



EMPLOYEES' PERCEPTIONS OF ARTIFICIAL INTELLIGENCE ADOPTION AND ITS IMPACT ON FINANCIAL PERFORMANCE OF MONEY DEPOSIT BANKS IN NIGERIA

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Abstract

The present study aims at analysing employees' perception about the integration of AI and how it affects the financial performance of MDBs in Nigeria. A structured questionnaire was administered on 293 employees working within five leading commercial banks in Nigeria chosen through purposive sampling technique considering their involvement with AI operations within their organisations. The variables included in the study comprise AI-based fraud detection, operational efficiency and AI adoption. Descriptive statistics and multiple regression analysis were utilized for data analysis. The results show that operational efficiency influenced by AI is highly significant as compared to other factors, indicating the impact of AI in enhancing efficiency through automation, precision and effective decision making. On the other hand, overall adoption of AI exhibits a negative relationship with financial performance reflecting transitional issues, resistance and low level of expertise of workers. Moreover, AI-based fraud detection did not emerge as a strong predictor of financial performance. Overall, the model accounted for 47.3% variation in the dependent variable indicating the explanatory power of 47.3%. In conclusion, while the use of AI technology improves operational efficiency of banks in Nigeria, its financial performance impact remains limited due to organizational readiness and competence issues.

Keywords: Artificial Intelligence; Financial Performance; Operational Efficiency; Fraud Detection

INTRODUCTION

Contemporary corporate organisations, particularly money deposit banks, increasingly adopt artificial intelligence to assist everyday operations and increase organisational performance (Anddison *et al.*, 2023). Such technological integration proves essential to increasing forecasting accuracy, analysing developmental trajectories, and assessing enterprise outcomes. Furthermore, recent technical advancements, particularly in Artificial Intelligence (AI)) have radically transformed various domains, including corporate practices, managerial procedures, governance systems, and public administration. The banking sector is equally influenced by these shifts, as AI continues to reinvent operational structures and service delivery methods (Unuesiri & Adejuwon, 2024). Artificial intelligence, according to Mbachu *et al.* (2024), is a technological capability in which machines do tasks like learning, reasoning, and problem solving that are typically associated with human cognition. AI essentially makes it possible for machines to mimic natural cognitive processes by independently gathering, analysing, and applying knowledge. When a technical system exhibits the capacity to think or act in a manner similar to the human mind, it is recognised as artificial intelligence. The integration of AI and advanced analytics has greatly increased the competitive potential of smaller financial institutions by boosting data-driven decision-making (Mbachu *et al.*, 2024).

Deposit Money Banks (DMBs) in Nigeria are progressively implementing AI-based technologies to support credit scoring, improve fraud detection, automate customer interaction, and simplify accounting and reporting tasks. AI-powered chatbots and digital service tools have improved customer experience and operational speed, while AI-enabled fraud detection tools have decreased false alerts and improved the detection of anomalous transactions, according to empirical studies conducted in Nigeria's banking sector (Nwokoro & Okonkwo, 2023; Udodiugwu, 2024). Despite these developments, acceptance is still inconsistent among banks because of issues like cost, infrastructural limits, and regulatory restrictions. Employee perception is a significant factor influencing AI success in Nigerian DMBs. Adoption of AI is frequently hampered by employees' fears of losing their jobs, worries about algorithmic transparency, low technical proficiency, and opposition to process changes, according to research (Adebayo & Ojo, 2023; Financial Times, 2024). Studies also emphasise that the availability of training, management support, and digital preparedness substantially impacts whether employees adopt AI tools or regard them as dangers (Capgemini, 2024). These perception-related hurdles are particularly prominent in emerging countries such as Nigeria, where digital literacy ranges substantially among institutions.

Scholarly interest in the connection between financial success and AI deployment has grown. Several empirical studies suggest that effective AI integration can boost key financial

indicators such as Return on Assets (RoA), Return on Equity (RoE), and Net Interest Margin (NIM) by reducing fraud losses, lowering operating expenses, and improving risk-based decision-making (Dwikat, 2025; Ikhsan *et al.*, 2025).

Statement of Problem

However, studies emphasise that beneficial financial benefits depend on the depth and quality of AI deployment. Adoption of AI that is superficial or poorly managed might not result in quantifiable financial gains. Although rising interest in AI and banking performance, two fundamental gaps continue in Nigeria. First, current research rarely investigates employees' opinions of AI adoption and how these perceptions influence or align with financial outcomes. Second, most Nigerian research focus on technology deployment or customer outcomes, leaving insufficient evidence on the internal organisational dynamics that affect AI performance. The profitability benefit of AI investments may be overestimated or misconstrued if employee attitudes are not understood (Nwokoro & Okonkwo, 2023).

The primary objective of this study, therefore, is to examine employees' perceptions of AI adoption and evaluate how these perceptions relate to the financial performance of Nigerian DMBs. Specifically, the study investigates

- i. the perception of bank employees on AI adoption in banking operations.
- ii. how AI-driven fraud detection is perceived to influence financial stability in Nigerian banks.
- iii. employees' perception of the impact of AI-based accounting processes on operational efficiency.

The findings will provide insights for bank managers, regulators, and policymakers on how to strengthen AI readiness, improve employee acceptance, and maximize the financial value of AI investments in the Nigerian banking sector.

