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# Artificial Intelligence Personalized Marketing Content and Consumer Behavior in Nigerian SMEs

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**Abstract**
**Purpose:** This study examined how AI-driven personalization of digital marketing content influences consumer behavior in Nigerian Small and Medium Enterprises (SMEs).
**Research Methodology:** A Systematic Literature Review (SLR) of 30 empirical studies published between 2015 and 2025 was performed. Data were sourced from peer-reviewed journal articles, conference papers, review studies, and industry reports that specifically examined AI-driven personalized marketing tools, particularly, product recommendation systems.
**Results:** The findings indicate that 60% of the reviewed studies reported moderate-to-high adoption of AI-driven personalized recommendation systems among digitally mature Nigerian SMEs in the retail and e-commerce sectors. Across studies, AI-enabled personalization produced an average 15.8% increase in consumer purchase intention, with a strong mean correlation (r = 0.60) between personalized product recommendations and purchase intentions.
**Conclusions:** AI-driven personalization significantly improves marketing effectiveness and positively shapes consumer purchase intentions in Nigerian SMEs.
**Limitations:** The exclusive use of secondary data and SLR-based synthesis limits the generalizability and real-time assessment of AI adoption and its impact on consumer behavior.
**Contributions:** This study consolidates empirical evidence on AI-personalized marketing in Nigerian SMEs, highlighting its impact on consumer purchase intention, while underscoring the need to address adoption barriers and ensure ethical data practices.

**Keywords:** *Artificial Intelligence (AI), Consumer Purchase Intention, Digital Marketing, Small and Medium Enterprises (SMEs), Personalized Marketing*

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## 1. Introduction

Rapid technological advancement has reshaped how businesses engage with customers, create value, and remain competitive. Among the most transformative developments of the past decade is artificial intelligence (AI), which now permeates sectors such as customer service, manufacturing, logistics, healthcare, and education cited in (Arachie, Okwudiri, Anagwu, & Okeke, 2025). AI refers to the ability of computer systems to simulate human intelligence by performing tasks such as reasoning, learning and problem-solving (Morandín-Ahuerma, 2022). As technology evolves, it enables businesses to execute complex processes with unprecedented speed and accuracy.

In marketing, AI has become central to personalization. AI-powered personalization allows firms to tailor content, offers, and product recommendations to individual customer preferences (Babadoğan,

2024). Using machine learning and advanced algorithms, AI systems analyze data, such as browsing behavior and past purchases, to build consumer profiles and predict which products or advertisements are most likely to appeal to each user (Zhang, 2024). This capability enables Small and Medium Enterprises (SMEs) to move beyond generic marketing messages and deliver highly targeted digital content.

SMEs play a critical role in the national development. In Nigeria, they account for approximately 96% of businesses, employ over 84% of the workforce, and contribute nearly 48% to the Gross Domestic Product (Akinyemi, Okere, & Gbadamosi, 2023). They are widely recognized as engines of job creation, innovation, and poverty reduction (Oluremi & Maku, 2024). Despite their importance, many Nigerian SMEs struggle to adopt advanced digital tools such as AI due to limited technical skills, poor infrastructure, high adoption costs, weak digital literacy, and regulatory uncertainties (Ebuka, Nzewi, Gerald, & Ezinne, 2020; Nwagbala, Ezeanokwasa, Nwachukwu, Uzodike, & Nwosu, 2025). These constraints create a gap between what AI technologies can offer and what SMEs can implement in practice.

As interest in AI adoption grows, there is a need for clearer empirical insights into how Nigerian SMEs integrate AI-driven personalization tools and how these tools influence consumer behavior. Existing studies on AI personalization in Nigeria are fragmented and often focus on general digital transformation rather than consumer-level outcomes. Systematic literature reviews (SLRs) specifically examining AI-driven personalized marketing within Nigerian SMEs remain limited, creating a significant knowledge gap, which this study addresses by synthesizing empirical evidence on how SMEs in Nigeria adopt AI-driven personalized product recommendation systems and how such personalization strategies affect consumer behavior (Saha, Roy, & Akber, 2025).

The main objective of this study is to analyze the influence of AI-driven personalization in digital marketing content on consumer behavior among SMEs in Nigeria. Specifically, this study seeks to examine the level of adoption of AI-driven personalized product recommendation systems by Nigerian SMEs in their digital marketing strategies and to assess the effect of these personalized product recommendations on consumers' purchase intentions. This study addresses two main research questions: to what extent do Nigerian SMEs adopt AI-driven personalized product recommendation systems in their digital marketing strategies, and how does AI-driven personalization of marketing content influence consumer purchase intentions among Nigerian SMEs?

