competitive business environment. The low standard deviations recorded indicate a high level of consensus among the respondents, reinforcing the reliability of the findings. Overall, the results underscore that SMEs in Nigeria view AI-CRM tools not only as technological add-ons but also as strategic enablers for digital marketing transformation. The result of Objective 2, which investigated how AI-based decision-making influences digital marketing transformation among Nigerian SMEs, states that AI-based decision-making has a statistically significant relationship with digital marketing transformation among Nigerian SMEs.

The results showed a statistically significant positive relationship between the variables. This relationship is positive, implying that an increase in AI-based decision-making leads to a concomitant increase in digital marketing transformation. That is, when SMEs improve their adoption of AI-based decision-making, there will also be an increase in the transformation of their digital marketing activities. This finding is consistent with Eze and Oladimeji's (2023) finding that AI-powered decision systems in SMEs improve digital marketing responsiveness and strategic adaptability. In a related study, Garuba and Nwankwo (2022) concluded that the integration of AI into business decision-making processes enhances data-driven marketing strategies, optimizes resource use, and fosters better customer engagement. Thus, the evidence from this study supports the assertion that AI-based decision-making is a critical driver of digital marketing transformation among Nigerian SMEs.

5. Conclusion

5.1 Conclusion

This study affirms that artificial intelligence (AI) is a transformative force in the digital marketing landscape of Nigerian SMEs, particularly through its integration into Customer Relationship Management (CRM) systems and data-driven decision-making processes. The findings demonstrate that AI-CRM tools enhance personalized customer engagement, improve loyalty, and boost competitive advantage, while AI-based decision-making increases the speed, accuracy, and efficiency of marketing strategies. These insights suggest that adopting AI technologies equips SMEs with the agility and intelligence needed to thrive in a competitive digital marketplace. Thus, embracing AI-driven solutions is not only a strategic imperative but also a critical pathway for sustaining business growth and marketing innovation among Nigerian SMEs.

5.2 Recommendations

Based on the findings of this study, the following recommendations are suggested:

1. Nigerian SMEs should invest in and integrate AI-driven CRM systems to enhance personalized customer interactions, improve engagement, and gain a competitive edge in the digital marketplace.
2. Nigerian SMEs should adopt AI-based decision-making tools and training to support data-driven marketing strategies and optimize their digital marketing transformation efforts.

5.3 Limitation

The study focused on a single state in Nigeria and used the findings to make generalizations. Although Lagos State has the largest number of registered SMEs as the record says, making a generalization based on the findings of Lagos alone may not be enough, hence limiting this study.

5.4 Suggestion

Other researchers and studies may wish to extend the research to cover at least a region in Nigeria or two to three regions to be a good representation of what is happening in Nigeria with respect to the adoption of Artificial Intelligence in digital marketing and decision-making.

References

Adegbuyi, A., Noor, S., & Adeniyi, A. O. (2024a). Leveraging Artificial Intelligence to Enhance Marketing Performance of E-Commerce Platforms in Nigeria. *International Journal of Operational Research in Management, Social Sciences & Education, 10*(1), 102-123. doi:https://doi.org/10.48028/iiprds/ijormsse.v10.i1.07

Adegbuyi, A., Noor, S., & Adeniyi, A. O. (2024b). Role of artificial intelligence on small and medium-sized enterprises (SMES) management in southwest, Nigeria. *International Journal of Entrepreneurship Technology and Innovation, 1*(1), 11-28.

Arakpogun, E. O., Elsahn, Z., Olan, F., & Elsahn, F. (2021). Artificial intelligence in Africa: Challenges and opportunities. *The fourth industrial revolution: Implementation of artificial intelligence for growing business success, 935*, 375-388. doi:https://doi.org/10.1007/978-3-030-62796-6_22

Azage, J., & Ikpeazu, P. C. (2024). AI-Driven Customer Relationship Management Practices and Sustainable Growth of Nigerian Smes. *International Journal of Business and Management Research, 5*(3), 143-171.

Bandari, V. (2019). The impact of artificial intelligence on the revenue growth of small businesses in developing countries: an empirical study. *Reviews of Contemporary Business Analytics, 2*(1), 33-44.