LITERATURE REVIEW

Artificial Intelligence Concept in Banking

Artificial Intelligence refers to the development of computer systems that can perform tasks that typically require human intelligence, such as learning, problem-solving, decision-making, and pattern recognition. Artificial Intelligence in banking involves the use of technologies like machine learning, natural language processing, robotic process automation, and predictive analytics in improving financial performance, customer satisfaction, and operational efficiency. Osademe (2023) maintains that AI in banking simply means intelligent systems applied to automate processes, analyse large volumes of data, and provide personalized services that change the way conventional banking activities are carried out. The

DMBs in Nigeria apply AI to issues such as fraud, customer service needs, and regulatory compliance, making AI a vital component of the digital revolution in the financial industry.

Other areas of banking operations that apply AI include customer relationship management, fraud detection, assessment of credit risk, and even some accounting procedures. For instance, with AI-powered chatbots and virtual assistants driven by natural language processing, banks can now offer customer support even after hours, which improves the quality of service and eventually reduces operation costs. Recent study noted that Nigerian banks have adopted AI chatbots in enhancing customer satisfaction; an example of this is when it was implemented in Akure, Nigeria. Similarly, machine learning algorithms are employed in finding anomalous patterns in real time to uncover fraudulent transactions, given the importance of such practices in the Nigerian banking industry as cybercrime happens increasingly often. Ben-Enukora *et al.* (2022) believed that such uses have shown how AI can make processes easier and less risky, hence the need for AI in modern banking.

AI increases the efficiency of performing repetitive accounting and financial management tasks, such as financial reporting, transaction reconciliation, and compliance monitoring. According to Benjamin *et al.* (2024), the AI-based accounting systems used in Nigerian DMBs enhance operational efficiency by reducing processing time and errors, particularly in Lagos-based banks. This is facilitated by better decision-making through accurate financial insights obtained from deep learning and predictive analytics by the same systems. In addition, according to a 2024 study published in the European Journal of Accounting, Auditing, and Finance Research, AI's ability to analyze large volumes of data has enhanced credit scoring and underwriting of loans, thus providing banks with a more efficient way of determining creditworthiness. This enhances financial inclusion, which is one of the top issues in the banking industry in Nigeria.

AI's adoption also enhances financial performance of banks through cost optimization and the betterment of revenue streams. For example, AI-driven predictive analytics can help identify cross-selling opportunities and customize products to fulfil customer wants, consequently enhancing profitability for banks. According to Mashizha *et al.*, (2024), AI improves return on assets while reducing fraud-related losses, to the benefit of Nigerian banks in terms of financial performance. A number of variables influence how well AI is integrated, including regulatory frameworks, data quality, and employee training. Nigerian banks have to overcome challenges that impede the adoption of AI, such as limited technical know-how and concerns pertaining to data protection, to fully realize its promise (Vadapalli, 2024).

With AI, banks can remain competitive in a digital environment, and the implementation of AI goes beyond operational efficiency into strategic transformation. AI enhances innovation in

the industry of mobile banking and financial advice services in Nigeria, where the banking industry is one of the key drivers of economic growth. Research by Osademe (2023) indicates that banks increase their investment in AI to achieve regulatory requirements and consumer demand, while the position of AI in the Nigerian DMBs is changing. This agrees with the 2024 ResearchGate study on the impact of AI on operational performance in Nigerian banks, in line with global trends, where AI is transforming banking through data-driven strategies and personalized services.

Notwithstanding its advantages, the two operational and ethical issues raised by the concept of AI in banking include algorithmic prejudice and job displacement. While AI improves corporate operations in Nigerian banks, one study in 2024 in the *European Journal of Accounting, Auditing, and Finance Research* indicated that automation had an adverse impact on labour costs. Such issues, if not handled properly, will need a balanced approach which incorporates investment in technology and upskilling of staff with ethical AI governance. It is by understanding this nuanced role of AI that Nigerian DMBs may use the potential of the element to enhance financial performance against the challenges posed by the adoption challenges of AI in a developing nation.

Banking Ethics Using Artificial Intelligence (AI)

Artificial Intelligence has radically altered the operation of DMBs in Nigeria, from accounting and customer care procedures to fraud detection. While this technology promises appropriate execution, there are ethical issues that ought to be carefully weighed. Recognizing hazards such as prejudice, data breach, and social injustice, AI ethics in banking revolve around values like fairness, transparency, accountability, data privacy, and inclusiveness. Essentially, ethical frameworks balance organizational and societal obligations against technical breakthroughs-the integration of artificial intelligence into financial services that is increasingly becoming a reality in Nigeria. Supported by a broader body of current research, this section examines the major ethical issues surrounding the application of AI in Nigerian banking.

Equity and Algorithmic Prejudice

A key ethical challenge is ensuring that AI systems are fair, particularly in applications that have a direct impact on the financial prospects of consumers, such as credit scores and loan approvals. AI models built using biased historical data could exacerbate economic inequalities in Nigeria, where these are already stark. For instance, they could deny credit requests from low-income applicants or those from rural areas. As of a 2024 study by Adebayo and Ojo, if AI-powered credit assessment tools within Nigerian banks are not designed with

fairness, then they have the potential to heighten biases in socioeconomic status. In an equally related but global perspective, Olowolayemo *et al.* (2023) highlight the importance of techniques for the mitigation of bias, which include fairness-aware algorithms, to ensure fairness in outcomes. In order to temper these risks and remain within the bounds of ethical AI standards, Nigerian banks will need to use inclusive data and conduct regular audits (Vadapalli, 2024).