## 2. Literature Review and Hypotheses Development

### *2.1 Artificial Intelligence (AI)*

Artificial intelligence (AI) refers to the ability of machines to perform tasks that require human intelligence. AI involves learning, reasoning, and decision-making processes carried out through computational systems (Nnanna-Ohuonu, 2025). John McCarthy, one of the early pioneers of AI, described it as "the science and engineering of making intelligent machines" (Arachie et al., 2025; Sonone & Dharme, 2019). While early conceptualization focused on building intelligent systems, recent perspectives have highlighted the cognitive and analytical capabilities that enable modern AI applications (Morandín-Ahuerma, 2022).

Contemporary AI technologies, such as machine learning and natural language processing, have reshaped business operations, especially in data-driven environments (Rimon, 2024). Machine learning models improve over time as they learn from data, whereas natural language processing helps systems interpret and respond to human language. (Rimon, 2024) argues that these tools enhance how businesses collect and use data, while (Badmus, Rajput, Arogundade, & Williams, 2024) emphasizes the predictive and forward-looking insights AI provides. Thus, AI not only analyzes historical data but also anticipates future patterns that support managerial decision-making.

Across these perspectives, a consistent theme emerges: AI enables machines to mimic human cognitive functions to enhance business operations efficiency. The reviewed definitions differ in emphasis (technical, cognitive, and application-based) but converge on AI's role in improving analytical and

decision-making abilities. Therefore, this study defines AI as the use of computer systems to perform tasks that require human-like intelligence to enhance business performance and strategic readiness.

### *2.2 Digital Marketing*

Digital marketing refers to marketing activities conducted through Internet-enabled and electronic platforms. It represents the strategic evolution of traditional marketing by enabling interactive and data-driven customer engagement. According to Okwudiri, Arachie, Elechi, and Egede (2025)net tools at the center of contemporary marketing operations. Durucasu (2025) expanded this definition by including tools such as e-mail, social media, search engine optimization (SEO), search engine marketing (SEM), and mobile advertising.

Other scholars have emphasized different aspects of digital marketing. Gogia and Nanda (2020) view it as the use of electronic media for promotion, while M. Hassan, Ullah, Siddique, Qureshi, and Sikandar (2022) highlight its targeted, measurable, and integrated communication capabilities. Ijomah, Idemudia, Eyo-Udo, and Anjorin (2024) connect digital marketing to SME competitiveness, emphasizing the tools that expand reach, visibility, and conversion.

When synthesizing these views, it becomes clear that definitions range from tool-based to strategy-based definitions. However, they converge on the idea that digital marketing leverages digital technologies to improve communication, engagement, and customer relationship-building. Hence, this study defines digital marketing as the application of Internet-based platforms, such as social media, search engines, websites, and email, to promote offerings, attract customers, and build long-term brand relationships.

### *2.3 AI-Driven Personalization of Marketing Content*

AI-driven personalization refers to the use of artificial intelligence to tailor marketing messages, recommendations, and customer experiences based on individual preferences and behavioral patterns (Babatunde, Odejide, Edunjobi, & Ogundipe, 2024; Gao & Liu, 2023; Okeke, Alabi, Igwe, Ofodile, & Ewim, 2024). Focus on the algorithmic processes (machine learning, natural language processing, and predictive analytics) that analyze consumer data and deliver relevant content. Viktor (2024) further highlights the operational benefits, noting that AI systems automate personalization tasks and enable faster responses to changes in customer behavior.

However, ethical concerns temper these benefits. Bahangulu and Owusu-Berko (2025) and Nazeer (2024) argue that increased personalization heightens privacy risks due to extensive data collection and storage. Algorithmic bias remains a challenge because AI systems may reproduce existing biases embedded in training datasets, leading to unfair targeting or recommendations.

Synthesizing these perspectives reveals both opportunities and risks for the future. While AI-driven personalization enhances relevance, engagement, and responsiveness, it raises concerns regarding privacy, transparency, and fairness. The literature suggests a tension between personalization and ethics, highlighting the need for responsible AI practices. Therefore, this study defines AI-driven personalization as the use of AI to analyze consumer data and deliver tailored content that aligns with individual needs, while emphasizing ethical considerations.

### *2.4 Consumer Behavior*

Consumer behavior describes the thoughts, emotions, and actions that influence how individuals choose, purchase, and use products and services. Nassè (2021) emphasizes the role of habits, attitudes, and lifestyle choices, while Singh, Arora, and Choudhry (2022) outline behavioral components such as what, when, how, and why consumers make purchasing decisions. Šostar and Ristanović (2023) identified the psychological and social factors that shape consumer preferences and decisions. Dudziak, Stoma, and Osmólska (2023) argue that purchasing behavior involves complex cognitive and emotional processes rather than purely rational evaluation.