Basri, W. (2020). Examining the impact of artificial intelligence (AI)-assisted social media marketing on the performance of small and medium enterprises: toward effective business management in the Saudi Arabian context. *International Journal of Computational Intelligence Systems, 13*(1), 142-152. doi:https://doi.org/10.2991/ijcis.d.200127.002

Benitez, J., Arenas, A., Castillo, A., & Esteves, J. (2022). Impact of digital leadership capability on innovation performance: The role of platform digitization capability. *Information & Management, 59*(2). doi:https://doi.org/10.1016/j.im.2022.103590

Benitez, J., Ruiz, L., Castillo, A., & Llorens, J. (2020). How corporate social responsibility activities influence employer reputation: The role of social media capability. *Decision support systems, 129*. doi:https://doi.org/10.1016/j.dss.2019.113223

Beyari, H., & Garamoun, H. (2022). The effect of artificial intelligence on end-user online purchasing decisions: Toward an integrated conceptual framework. *Sustainability, 14*(15), 1-17. doi:https://doi.org/10.3390/su14159637

Chaffey, D., & Ellis-Chadwick, F. (2019). *Digital marketing*: Pearson uk.

Chaffey, D., & Ellis-Chadwick, F. (2022). *Digital Marketing: Strategy, Implementation, and Practice* (8 ed.). Harlow, United Kingdom: Pearson Education Limited.

Chan, C. M., Teoh, S. Y., Yeow, A., & Pan, G. (2019). Agility in responding to disruptive digital innovation: Case study of an SME. *Information systems journal, 29*(2), 436-455. doi:https://doi.org/10.1111/isj.12215

Chatterjee, S., Chaudhuri, R., Vrontis, D., Thrassou, A., & Ghosh, S. K. (2021). Adoption of artificial intelligence-integrated CRM systems in agile organizations in India. *Technological Forecasting and Social Change, 168*. doi:https://doi.org/10.1016/j.techfore.2021.120783

Chukwuemeka, F. E., Kn, N. E., Chinenye Monica, O., & Promise, O. C. (2024). Smart Technology and Sustainability of SMES in Anambra State, Nigeria. *International Journal of Business and Management Research, 5*(1), 121-143.

Dauda, M., & Gulani, G. (2025). Impact of Digital Marketing and Artificial Inteligence on SME Performance in Nigeria. *Uniben Journal of Marketing, 4*(1), 258-269.

Davenport, T., Guha, A., Grewal, D., & Bressgott, T. (2020). How artificial intelligence will change the future of marketing. *Journal of the Academy of Marketing science, 48*(1), 24-42. doi:https://doi.org/10.1007/s11747-019-00696-0

Davenport, T. H. (2018). *The AI advantage: How to put the artificial intelligence revolution to work*. Cambridge, MA: MIT Press.

Davis, F. D. (1989). Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology. *MIS quarterly, 13*(3), 319-340. doi:https://doi.org/10.2307/249008

Desai, V., & Vidyapeeth, B. (2019). Digital marketing: A review. *International Journal of Trend in Scientific Research and Development, 5*(5), 196-200.

Dwivedi, Y. K., Hughes, L., Ismagilova, E., Aarts, G., Coombs, C., Crick, T., . . . Eirug, A. (2021). Artificial Intelligence (AI): Multidisciplinary perspectives on emerging challenges,