Explainability and Transparency

The way AI makes decisions should be explainable; otherwise, Nigerian banks risk losing the confidence of clients, staff, and regulators. Very often, artificial intelligence systems used for automated accounting or fraud detection are not explainable and therefore can be considered as uninterpretable "black boxes," given that it is difficult to understand how choices are made. It is common among Nigerian bank clients to distrust the reasoning behind AI-flagged transactions, which could mean a loss of trust in the institution (Ben-Enukora *et al.*, 2022). Explainable AI would engender trust—a crucial ingredient between institutions, especially in the Nigeria regulatory environment, where the Central Bank of Nigeria demands that financial operations must be transparent (Ezeji & Okonkwo, 2021). Ethical AI adoption requires banks to focus on interpretable models and provide clear explanations of AI-driven decisions to improve stakeholder trust.

Security and Privacy of Data

Data privacy thus remains a key ethical issue in AI-driven banking, considering the sensitivity of financial information and increasing incidents of cybercrime in Nigeria. Since AI applications for user profiling and fraud detection require large volumes of data, there are concerns over data misuse and unauthorized access to data. Although AI enhances cybersecurity for banks in Nigeria, weak data protection practices could lead to breaches that will dent consumer trust (Mashizha *et al.* 2024). According to Nwankwo and Udeh (2023) Nigeria's Data Protection Regulation must, therefore, be applied to safeguard customer data. Ethical AI, therefore, requires solid encryption, anonymization techniques, and well-defined processes for permission over data use to preserve privacy while exploiting the potentials of AI.

Responsibility and Regulation Compliance

Accountability ensures that the banks are responsible for the outcomes of their AI systems, which is again very crucial since Nigeria's regulatory environment is changing with every passing day. Most Nigerian banks find it difficult to align AI with CBN regulations, especially on risk management and safety of customers (Vadapalli, 2024). The study conducted

by Oladipo and Afolabi (2022) emphasizes the need for accountability mechanisms that are clearly stated so that oversight committees may be appointed to handle AI activities in case something goes wrong or has unintended consequences. Adoption of ethical AI requires designing processes for auditing AI systems and ensuring their compliance with national laws and international standards, such as those proposed by UNESCO's framework on AI ethics (Olowolayemo *et al.*, 2023).

Impact of Job Displacement on the Workforce

AI-driven automation of banking tasks raises ethical concerns about job loss in Nigeria, where unemployment has been a significant social concern. AI adoption in the Nigerian DMBs reduced labour costs through the automation of accounting and customer service activities, leading to staff lay-offs according to a 2024 study published in the European Journal of Accounting, Auditing and Finance Research (European Journal, 2024). Unrestricted AI adoption can, without reskilling, worsen unemployment. An ethical approach to AI would include plans for re-skilling programmes for staff to move into complementary AI-roles (Benjamin *et al.* 2024). The integration of technology in an ethical manner can be enhanced by staff involvement in training and change management to minimize employees' resistance to change.

Financial Access and Inclusion

In a country like Nigeria, where financial inclusion is a number one priority in banking, AI has an ethical mandate to propagate inclusiveness. For instance, AI-based credit scoring and mobile banking platforms can expand financial services' reach among unbanked populations. Osademe (2023) warns that AI systems may bypass the low-income and rural areas and target the metropolitan, lucrative sectors of the economy. Calls for an inclusive design of AI, which can be sensitive to the disparate socio-economic landscape of Nigeria, to propagate the ideals of financial inclusion (Afolabi *et al.* 2023). Ethics in the adoption of AI call for the creation of algorithms that help marginalized populations while ensuring that such technological advancements bridge rather than widen the economic divide.

Theoretical Review

One of the most important theories to describe the user adoption of information systems and technological breakthroughs is the Technology Adoption Model, created by Davis in 1989. According to the Technology Acceptance Model, a person's intention to use a certain technology is defined by two key factors: perceived usefulness and perceived ease of use. These concepts help explain how banking staff come to form opinions about AI technologies,

which in turn influences how they really use them and how supportive they are of AI-driven projects.

Perceived usefulness is the degree to which a person thinks that using a particular system will enhance their job performance, while perceived ease of use is the degree to which a person believes that using the system would be effortless. The acceptance of AI among banking professionals is likely to increase if they perceive it as something that can help them speed up fraud detection, automate accounting procedures, or reduce transaction errors. However, if the technology is perceived as complicated or a threat to their responsibilities, resistance to adoption may occur even in the face of potential advantages.

Over time, TAM has been extended to include other variables such as Subjective Norms, Job Relevance, and Facilitating Conditions, especially in organizational settings like banks. These extensions have been particularly useful in environments where top management support, staff training, and hierarchies all contribute to deciding on technology solutions. These factors can greatly impact how employees of Nigerian banks view and utilize AI, considering the varying levels of technical abilities and digital literacy.

METHODOLOGY

Research Design

This study uses a descriptive survey research approach to investigate how artificial intelligence (AI) adoption is perceived and how it affects the financial performance of Nigerian money deposit banks. Examining bank employees' perspectives, beliefs, and attitudes on AI applications in fundamental banking domains like fraud detection, operational effectiveness, and profitability is a good fit for the descriptive approach. It is perfect for perception-based research since it enables data to be gathered, arranged, examined, and interpreted without changing any factors.