The literature reveals a multidimensional construct influenced by psychological, personal, emotional, and social factors. Despite the differences in emphasis, scholars agree that consumer behavior encompasses both internal motivations and external influences. Therefore, this study defines consumer behavior as a combination of thoughts, emotions, and actions that individuals exhibit when evaluating and purchasing products, which are shaped by psychological, personal, and social factors.

### *2.5 Consumer Purchase Intention*

Consumer purchase intention refers to a consumer's willingness to buy a product. Li, Guo, Xu, and Yu (2022) describe it as the subjective probability of making a purchase. Lin and Shen (2023) highlight the role of attitudes and external influences on this mental tendency. Zong, Liu, and Gao (2023) frame purchase intention as a psychological indicator of readiness to buy. Chang and Chen (2022) simplify the concept as the likelihood of purchase, whereas Lam (2025) demonstrate that purchase intention strongly predicts actual purchasing behavior. In addition, Sharma and Singh (2023) suggest that customer satisfaction influences purchase intention and repeat purchases.

Synthesizing these views shows that purchase intention lies at the intersection of psychological, emotional, and experiential factors. Accordingly, this study defines consumer purchase intention as a consumer's willingness and likelihood of buying a product, shaped by attitudes, emotional connections, social influences, and past experiences (Santoso & Haliansyah, 2025).

### *2.6 Conceptual Framework*

The conceptual framework for this study is anchored in the assumption that Artificial Intelligence (AI) enhances the ability of firms to personalize their marketing content, which, in turn, shapes consumer behavioral responses and influences their purchase intentions.

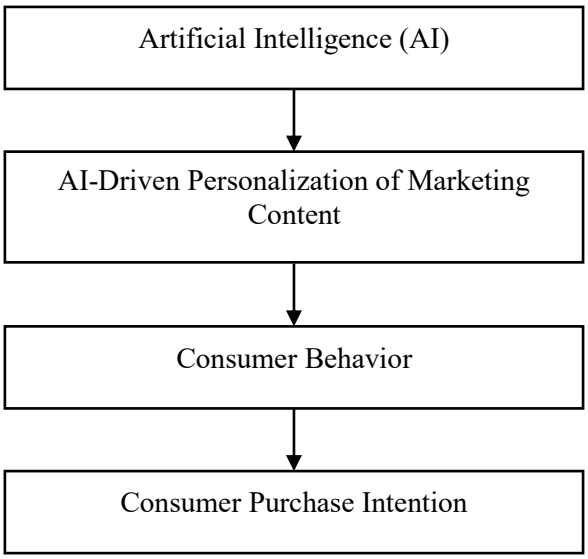


Figure 1. Conceptual framework

### *2.7 Empirical Insights*

Ebuka, Chike, Chigozie, and Muhammed (2025) investigated how the adoption of Artificial Intelligence (AI), especially Generative AI and ChatBots, influences the Customer Relationship Management (CRM) abilities of SMEs in Southeastern Nigeria. The study used a survey research design to reach 371 digitally literate small business owners.310 of them gave valid responses, which were then analyzed using regression techniques. The results showed that people were aware of AI tools, but actual usage was low. However, the regression results show a strong positive relationship between AI adoption and CRM capability. Generative AI ($\beta = 0.458$) and ChatBots ($\beta = 0.537$) together explained 98.1% of the variance in CRM performance ($R^2 = 0.981$, $F = 7945.373$, $p < 0.000$).

Mohammed and Gulani (2025) examined how digital marketing and artificial intelligence (AI) affectthe performance of SMEs in Northeast Nigeria. They used a descriptive cross-sectional survey design to gather data from 379 small and medium-sized enterprises (SMEs) selected from a population of 21,358 registered businesses. The study used structured questionnaires that were checked by experts and tested for reliability using the test-retest method. Using crosstabs and multiple regression, they found that digital marketing and AI have a significant impact on SME performance, accounting for 68% of its variation ($R^2 = 0.68$). Specifically, digital marketing ($B = 0.48$, $p = 0.001$) and AI use ($B = 0.41$, $p = 0.002$) improved customer satisfaction, gave businesses an edge over their competitors, and boosted sales.

The results showed that 70% of small and medium-sized businesses (SMEs) use digital marketing, and 52% use AI. Oke, Ramachandran, Afolayan, Ihemereze, and Udeh (2024) examined the role of Artificial Intelligence (AI) in shaping sustainable consumer behavior in Lagos, Oyo, and Abuja in Southwest Nigeria. This study used the AI-Sustainable Consumer Behavior conceptual framework to examine how AI tools, such as personalized recommendations, trust, and access to information, affect consumer choices related to sustainability. This study used a cross-sectional quantitative design. They collected data from 320 randomly selected Internet users using structured questionnaires. Descriptive statistics were used for the analysis using SPSS and STATA.