opportunities, and agenda for research, practice and policy. *International Journal of Information Management, 57*. doi:https://doi.org/10.1016/j.ijinfomgt.2019.08.002
Ebuka, A. A., Chike, N. K., Chigozie, U. S., & Muhammed, I. A. (2025). Artificial intelligence adoption and business performance: Evidence from small and medium enterprises in emerging markets. *International Journal of Public Administration and Management Research, 11*(2), 69-86.
Ebuka, A. A., Emmanuel, D., & Idigo, P. (2023). Artificial intelligence as a catalyst for the sustainability of Small and Medium Scale Businesses (SMEs) in Nigeria. *Annals of Management and Organization Research, 5*(1), 1-11. doi:https://doi.org/10.35912/amor.v5i1.1719
Ghasemaghaei, M., & Calic, G. (2020). Assessing the impact of big data on firm innovation performance: Big data is not always better data. *Journal of Business Research, 108*, 147-162. doi:https://doi.org/10.1016/j.jbusres.2019.09.062
Guerola-Navarro, V., Gil-Gomez, H., Oltra-Badenes, R., & Sendra-García, J. (2021). Customer relationship management and its impact on innovation: A literature review. *Journal of Business Research, 129*, 83-87. doi:https://doi.org/10.1016/j.jbusres.2021.02.050
Holzinger, A., Langs, G., Denk, H., Zatloukal, K., & Müller, H. (2019). Causability and explainability of artificial intelligence in medicine. *Wiley interdisciplinary reviews: data mining and knowledge discovery, 9*(4). doi:https://doi.org/10.1002/widm.1312
Ifekanandu, C. C., Anene, J. N., Iloka, C. B., & Ewuzie, C. O. (2023). Influence of artificial intelligence (AI) on customer experience and loyalty: Mediating role of personalization. *Journal of Data Acquisition and Processing, 38*(3), 1936-1959. doi:https://doi.org/10.5281/zenodo.98549423
Ifekanandu, C. C., Ezirim, A. C., & Asemota, K. U. (2023). Artificial Intelligence Adoption and MarketingPerformance of Quoted Manufacturing Firms in Nigeria. *Int. J. Innov. Sci. Res. Technol, 8*, 1194-1207. doi:https://doi.org/10.5281/zenodo.8305002
Iyelolu, T. V., Agu, E. E., Idemudia, C., & Ijomah, T. I. (2024). Improving customer engagement and crm for smes with ai driven solutions and future enhancements. *International journal of engineering research and development, 20*(8), 1150-1168.
Jarek, K., & Mazurek, G. (2019). Marketing and artificial intelligence. *Central European Business Review, 8*(2), 46-55.
Kabir, M. F., Rahman, M. A., Al Mobin, K. S., & Rana, M. I. C. (2025). The Impact of Artificial Intelligence on Business Transformation: Enhancing Decision-Making, Operational Efficiency, and Customer Experience. *IJSAT-International Journal on Science and Technology, 16*(1). doi:https://doi.org/10.71097/IJSAT.v16.i1.2421
Kassa, B. Y., & Worku, E. K. (2025). The impact of artificial intelligence on organizational performance: The mediating role of employee productivity. *Journal of Open Innovation: Technology, Market, and Complexity, 11*(1). doi:https://doi.org/10.1016/j.joitmc.2025.100474
Krejcie, R. V., & Morgan, D. W. (1970). Determining sample size for research activities. *Educational and Psychological Measurement, 30*(3), 607-610.
Lee, Y., Kozar, K. A., & Larsen, K. R. (2003). The technology acceptance model: Past, present, and future. *Communications of the Association for Information Systems, 12*(1), 752-780. doi:https://doi.org/10.17705/1CAIS.01250
Marston, S., Li, Z., Bandyopadhyay, S., Zhang, J., & Ghalsasi, A. (2011). Cloud computing—The business perspective. *Decision support systems, 51*(1), 176-189. doi:https://doi.org/10.1016/j.dss.2010.12.006
McCarthy, J. (2007). What is Artificial Intelligence? . Retrieved from http://www-formal.stanford.edu/jmc/whatisai/whatisai.pdf
Nigeria, S. a. M. E. D. A. o., & Statistics, N. B. o. (2013). *SMEDAN and National Bureau of Statistics collaborative survey: Selected findings*. Retrieved from Abuja, Nigeria: https://www.smedan.gov.ng/
Nuseir, M. T., El Refae, G. A., Aljumah, A., Alshurideh, M., Urabi, S., & Kurdi, B. A. (2023). Digital marketing strategies and the impact on customer experience: A systematic review. *The effect of information technology on business and marketing intelligence systems, 1056*, 21-44. doi:https://doi.org/10.1007/978-3-031-12382-5_2
Nwabuike, C. C., Onodugo, V. A., Arachie, A., & Nkwunonwo, U. C. (2020). Blockchain technology for cyber security: Performance implications on emerging markets multinational corporations,