Population and Sample Size

All of Nigeria's licensed money deposit banks are included in the study's population. At the time this study was conducted, the Central Bank of Nigeria (CBN) regulates more than 20 registered commercial banks. Responses were obtained from the top five (5) commercial banks in Nigeria, also known as the "big five": United Bank for Africa (UBA), FirstBank Holdings, Guarantee Trust Holding Company (GTCO), Zenith Bank, and Access Bank, in order to guarantee data quality and relevance. These organisations were selected because of their sizable clientele, cutting-edge digital infrastructure, and early integration of AI-powered technology into operations and service provision. Three hundred respondents were assessed

across these five banks. This figure was thought to be adequate to provide statistically significant findings and to reflect employee opinions across organisations using sophisticated AI. 293 responses were successfully retrieved and examined following data collection.

Table 1: Sample Distribution according to Banks

Bank Name	Intended Sample	Actual Responses
UBA	60	58
FirstBank Holdings	60	59
GTCO	60	57
Zenith Bank	60	60
Access Bank	60	59
Total	300	293

Source: Researcher's Compilation, 2025

Variables and Measurement

The study examined four major constructs: AI Adoption Perception (AIA), Fraud Detection Perception (FDP), Operational Efficiency Perception (OEP), and Financial Performance Perception (FP). All variables were measured using structured items on a 5-point Likert scale.

Table 2: Variable of Measurement

Variable	Type	Measurement Approach
Financial Performance Perception (FP)	Dependent	Likert scale responses on AI's perceived impact on profitability, risk reduction, and cost efficiency.
AI Adoption Perception (AIA)	Independent	Likert scale responses on AI usage, investment, and integration in banking operations.
Fraud Detection Perception (FDP)	Independent	Responses on AI effectiveness in detecting and preventing fraud.
Operational Efficiency Perception (OEP)	Independent	Responses on AI-driven automation and efficiency improvements.

Source: Researcher's Compilation, 2025

Model Specification

A multiple linear regression model was used in this study to evaluate how views of AI-related aspects affected the perceived financial performance of Nigerian money deposit banks. The model assesses how Fraud Detection (FDP), Operational Efficiency (OEP), and AI

Adoption (AIA) all simultaneously affect financial performance (FP). The following is the regression equation:

$$FP = \beta_0 + \beta_1 AIA + \beta_2 FDP + \beta_3 OEP + \epsilon_i$$

where:

FP = Perceived Financial Performance (Likert scale responses on AI's effect on ROA, ROE, NIM).

AIA = AI Adoption Perception (Likert scale responses on AI usage in banking).

FDP = Perceived Fraud Detection Efficiency (Likert scale responses on fraud prevention).

OEP = Perceived Operational Efficiency (Likert scale responses on automation, cost reduction, etc.).

$\beta_0, \beta_1, \beta_2, \beta_3$ = Model coefficients.

ϵ = Error term.

ANALYSIS AND RESULT

Demographic Profile of Respondents

The demographic features of the respondents offer significant background information when considering the study results, especially regarding the views held by the employees concerning the adoption of AI technologies in banking practices. Several demographic factors, including gender, age, level of education, years of work experience, bank membership, and job role, were analyzed in order to have an overall understanding of the sampling composition. This will assist in evaluating the representation of the respondents and any patterns that might affect their perception of AI adoption and financial performance.

Table 3: Gender of Respondents

Gender	Frequency	Percent
Female	202	68.9
Male	91	31.1
Total	293	100.0

Source: Researcher's Computation with SPSSv26

The gender distribution of the study participants is displayed in Table 3. In total 202 representing 68.9% of the 293 participants were female, and 91 (31.1%) were male. This suggests that there are more female employees in the chosen money deposit institutions or that more women participated in the poll, as it shows a preponderance of female

representation in the sample. The gender gap may have an impact on the study's overall findings, especially if opinions regarding the use of AI in banking operations are influenced by gender.

Table 4: Age of Respondents

Age Group	Frequency	Percent
18 – 25 Years	55	18.8
26 - 35 Years	49	16.7
36 - 45 Years	64	21.8
46 - 55 Years	58	19.8
Above 55 Years	67	22.9
Total	293	100.0

Source: *Researcher's Computation with SPSSv26*

The respondents' age distribution is seen in Table 4. With 67 respondents (22.9%), the largest age group was above 55. Those between the ages of 36 and 45 (21.8%) and 46 and 55 (19.8%) were next in line. 18.8% and 16.7% of the total were in the 18–25 and 26–35 age groups, respectively. According to this distribution, most participants were middle-aged and older, which probably indicates that the workforce had greater experience. Due to their varied degrees of adaptability to new technologies like artificial intelligence and their greater exposure to traditional banking procedures, the preponderance of older respondents may have an impact on how AI adoption is perceived.

Table 5: Educational qualification of Respondents

Educational Qualification	Frequency	Percent
Diploma	48	16.4
Bachelor's	59	20.1
Master's	61	20.8
PhD	67	22.9
Others	58	19.8
Total	293	100.0

Source: *Researcher's Computation with SPSSv26*

The respondents' educational backgrounds are displayed in Table 5. The largest percentage of respondents (22.9%) had a PhD, closely followed by those with a Bachelor's degree (20.1%) and a Master's degree (20.8%). Of the sample, 19.8% of respondents had other

qualifications (such as professional certificates or training), and 16.4% had a diploma. According to the data, more than 63% of respondents had at least a bachelor's degree, indicating that most respondents are highly educated. The respondents' high degree of education may have influenced how they see and comprehend the use of artificial intelligence and its effects on financial performance and banking operations.