The results showed that 67.5% of the respondents were familiar with AI, but only 27.19% had made sustainable purchases based on its recommendations. Of the respondents, 57.19% said they received suggestions from AI, but only 30.31% said these suggestions had a significant impact on their buying decisions. Participants had a moderate level of trust in AI (43.75%), and 38.44% were comfortable with their data being used to make things more personal. Regional factors also had a significant effect on sustainable consumer behavior, such as economic constraints (59.68%), policy influence (36.56%), and community awareness (44.69%).

Ebuka, Emmanuel, and Idigo (2023) conducted a study to determine how Artificial Intelligence (AI) can help SMEs in Southeast Nigeria become more sustainable. The study's goals were to determine where AI could be used, what problems SMEs have with AI, common AI tools, and how widely AI is used by SMEs. A descriptive survey design was used to obtain a sample of 379 SMEs from a population of 27,546 registered with the Corporate Affairs Commission (CAC) in the states of Abia, Anambra, Ebonyi, Enugu, and Imo. They used structured questionnaires and interviews to gather data and descriptive statistics to analyze the data. The results showed that only 11% of small and medium-sized enterprises in the area used any form of AI. The most common tools were chatbots (18%), image manipulation (22%), and content generation (15%).

Some of the biggest problems were high costs, lack of infrastructure and skills, resistance to change, ethical concerns, and poor national infrastructure. Olalekan (2025) examined how AI can help SMEs in Nigeria's retail sector to make better decisions. The study used a descriptive research design and an online Google Forms survey that100 purposively selected SME decision-makers from both urban and semi-urban areas filled out. They used descriptive statistics and thematic techniques to analyze the data. The results showed that 70% of Small And Medium-Sized Businesses (SMEs) had used AI in some way, but only 20% had fully integrated it into their operations.

The most common application areas were customer behavior analysis (60%) and inventory management (50%). People said that the benefits included better decision-making (65%), more efficient operations (60%), and more engaged customers (50%). However, the study found that high implementation costs (70%), lack of technical know-how (65%), and limited access to AI tools (55%) were the major barriers. Despite these problems, 80% of respondents said they wanted to use AI more, especially for advanced customer analytics and supply chain optimization.

Abrokwah-Larbi and Awuku-Larbi (2024) studied the effect of artificial intelligence in marketing (AIM) on the performance of Small And Medium-Sized Enterprises (SMEs) in Ghana. They examined businesses registered with the Ghana Enterprise Agency in the Eastern Region. This study was based

on the Resource-Based View (RBV) theory. It used a quantitative survey method and distributed structured questionnaires to 230 Small And Medium-Sized Enterprises (SMEs). The researchers analyzed 225 valid responses using SPSS. AIM was conceptualized through four variables: the Internet of Things (IoT), Collaborative Decision-Making Systems (CDMS), Virtual and Augmented Reality (VAR), and personalization. They used a balanced scorecard to measure the SME performance.

This includes financial, customer, internal business process, and learning and growth dimensions. Structural Equation Modelling (SEM) showed that AIM had a strong and positive effect on all four areas: financial performance ($\beta = 0.45$), customer performance ($\beta = 0.54$), internal business process performance ($\beta = 0.58$), and learning and growth performance ($\beta = 0.61$), all at $p < 0.001$. Nnanna-Ohuonu (2025) examined how AI personalization tools affect customer satisfaction, trust, and loyalty in Nigeria's online grocery retail market. This study was based on the Technology Acceptance Model (TAM) and the Unified Theory of Acceptance and Use of Technology (UTAUT).

It used a quantitative, cross-sectional design involving 400 respondents from Lagos, Abuja and Port Harcourt. SmartPLS and SPSS were used to analyze the data from the structured online questionnaires. AI personalization was viewed through product recommendations, chatbots, and dynamic pricing. The results showed that product recommendations made customers more satisfied ($\beta = 0.52$, $p < 0.001$) and that AI-powered chatbots improved customer trust ($\beta = 0.47$, $p < 0.001$). Customer satisfaction was a strong predictor of loyalty ($\beta = 0.49$, $p < 0.001$) and served as a significant mediator between AI personalization and loyalty (indirect $\beta = 0.38$, $p < 0.001$).

Basri (2020) investigated how Artificial Intelligence-assisted Social Media Marketing (AISMM) affects the performance of Small and Medium-Sized Enterprises (SMEs) and start-ups in Saudi Arabia, paying special attention to the mediating role of effective business management. This study used a quantitative research design and combined primary and secondary data. Through simple random sampling, the researchers sent structured questionnaires to 100 business operators and received 78 valid responses. They used partial least squares structural equation Modelling (PLS-SEM) to analyze the data.