overview of Nigerian internationalized banks. *International journal of scientific & technology research, 9*(8), 244-252.
Nwagbala, S. C., Ezeanokwasa, F. N., Nwachukwu, R., Uzodike, N. J., & Nwosu, O. P. (2025). AI adoption and sustainability of SMES in Africa: Opportunities and challenges. *International Journal of Science and Research Archive, 14*(1), 467-475. doi:https://doi.org/10.30574/ijsra.2025.14.1.0009
Ojambo, M., & Yılmaz, N. (2020). Mobile Banking Activities and Technology Acceptance Models and Theories: A Case Study of Uganda. *Journal of Consumer and Consumption Research, 12*(2), 403-454.
Okafor, C. A., & Chia, I. I. (2024). Digital Strategies and Operational Efficiency of Small Businesses in North Central Nigeria. *International Journal of Capacity Building in Education and Management, 6*(3), 17-34.
Okwudiri, N., Arachie, A. E., Elechi, S., & Egede, F. (2025). Effect of digital marketing adoption on the sustainable growth of small and medium enterprises (SMEs): evidence from Nigeria. *Corporate Sustainable Management Journal (CSMJ), 3*(2), 38-44. doi:https://doi.org/10.26480/csmj.02.2025.38.44
Olan, F., Arakpogun, E. O., Suklan, J., Nakpodia, F., Damij, N., & Jayawickrama, U. (2022). Artificial intelligence and knowledge sharing: Contributing factors to organizational performance. *Journal of Business Research, 145*, 605-615. doi:https://doi.org/10.1016/j.jbusres.2022.03.008
Omonzejele, F. E., & Okogun, F. (2025). Artificial Intelligence and Productivity in Nigerian Small Scale Businesses: A Review of Literature. *Journal of Management Science and Entrepreneurship, 8*(7), 154-171. doi:https://doi.org/10.70382/bejmse.v8i7.033
Osho, V. M., & Ogunode, P. O. (2016). Impact of service quality on customer satisfaction in the telecommunication industry. *Academic Discourse: An International Journal, 9*(1), 108-119.
Pascalau, S. V., & Urziceanu, R. M. (2020). Traditional Marketing Versus Digital Marketing. *Agora International Journal of Economical Sciences, 14*, 1-14. doi:https://doi.org/10.15837/aijes.v14i0.4202
Rust, R. T. (2020). The future of marketing. *International Journal of Research in marketing, 37*(1), 15-26. doi:https://doi.org/10.1016/j.ijresmar.2019.08.002
Soni, N., Sharma, E. K., Singh, N., & Kapoor, A. (2020). Artificial intelligence in business: from research and innovation to market deployment. *Procedia Computer Science, 167*, 2200-2210. doi:https://doi.org/10.1016/j.procs.2020.03.272
Sun, Y., & Wang, P. (2021). The e-commerce investment and enterprise performance based on customer relationship management. *Journal of Global Information Management (JGIM), 30*(3), 1-15. doi:https://doi.org/10.4018/JGIM.20220701.oa9
Umetiti, C. B., Nwafor, A. E., Arachie, A. E., & Ifeme, A. P. (2025). Digital literacy in the context of small and medium enterprises (SMEs): A performance dynamics. *International Journal of Public Administration and Management Research, 11*(1), 1-17.
Vashishth, T. K., Sharma, V., Sharma, K. K., Kumar, B., Chaudhary, S., & Panwar, R. (2024). Enhancing customer experience through AI-enabled content personalization in e-commerce marketing. In M. Ltifi (Ed.), *Advances in digital marketing in the era of artificial intelligence* (pp. 7-32). Boca Raton, FL: CRC Press.
Venkatesh, V., & Davis, F. D. (2000). A theoretical extension of the technology acceptance model: Four longitudinal field studies. *Management Science, 46*(2), 186-204. doi:https://doi.org/10.1287/mnsc.46.2.186.11926
Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. *MIS quarterly, 27*(3), 425-478. doi:https://doi.org/10.2307/30036540
Wamba, S. F. (2022). Impact of artificial intelligence assimilation on firm performance: The mediating effects of organizational agility and customer agility. *International Journal of Information Management, 67*. doi:https://doi.org/10.1016/j.ijinfomgt.2022.102544
Yadav, M. K., & Dwivedi, N. (2023). Impact of AI on Business *The Business and Management Review, 5*(3). doi:https://doi.org/10.36948/ijfmr.2023.v05i03.2791