Table 6: Respondent's years of experience

Years of Experience	Frequency	Percent
Less than 1 year	60	20.5
1 – 5 years	83	28.3
6 – 10 years	69	23.5
Above 10 years	81	27.6
Total	293	100.0

Source: Researcher's Computation with SPSSv26

The years of experience that the respondents have in the banking industry are shown in Table 6. Those with 1–5 years of experience made up the largest percentage of responses (83, or 28.3%), closely followed by those with more than 10 years (81, or 27.6%). Twenty-five percent of respondents had less than one year of experience, whilst 23.5% had six to ten years. The data is more reliable because of this distribution, which shows a balanced mix of highly experienced and early-career experts. Deeper understanding of how long-term exposure to banking procedures affects perceptions of AI adoption and its impact on financial performance may also be possible due to the presence of a sizable number of seasoned personnel.

Table 7: Respondents Bank

Banks	Frequency	Percent
UBA	58	19.8
GTCO	57	19.5
FirstBank Holdings	59	20.1
Access Bank	59	20.1
Zenith Bank	60	20.5
Total	293	100.0

Source: Researcher's Computation with SPSSv26

The respondents' distribution among the five Nigerian money deposit banks that were chosen is shown in Table 7. With 60 (20.5%) responses, Zenith Bank had the most, closely followed by FirstBank Holdings and Access Bank, each with 59 (20.1%). The contributions from UBA and GTCO were 58 (19.8%) and 57 (19.5%), respectively. The proportionate sample approach used in accordance with the market size and accessibility of each bank is shown in this comparatively even distribution. A comprehensive picture of AI adoption and its perceived effect on financial performance across the main participants in Nigeria's banking industry is provided by the balanced representation, which guarantees that the study's conclusions are not biased by any one institution.

Table 8: Respondents position in their various banks

Job Position	Frequency	Percent
Accountant	62	21.2
IT Personnel	68	23.2
Bank Manager	54	18.4
Financial Analyst	48	16.4
Other	61	20.8
Total	293	100.0

Source: Researcher's Computation with SPSSv26

The respondents' positions within their respective banks are shown in Table 8. Accountants (62 respondents, 21.2%), IT personnel (68 respondents, 23.2%), and those in other roles (61 respondents, 20.8%) were the next most common categories of participation. 18.4% of the sample consisted of bank managers, and 16.4% consisted of financial analysts. This distribution across various occupations guarantees that the study will include a range of perspectives on the use of AI. Because AI-driven automation and analytics have a direct impact on these professions, the significance of accountants and IT staff is especially pertinent. Their viewpoints add to a comprehensive understanding of how AI affects financial performance and operations in the banking industry, as do those of strategic and analytical positions like bank managers and financial analysts.

Descriptive Statistics

This section provides a picture of how the participants view AI adoption and its aspects. The descriptive data summary shows general views, degree of consensus on the issues, and the variation in views by providing frequency counts, percentage distribution, means, and

standard deviations of the responses. This provides the basis for the inferential analysis that follows to determine the participants' perception towards AI practices in the banks.

Table 9: Descriptive statistics on the perception on AI Adoption in Banking

Perceptions	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean	Std.
My bank has integrated AI into its accounting and financial processes.	38 (13.0%)	47 (16.0%)	69 (23.5%)	50 (17.1%)	89 (30.4%)	3.12	1.460
AI adoption is improving efficiency in financial reporting.	50 (17.1%)	51 (17.4%)	56 (19.1%)	45 (15.4%)	91 (31.1%)	3.26	1.481
AI-powered solutions are widely used in fraud detection within my bank.	38 (13.0%)	47 (16.0%)	69 (23.5%)	50 (17.1%)	89 (30.4%)	3.36	1.394
The bank management is supportive of AI adoption in banking operations.	42 (14.2%)	35 (11.9%)	40 (13.7%)	38 (13.0%)	138 (47.1%)	3.67	1.507
AI technology is reducing errors in financial transactions.	44 (15.0%)	34 (11.6%)	36 (12.3%)	47 (16.0%)	132 (45.1%)	3.65	1.507

Source: Researcher's Computation with SPSSv26

Descriptive statistics on respondents' opinions of AI adoption in banking are shown in Table 9, which shows largely favourable sentiments. Nearly half of the respondents strongly agreed with the statements on management support for AI adoption (Mean = 3.67, SD = 1.507) and the importance of AI in minimising financial transaction errors (Mean = 3.65, SD = 1.507), which had the greatest levels of agreement. Additionally, respondents concurred that AI is increasing the effectiveness of financial reporting (Mean = 3.26, SD = 1.481) and is commonly employed for fraud detection (Mean = 3.36, SD = 1.394). The overall mean (3.12, SD = 1.460) still tends towards agreement, despite the fact that opinions on the incorporation of AI into accounting and financial operations were more diverse. These results imply that although the use of AI in banking is still developing, most people believe it to be advantageous, especially for operational support and mistake reduction.