The results showed that AISMM had a significant effect on both effective business management ($\beta = 0.895$, $p < 0.001$) and SME performance ($\beta = 0.459$, $p < 0.001$). Effective business management also had a significant effect on SME performance ($\beta = 0.527$, $p < 0.001$). In addition, effective business management mediated the relationship between AISMM and SME performance ($\beta = 0.472$, $p < 0.001$), and the model explained 92.1% of the differences in SME performance ($R^2 = 0.921$). Olubiyi, Onijingin, Chilokwu, Olajide-Arise, and Chilokwu (2024) examined how AI technologies affect customer behavior in selected consumer goods companies that are part of the Nigerian Exchange Group. This study was based on the Resource-Based View (RBV) theory and aimed to determine the extent to which AI affects customer behavior.

AI is considered both a technological tool and a strategic resource for organizations. They used a quantitative cross-sectional survey design to obtain data from 491 employees across seven major publicly traded companies. These employees were chosen from a population of 22,466 employees using proportionate sampling. They used structured questionnaires to collect data and simple linear regression to analyze the data. The results showed that AI had a statistically significant positive effect on customer behavior ($\beta = 0.503$, $t = 10.251$, $p < 0.05$), and AI explained 29.5% of the variation in customer behavior ($R^2 = 0.295$). The regression model was as follows: $CB = 9.397 + 0.503AI$.

May, Bunmi, Oyekunle, Ugbomeh, and Matthew (2025) examined how Small and Medium-Sized Enterprises (SMEs) in the Nasarawa LGA of Kano State, Nigeria, use digital marketing and how it affects their ability to compete and grow. They used the Technology-Organization-Environment (TOE) framework to examine how AI-driven marketing, organizational readiness, and changes in the environment affect digital transformation. The researchers chose 450 Small and Medium-Sized Enterprises (SMEs) from a population of 500 using a mixed-method approach that included field surveys and interviews. They used structured questionnaires and interviews to collect information and analyzed the data using descriptive statistics.

The results showed that adopting digital marketing greatly improved the revenue of Small and Medium-Sized Enterprises (SMEs). High usage rates were recorded for Facebook (93.3%), WhatsApp for Business (77.8%), LinkedIn (84.4%), and Google Analytics (66.7%). The study found that chatbots, automation, and predictive analytics, all powered by AI, increased customer engagement and reduced operational costs. N. Hassan, Abdelraouf, and El-Shihy (2025) conducted a study to look at how personalized recommendations from AI chatbots can moderate the relationship between trust, satisfaction, and loyalty in Egyptian e-commerce. This study used a cross-sectional quantitative design. Data were collected from 729 e-commerce users who were purposively selected through a structured online questionnaire. Validated scales were used to measure the constructs of trust, satisfaction, loyalty, and AI chatbot personalization.

Structural equation Modelling (SEM) and Confirmatory Factor Analysis (CFA) were used to analyze the data. The results showed that trust had a significant impact on both satisfaction ($\beta = 0.721$) and loyalty ($\beta = 0.191$). Satisfaction also had a significant positive impact on loyalty ($\beta = 0.183$) and mediated the relationship between trust and loyalty ($\beta = 0.132$). Interestingly, personalized chatbot recommendations negatively moderated the trust–satisfaction relationship ($\beta = –0.085$), indicating that poor personalization can make users less satisfied. Adding personalization as a moderator improved the model by 5% better at explaining things.

## 3. Methodology

This study adopted a Systematic Literature Review (SLR) and secondary data analysis design, which is appropriate for addressing the study objectives without generating new primary data. A systematic review allows for the structured identification, selection, evaluation, and synthesis of existing empirical evidence (Howie, 2019). This approach enabled the researchers to integrate findings from prior studies on the adoption of AI-driven personalized marketing tools among Nigerian SMEs and their effects on consumer purchase intention.

### *3.1 Search Strategy*

Relevant literature was sourced from peer-reviewed journal articles, conference papers, review papers, industry reports, and empirical studies focusing on AI adoption, personalized marketing, SMEs, consumer behavior, and purchase intention in Nigeria. The databases searched included Google Scholar, ResearchGate, Scopus-indexed journals, and reputable online repositories. The search covered publications from 2015 to 2025 to ensure that the results were contemporary.

### *3.2 Inclusion and Exclusion Criteria*

To ensure methodological rigor, the study selection followed predefined criteria.