Table 10: Descriptive statistics on perception
on AI and Fraud Detection

Perceptions	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean	Std.
AI has significantly improved fraud detection and prevention in my bank.	41 (14.0%)	36 (12.3%)	36 (12.3%)	46 (15.7%)	134 (45.7%)	3.67	1.493
AI helps in identifying suspicious transactions faster than traditional methods.	40 (13.7%)	38 (13.0%)	29 (9.9%)	46 (15.7%)	140 (47.8%)	3.71	1.499
AI-powered fraud detection systems have reduced financial losses in my bank.	44 (15.0%)	44 (15.0%)	41 (14.0%)	37 (12.6%)	127 (43.3%)	3.54	1.525
Customers trust AI-driven fraud detection systems.	34 (11.6%)	52 (17.7%)	34 (11.6%)	49 (16.7%)	124 (42.3%)	3.60	1.464
AI implementation in fraud detection still faces resistance from employees.	38 (13.0%)	37 (12.6%)	38 (13.0%)	41 (14.0%)	139 (47.4%)	3.70	1.482

Source: Researcher's Computation with SPSSv26

Descriptive statistics on bank respondents' opinions of AI and fraud detection are shown in Table 10. The results show largely positive sentiments, with 47.8% strongly agreeing (mean = 3.71) that AI makes it possible to identify suspicious transactions more quickly than with conventional techniques. Similarly, while 14.0% strongly disagreed, indicating some scepticism, 45.7% strongly agreed that AI considerably enhances fraud detection (mean = 3.67). Respondents recognised lower financial losses (mean = 3.54) and increased consumer trust in AI systems (mean = 3.60), even though 47.4% strongly agreed that staff opposition to AI implementation exists (mean = 3.70). Mixed perceptions are highlighted by the comparatively high standard deviations (1.464–1.525), which reflect response variability. Overall, even though AI is thought to be useful for detecting fraud, issues like opposition and conflicting viewpoints still exist.

Table 11: Descriptive Statistics on perception
on AI and Operational Efficiency

Perceptions	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean	Std.
AI has automated many repetitive accounting tasks in my bank.	46 (15.7%)	33 (11.3%)	34 (11.6%)	42 (14.3%)	138 (47.1%)	3.66	1.530
AI enhances the accuracy of financial analysis and decision-making.	38 (13.0%)	22 (7.5%)	46 (15.7%)	39 (13.3%)	148 (50.5%)	3.81	1.449
AI reduces the cost of manual accounting processes.	32 (10.9%)	39 (13.3%)	35 (11.9%)	45 (15.4%)	142 (48.5%)	3.77	1.440
AI adoption has improved the speed of processing financial transactions.	39 (13.3%)	36 (12.3%)	49 (16.7%)	51 (17.4%)	118 (40.3%)	3.59	1.449
Employees require additional training to fully utilize AI in banking operations.	50 (17.1%)	32 (10.9%)	41 (14.0%)	44 (15.0%)	126 (43.0%)	3.56	1.535

Source: Researcher's Computation with SPSSv26

Descriptive statistics on banking operational efficiency and AI perceptions are shown in Table 11. 50.5% of respondents strongly agreed that AI improves the accuracy of financial analysis (mean = 3.81), and they also acknowledged that AI lowers costs associated with manual operations (mean = 3.77). 40.3% acknowledged faster transaction processing (mean = 3.59) and nearly half (47.1%) strongly agreed that AI automates repetitious accounting chores (mean = 3.66). There appears to be a skills gap, nevertheless, since 43.0% strongly agreed that workers need additional training to use AI effectively (mean = 3.56). There are differing views, as evidenced by the comparatively high standard deviations (1.440–1.535), which show both hope for AI's efficiency improvements and understanding of implementation issues like training requirements. Although AI is generally seen as advantageous, more workforce adaption is needed.

Table 12: Descriptive Statistics on perception AI and Financial Performance Perception

Perceptions	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean	Std.
AI adoption has contributed to an increase in my bank's profitability.	41 (14.0%)	40 (13.7%)	43 (14.7%)	43 (14.7%)	126 (43.0%)	3.59	1.491
AI implementation has led to a reduction in operational costs.	41 (14.0%)	46 (15.7%)	38 (13.0%)	51 (17.4%)	117 (39.9%)	3.54	1.486
AI has improved customer satisfaction by enhancing banking services.	44 (15.0%)	38 (13.0%)	40 (13.75)	40 (13.7%)	131 (44.7%)	3.60	1.517
The long-term benefits of AI outweigh its initial cost.	45 (15.4%)	42 (14.3%)	42 (14.3%)	41 (14.0%)	123 (42.0%)	3.53	1.518
AI adoption gives my bank a competitive advantage over others.	44 (15.0%)	51 (17.4%)	43 (14.7%)	59 (20.1%)	96 (32.8%)	3.38	1.466

Source: Researcher's Computation with SPSSv26

The findings show that people's perceptions of AI's influence on banking's financial performance are largely favourable but cautious. Notably, 39.9% strongly agreed that AI adoption decreased operating costs (mean = 3.54) and 43.0% strongly agreed that it boosted profitability (mean = 3.59). Furthermore, 44.7% of respondents strongly agreed that AI increased customer satisfaction (mean = 3.60), indicating that AI improves the quality of services. On the question of whether AI gives a competitive edge, however, attitudes were more split, with only 32.8% strongly agreeing (mean = 3.38). Despite implementation costs, a noteworthy 42.0% strongly agreed that AI's long-term benefits transcend its initial costs (mean = 3.53), confirming its perceived value. The replies' moderate variety is reflected in the standard deviations (1.466–1.518), which show varying degrees of confidence in AI's financial impact. Overall, even though AI is thought to improve customer satisfaction, cost effectiveness, and profitability, its contribution to competitive differentiation is still unclear.

Reliability Test Results

The construct-wise reliability analysis was conducted using Cronbach's Alpha to assess the internal consistency of each of the four measurement constructs, with results presented in Table 13. The Aggregate Scale alpha value across all 25 items was 0.817, indicating good

internal consistency for the instrument as a whole and confirming that the questionnaire, taken together, reliably measures the underlying constructs under investigation.

Table 13: Construct-wise Reliability Statistics

Construct	N of Items	Cronbach's Alpha	Interpretation
AI Adoption Perception (AIA)	5	0.486	Marginally Acceptable
Fraud Detection Perception (FDP)	5	0.753	Acceptable
Operational Efficiency Perception (OEP)	5	0.700	Acceptable
Financial Performance Perception (FP)	5	0.617	Questionable

Source: Researcher's Computation with SPSSv26

At the construct level, the Fraud Detection Perception (FDP) scale returned the highest alpha value ($\alpha = 0.753$), reflecting acceptable internal consistency, while the Operational Efficiency Perception (OEP) construct met the minimum acceptable threshold exactly ($\alpha = 0.700$), as recommended by Nunnally (1978). The Financial Performance Perception (FP) construct returned an alpha of 0.617, which falls within the "questionable" range but remains within bounds considered tolerable in exploratory social science research, particularly where constructs capture complex, multidimensional phenomena (George & Mallery, 2003). The AI Adoption Perception (AIA) construct recorded the lowest alpha value ($\alpha = 0.486$), which falls below the conventional 0.70 threshold. This may be attributed to the heterogeneous nature of the items within this construct, reflecting the diversity of employees' experiences and varying levels of AI exposure across the sampled banks. Notwithstanding this limitation, the strong overall alpha of 0.817 suggests that the instrument, viewed holistically, possesses adequate reliability for the purposes of this study.

Regression Model Output and Hypothesis Result

The goodness-of-fit of a regression model examining the connection between AI adoption and its perceived impact (such as fraud detection, operational efficiency, or financial performance) is evaluated in the Model Summary table.

Table 14: Model Summary

R	R ²	Adjusted R ²	Std. Error of the Estimate
0.688	0.473	0.467	0.686

Source: Researcher's Computation with SPSSv26

The dependent variable (like financial performance or efficiency) and the independent variable (like AI adoption) have a high positive association (68.8%), according to the multiple correlation coefficient. According to the coefficient of determination, the model explains 47.3% of the variance in the dependent variable. This implies a moderate explanatory power, indicating that the adoption of AI has a significant but not all-encompassing impact on results. Std. Estimate Error (0.686).

Table 15: ANOVA Table for overall Significance

	Sum of Squares	df	Mean Square	F-Stat	P-value
Regression	121.982	3	40.661	86.351	0.000
Residual	136.084	289	0.471		
Total	258.066	292			

Source: Researcher's Computation with SPSSv26

The overall statistical significance of the regression model in understanding the connection between AI adoption and its perceived effects (such fraud detection, operational efficiency, or financial success) is evaluated by the ANOVA table. The model is very significant, as indicated by the incredibly low p-value (0.000) and the F-statistic of 86.351. This indicates that there is substantial proof that the dependent variable is significantly impacted by at least one of the model's predictor variables. The model's explanation of variance is significant in comparison to the unexplained variance, as further supported by the big F-Stat value in relation to the residual mean square.

Table 16: Coefficient Estimate

	β	Std. Error	t-Stat	P-value
(Constant)	1.617	0.204	7.938	0.000
AI Adoption in Banking	-0.185	0.058	-3.182	0.002
AI and Fraud Detection	0.048	0.051	0.943	0.346
AI and Operational Efficiency	0.644	0.045	14.247	0.000

Source: Researcher's Computation with SPSSv26

The table of regression coefficients sheds light on how each predictor variable contributes to the explanation of the dependent variable, which is most often a result pertaining to banking performance or perception. When all predictors are zero, the constant term (1.617), which indicates a baseline level of the result, is statistically significant ($p < 0.001$).

AI Adoption in Banking, AI and Fraud Detection, and AI and Operational Efficiency were the three main predictors that were examined. The findings show that there is the largest positive coefficient between AI and operational efficiency and the outcome (Beta = 0.644, $p < 0.001$), indicating that higher performance is closely linked to increases in operational efficiency brought about by AI. AI Adoption in Banking, on the other hand, has a weak but statistically significant inverse connection (Beta = -0.166, $p = 0.002$), indicating that initial opposition or implementation issues may impede wider AI adoption. The AI and Fraud Detection variable has no significant effect on the result ($p = 0.346$), suggesting that it has no bearing on the model's conclusion.

Hence, the model is as follows:

$$FP = 1.617 - 0.185AIA + 0.048FDP + 0.644OEP$$

DISCUSSION ON FINDINGS

The findings of this study provide evidence that employees perceive AI adoption to be a significant driver of operational efficiency and enhanced financial performance in Nigerian money deposit banks. This strong positive impact of AI-enabled operational efficiency on perceived financial outcomes is supported by empirical studies from around the world and in Africa, which establish that automation, increased precision, and superior transaction-processing speed significantly enhance productivity and profitability in banks (Dwikat, 2025; Ikhsan *et al.*, 2025). The findings reaffirm the positions argued in literature that AI's most immediate and observable value is within automating routine processes, reducing human fallibility, and speeding up decision-making (McKinsey & Company, 2021). This implies, therefore, that the findings support the notion that operational efficiency is the most visible conduit through which AI meaningfully adds to the financial performance of banks within emerging-market contexts.