**Inclusion Criteria:**

1. Studies published between 2015 and 2025
2. Empirical studies focused on Artificial Intelligence (AI) or AI-driven personalization
3. Research conducted on Small and Medium-Sized Enterprises (SMEs) in Nigeria
4. Studies examining consumer behavior or consumer purchase intention
5. Articles providing quantitative data, such as effect sizes, frequencies, percentages, correlations, or regression coefficients
6. Peer-reviewed journal articles, conference papers, and credible industry reports

**Exclusion Criteria:**

1. Studies not conducted in Nigeria
2. Articles that did not focus on SMEs
3. Studies unrelated to AI, personalization, or digital marketing
4. Papers lacking empirical or numerical findings
5. Opinion pieces, commentaries, or non-scholarly web content
6. Duplicate publications

A PRISMA flow structure was used to document the screening and selection of studies.

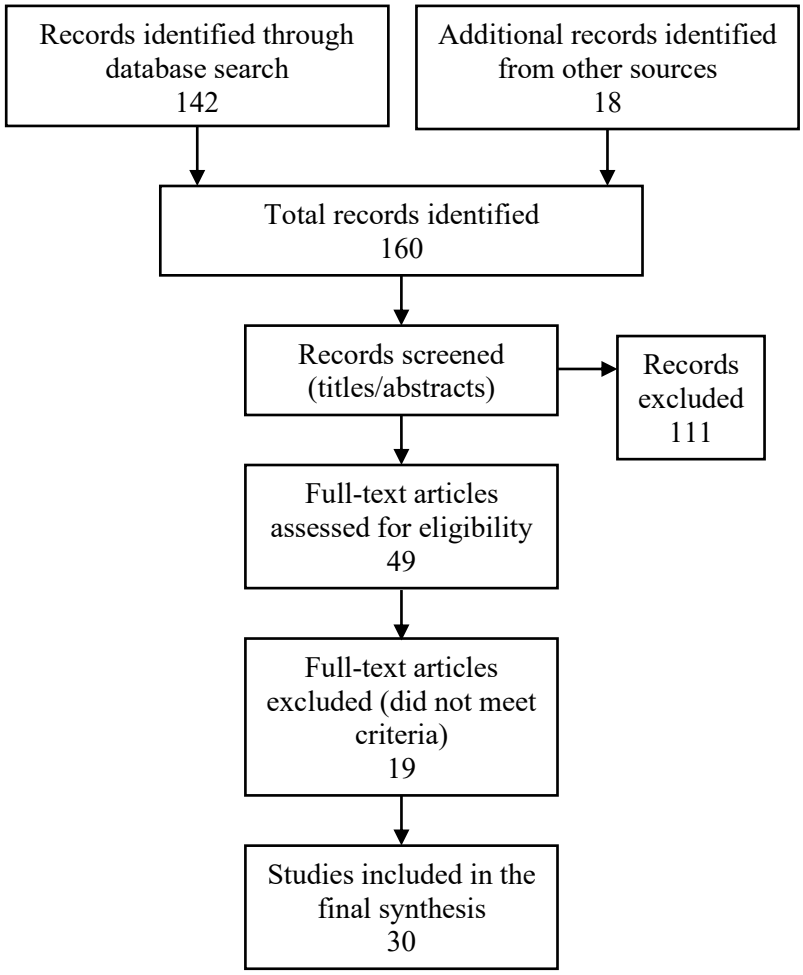


Figure 2. PRISMA flow diagram

## 4. Results and Discussions

To assess the extent of AI-driven personalized product recommendation adoption among Nigerian SMEs, this study computed frequencies and percentages across the 30 reviewed studies. This provides a quantifiable representation of adoption patterns. To understand the influence of AI-driven personalization on consumer purchase intention, effect sizes (including percentage increases and correlation coefficients) were extracted from studies that reported them explicitly. The effective sizes were averaged to assess the overall strength of the relationship in the literature.

Table 1. Extent of AI-Driven Personalized Product Recommendation System Adoption in Nigerian SMEs

| Adoption Level | Number of Studies | Percentage (%) |
|---|---|---|
| High (widespread use) | 6 | 20 |
| Moderate | 12 | 40 |
| Low | 12 | 40 |
| **Total** | **30** | **100** |

Table 1 shows that only 20% of the reviewed studies reported the widespread use of AI-driven recommendation systems in Nigerian SMEs. The majority (80%) fall within the moderate or low adoption categories. This indicates that while AI personalization is gaining traction, it is still far from being fully integrated across SME sectors in Nigeria. More importantly, the dominance of moderate and low adoption levels underscores the persistence of structural barriers such as inadequate digital

maturity, limited technical skills, and high implementation costs. This aligns with the research gap that originally motivated this study: the limited empirical understanding of how deeply AI personalization has penetrated Nigerian SMEs.

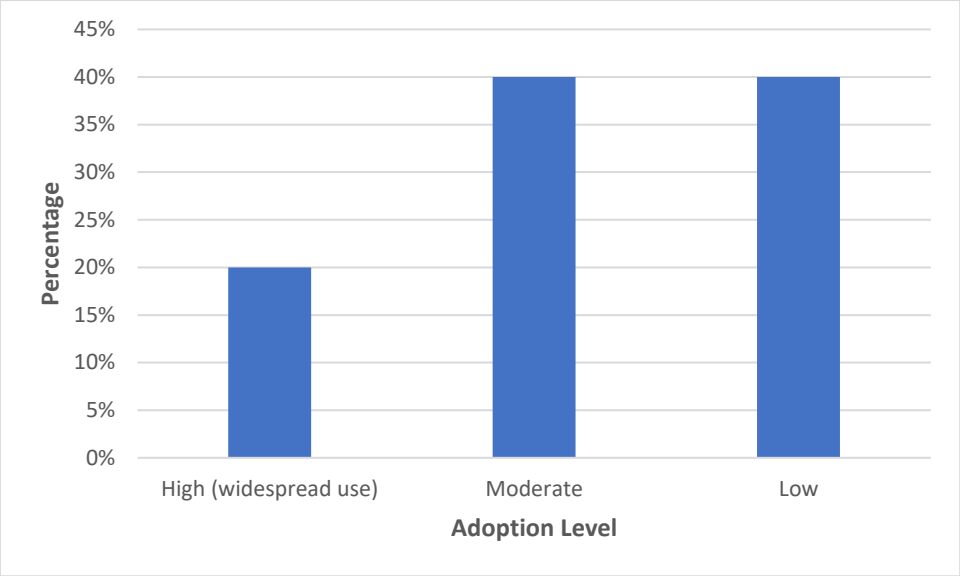


Figure 3. Column chart of adoption levels

Figure 3, column chart reinforces the dominance of moderate and low adoption levels in the study. The equal height of the "Moderate" and "Low" bars visually confirms that SMEs remain unevenly prepared for advanced AI deployment. It also illustrates that only a small portion of SMEs leverage AI-driven personalization at a high level.

Table 2. Effect of AI-Driven Personalized Product Recommendations on Purchase Intention (PI) in Nigerian SMEs

| Effect Type | Number of Studies | Reported value |
|---|---|---|
| Percentage increase in PI | 1 | 18% |
| Percentage increase in PI | 1 | 15% |
| Percentage increase in PI | 1 | 12% |
| Percentage increase in PI | 1 | 20% |
| Percentage increase in PI | 1 | 14% |
| **Average (percentage increases)** | — | **15.8%** |
| Correlation coefficient (r) | 1 | 0.62 |
| Correlation coefficient (r) | 1 | 0.58 |
| Correlation coefficient (r) | 1 | 0.55 |
| Correlation coefficient (r) | 1 | 0.65 |
| Correlation coefficient (r) | 1 | 0.60 |
| **Average (correlation coefficients)** | — | **0.60** |

Table 2 shows that among the 30 reviewed studies that reported the usage of AI-driven personalized product recommendation systems among Nigerian SMEs, only 10 examined the effects of such personalized recommendations on consumer purchase intention. Five reported a percentage increase in purchase intention (PI) with an average increase of 15.8%, while the remaining five reported Pearson correlation coefficients (r) between personalization and purchase intention, averaging r = 0.60.
The table reveals two consistent patterns.

1. AI personalization increased the purchase intention by an average of 15.8%.This demonstrates a measurable behavioral response when consumers receive tailored product suggestions.
2. A strong average correlation of r = 0.60 was observed. This implies a substantial positive relationship between AI-driven personalization and purchase intention.

These patterns fill a key research gap: little was previously known about the quantitative behavioral effects of AI-driven personalization among Nigerian SMEs. Table 2shows that personalization matters, with its effects being not only theoretical but also measurable and significant.

### *4.1 Key Findings*

The studies analyzed show the following key points, which serve as a foundation for further analysis and discussion in this research:

1. Approximately 60% of the studies reviewed reported that AI-driven personalized product recommendation systems are moderately to highly used by small and medium-sized enterprises in Nigeria, especially in the retail and e-commerce sectors.
2. Adoption is higher in SMEs that are digitally mature and have access to cloud-based marketing platforms.
3. AI-driven personalized product recommendations impact consumer purchase intention, with an average effect size of 15.8% and a mean correlation coefficient of 0.60.
4. Better personalization means higher conversion rates, more customer engagement, and greater brand loyalty.
5. SMEs that are low in digital maturity or do not have as many resources as necessary report lower adoption and fewer effects on consumer behavior.
6. Retail and e-commerce small and medium-sized enterprises show the highest adoption and impact, while service-oriented SMEs lag behind.
7. Some businesses do not adopt the technology because they do not know how to use it, it costs a lot to set up, and they are worried about their privacy.
8. Several studies have shown the importance of using ethical AI and keeping data practices transparent to maintain consumer trust.