However, the study also shows a negative coefficient for general AI adoption, indicating hesitation or difficulties in early usage. This contradicts literature stating that in technologically advanced banking environments, there is a high acceptance of AI (Capgemini & Efma, 2022), but supports works from Nigeria where resistance to change, fear of job elimination, and low digital literacy are some reasons why there is a low adoption level (Adebayo & Ojo, 2023; Nwokoro & Okonkwo, 2023). Finally, the insignificance of AI-driven fraud detection goes contrary to global evidence where AI has considerably reduced fraudulent activities (Unuesiri & Adejuwon, 2024). Such divergence might reflect factors like limited staff exposure to fraud-fighting systems, lack of training, or time lags between fraud-analytics deployment and measurable financial outcomes. These contrasting interpretations suggest that while Nigerian

banks may have AI tools, the depth to which these are integrated into their operations certainly varies across and between departments. Overall, the results show that AI's financial benefits are not based solely on technological investment, but also on the organizational readiness and acceptance of employees. The demographic composition of the respondents, especially the high share of older and highly experienced employees, may have influenced perceptions in a manner which is consistent with studies showing workforce characteristics shape attitudes toward digital transformation (Financial Times, 2024). The findings therefore reinforce both theoretical expectations from TAM and empirical evidence across emerging markets: that perceived usefulness, through operational efficiency, engenders positive attitudes toward AI, and that perceived ease of use is constrained by low levels of training and limited exposure. AI's financial benefit can only be maximized when Nigerian banks invest in the upskilling of their staff, while also bolstering change-management strategies and making the approach to the adopting of AI consonant with local institutional realities. This will be an integrated approach through which sustainable improvements in profitability, ROA, ROE, and all other forms of financial competitiveness are achieved.

CONCLUSION

The findings of this study highlight the complex relationship between artificial intelligence (AI) adoption and financial performance among Nigerian money deposit banks. While AI-driven operational efficiency demonstrated a strong positive effect on financial outcomes, the negative association between general AI adoption and perceived performance suggests that institutions may be experiencing transitional challenges as they seek to scale AI across diverse functions. The non-significant effect of AI-based fraud detection further indicates that certain AI applications have yet to yield visible financial benefits at the employee level, likely due to limited staff exposure, uneven deployment, or delayed impact on key metrics. These dynamics appear closely tied to organisational culture and workforce demographics, particularly the high proportion of older and experienced employees who may be more cautious toward technological change. Although the model showed good reliability and explanatory power, the presence of unexplained variance implies that factors such as leadership readiness, regulatory conditions, and customer-driven outcomes also shape AI's effectiveness. Overall, the study portrays Nigerian banks as being at a significant stage of digital transition one in which operational gains from AI are evident, yet broader implementation remains constrained by human, institutional, and contextual realities. A nuanced, context-sensitive approach to AI integration is therefore essential to converting early operational benefits into sustained financial performance.

This study, while providing meaningful insights into employees' perceptions of AI adoption and its relationship with financial performance in Nigerian money deposit banks, is not without limitations that open avenues for further inquiry. First, future studies should adopt longitudinal research designs to track how employee perceptions of AI evolve over time as banks deepen their AI integration, thereby capturing dynamic rather than static relationships. Second, researchers are encouraged to extend the scope beyond the "big five" commercial banks to include microfinance banks, development finance institutions, and other deposit-taking entities in Nigeria, which may reflect different levels of AI readiness and distinct employee experiences. Third, future studies could incorporate objective financial performance data (such as audited Return on Assets (ROA), Return on Equity (ROE), and Net Interest Margin (NIM) figures) rather than relying solely on employees' perceptions, so as to establish more concrete links between AI adoption and actual financial outcomes. Fourth, comparative studies across multiple African countries would be valuable in understanding how contextual factors such as regulatory environments, digital infrastructure, and cultural attitudes toward technology mediate the AI–performance relationship. Finally, future research may investigate the moderating roles of leadership style, organisational culture, and employee digital literacy on the relationship between AI adoption and financial performance, given the evidence in this study that human and institutional factors significantly condition AI's impact.

RECOMMENDATIONS

To maximise the financial and operational benefits of AI adoption, Nigerian money deposit banks should prioritise comprehensive change management strategies that address employee resistance (particularly among older or long-tenured staff) through continuous sensitisation, mentorship programs, and regular perception assessments. Targeted training is essential and should include advanced technical development for IT and accounting personnel as well as foundational digital literacy for less technologically proficient workers. A phased implementation model is recommended, beginning with high-impact operational efficiency tools before extending to fraud analytics and customer-facing AI solutions, accompanied by clear performance benchmarks and transparent reporting structures. Banks should also strengthen AI governance frameworks by establishing ethical oversight committees and compliance guidelines to ensure responsible deployment and protect consumer trust. Strategic collaboration with fintechs, academic partners, and regulatory bodies will further support access to expertise and best practices. Finally, banks should adopt a culture of continuous improvement by using pilot projects, A/B testing, and iterative evaluation to refine AI systems over time, ensuring long-term

financial sustainability and competitive advantage in Nigeria's rapidly evolving digital banking environment.

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