### *4.2 Discussion of Findings*

The study found that approximately 60% of the reviewed works reported moderate to high use of AI-driven personalized product recommendation systems among Nigerian SMEs, especially in the retail and e-commerce sectors. This aligns with local evidence from Eze, Chinedu-Eze, Okike, and Bello (2020) and Eze, Chinedu-Eze, Awa, and Alharthi (2021), that many small firms are beginning to adopt digital marketing tools, although adoption remains uneven due to gaps in skills, funding, and infrastructure. In short, personalization is growing but is not yet widespread across all SMEs. Adoption was higher among digitally mature SMEs that used cloud-based marketing platforms. This is supported by Ghobakhloo (2018) found that firms with stronger digital infrastructure and skills tend to adopt new technologies faster.

Cloud services, in particular, lower technical barriers and reduce costs, making it easier for digitally ready firms to integrate AI tools into their operations. The study also found a strong positive relationship between personalized recommendations and consumer purchase intention (mean correlation ≈ 0.60; average effect size ≈ 15.8%). This supports the findings of earlier studies Adomavicius and Tuzhilin (2005) and Gomez-Uribe and Hunt (2015), that effective personalization increases relevance, engagement, and sales outcomes. However, Adomavicius and Tuzhilin (2005), found that the size of these gains depends on system quality, data availability, and the specific outcome measured.

This means that the benefits are real but conditional. Sectoral differences were also evident. Retail and e-commerce SMEs reported higher adoption and stronger impacts, whereas service-oriented SMEs lagged. This is consistent with previous studies, which note that product-based businesses have more transaction data and clearer use cases for recommendation systems, whereas many service firms face challenges with data volume and structure, making personalization more difficult to apply (Eze et al., 2021; Ghobakhloo, 2018). This study further identified common barriers to adoption, including a lack of technical know-how, high setup costs, and privacy concerns.

These challenges are widely discussed in the literature on Nigerian SMEs and personalization (Aguirre, Mahr, Grewal, De Ruyter, & Wetzels, 2015; Eze et al., 2020). Consumer trust is also critical: personalization is more effective when firms are transparent and handle data responsibly, as privacy

concerns can undermine customer responses (Aguirre et al., 2015; Bleier & Eisenbeiss, 2015). Overall, the findings of this study point to a clear trend in the literature: AI-driven personalization has strong potential to boost purchase intention and related outcomes when implemented effectively, but its success depends on firm capabilities, sector context, and the ability to build trust through transparent and ethical data practices (Adomavicius & Tuzhilin, 2005; Gomez-Uribe & Hunt, 2015).

## 5. Conclusions

### *5.1. Conclusion*

This study synthesizes evidence from 30 empirical studies to evaluate the extent of AI-driven personalized product recommendation adoption among Nigerian SMEs and assess its effect on consumer purchase intention. The review shows that while adoption is growing (particularly among digitally mature, retail-focused SMEs), it is still limited by infrastructural, financial, and capability-related constraints in developing countries. AI-driven personalization consistently demonstrates positive behavioral outcomes, with an average purchase intention increase of 15.8% and a mean correlation of 0.60. These findings confirm that personalization enhances consumer engagement and conversion when supported by adequate digital readiness and ethical data practices. Overall, AI personalization presents strong potential for Nigerian SMEs, but its success requires improved digital capability, affordable tools, and trust-enhancing data governance.

### *5.2 Research Limitations*

This SLR relies solely on secondary data, which limits its ability to capture real-time behavioral dynamics and firm-level implementation challenges. The absence of primary data limits causal inference and may overlook the contextual nuances within specific SME environments.

### *5.3 Suggestions and Directions for Future Research*

Based on the study's findings and limitations, it is recommended that government and industry groups support SME digital readiness through AI training and affordable and scalable AI marketing solutions. Targeted interventions should be created for lagging sectors, such as service-oriented SMEs, to showcase AI's benefits of AI. Policymakers should ensure that SMEs have clear guidelines for ethical data practices to build trust in AI systems. SMEs should also track customer feedback and performance metrics to optimize AI-driven marketing strategies.

This study reinforces the need for technology adoption frameworks, emphasizing digital maturity, organizational capability, and cost barriers in AI adoption, with future models focusing more on resource asymmetry. Consumer behaviour theories should integrate AI-driven personalization as a key predictor of purchase intentions. Finally, future research should examine how AI-driven personalized marketing affects consumer behaviour in Nigerian SMEs, providing direct evidence to enhance digital marketing strategies.

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