ISSN 2278-2540 | DOI: 10.51583/IJLTEMAS | Volume XV, Issue I, January 2026

The Impact of Artificial Intelligence on Knowledge Management and Organizational Competitiveness: Evidence from Access Bank Nigeria Plc

Comfort Kasevhemba Aande; Taiwo Babatunde

Department of Business Administration, MBM (MSc) with Specialization in Human Resources, Wittenborg University of Applied Sciences, Apeldoorn, Netherlands.

DOI: https://doi.org/10.51583/IJLTEMAS.2026.1501000100

Received: 29 January 2025; Accepted: 03 February 2026; Published: 18 February 2026

ABSTRACT

With the increased awareness of Industry 4.0 and big data, this study provides an opportunity to examine how AI can address the limitations in traditional knowledge management. This study aims to determine the relationship between artificial intelligence (AI), knowledge management (KM), and organizational competitiveness (OC), in the banking sector using a case study of Access Bank Nigeria PLC.

A quantitative method has been employed to analytically explore the research aims. Seven hypotheses were created; three hypotheses were analyzed based on correlational analysis between AI and KM infrastructure capabilities (KMI), KM process capabilities (KMP) and KM relational capabilities (KMR); four was analyzed using the regression analysis (using SPSS) at a significance level of 0.05 to test the relationship between AI improved KMI, KMP, and KMR on organizational competitiveness (OC). Data was collected through a survey of 133 employees of Access Bank Nigeria PLC.

This study shows that there is a positive relationship between AI and KMI ($\beta = 0.397$, $p < 0.001$), KMP ($\beta = 0.392$, $p < 0.001$), and KMR ($\beta = 0.312$, $p < 0.001$) from the correlation analysis; and that AI-improved knowledge management capabilities have more impact on Access Bank Nigeria's competitiveness than the traditional KM strategies. This indicates that AI helps improve the KM capabilities which further strengthens that various KM strategies. Lastly it was found that AI has a positive impact on Access Bank competitiveness ($R^2 = 0.461$, $F = 35.445$, $p < 0.001$) and that organizations should further strengthen their integration of AI into their knowledge management strategies.

Keywords: Knowledge management, Artificial Intelligence, Organizational Competitiveness, Knowledge Management Capabilities

INTRODUCTION

As the fourth industrial revolution (4IR) approaches, sophisticated technologies like cloud-based computing, big data analytics, artificial intelligence (AI), and others are changing how many types of businesses operate (Farishy, 2023). Artificial Intelligence (AI) has significantly transformed how companies run and provide services to their clients. AI has been incorporated into a number of processes, particularly for making decisions based on data.

In particular, the banking industry is becoming more customer-focused and technologically competitive due to the integration of AI into banking applications and services (Singh, 2023). AI-powered technologies are becoming increasingly useful in helping banks save expenses due to their increased efficacy and ability to make judgments based on data that is beyond human comprehension.

The creation, sharing, utilization, and organization of information and knowledge inside an organization are all part of knowledge management (KM), which is a crucial component to business performance (Obaro et al., 2022; Taherdoost & Madanchian, 2023). However, traditional approaches have shown to be stressful, particularly when handling large amounts of data and records (Obaro et al., 2022; Taherdoost & Madanchian, 2023). Moreover,

ISSN 2278-2540 | DOI: 10.51583/IJLTEMAS | Volume XV, Issue I, January 2026

despite the significance of knowledge management adoption in enterprises, many knowledge management implementation failures were primarily caused by a lack of analysis and a sufficient grasp of the essential components of an efficient execution (Adelowo & Titilope, 2020).

Problem statement

According to a report by Access Bank Nigeria PLC CEO, Herbert Wigwe, leveraging technologies like AI and data analytics will help improve competitiveness in banking and fintech (Vanguard Nigeria, 2019). For the banking sector, loads of documentation are being processed daily from credit/debit card monitoring, daily transactions, customer services, and so on and all of these are required for proper knowledge development to further understand customer needs and requirements.

There are 21 commercial banks, 860 microfinance banks, 5 discount houses, 64 finance companies, and 5 development finance banks in Nigeria and for Access Bank to remain competitive, there needs to be proper knowledge management and analysis.

Conventional knowledge management has been shown to be stressful (Obaro et al., 2022; Taherdoost & Madanchian, 2023); it has also failed because the organization was unable to generate, store, and process the volume of knowledge it possessed. However, thanks to artificial intelligence (AI) systems, this is now possible (Jarrahi et al., 2022).

Although Okonji et al. (2023) discovered a strong correlation between organizational performance and AI competency, they were unable to address important implications of AI, did not address the deployment of AI technologies, and did not address the effects on knowledge management.

In order to determine the effects of AI on knowledge management, several systematic reviews have also been conducted (Alqahtani et al., 2022; Taherdoost & Madanchian, 2023). However, due to methodological flaws, such as the articles' perceived credibility (Uttleya et al., 2023) and the possibility of bias in the inclusion and exclusion criteria (Owens, 2021), these studies have not been able to fully correlate AI and knowledge management. A cross-sectional investigation will thus be successful.

In support of this, in 2019, Access Bank stated that the organization is revolutionizing how banking will be carried out through the use of cutting-edge technologies for their various operations. However, the impacts of these technologies on knowledge management as pertain to competitiveness were not stated.

Although AI is capable of processing and analyzing enormous volumes of data, it is therefore important to consider how this technological development will impact the organization's knowledge management procedures and, ultimately, its ability to compete in the banking sector.

Research Objectives

To effectively and quantitatively answer these questions with the adoption of the 2 frameworks identified, this study will be conducted:

i. To assess and understand the current level of AI and knowledge management in Access Bank.

ii. To ascertain the benefits of adoption of AI technologies in banking industry

iii. Evaluate the relationship between AI, knowledge management, and organizational competitiveness.

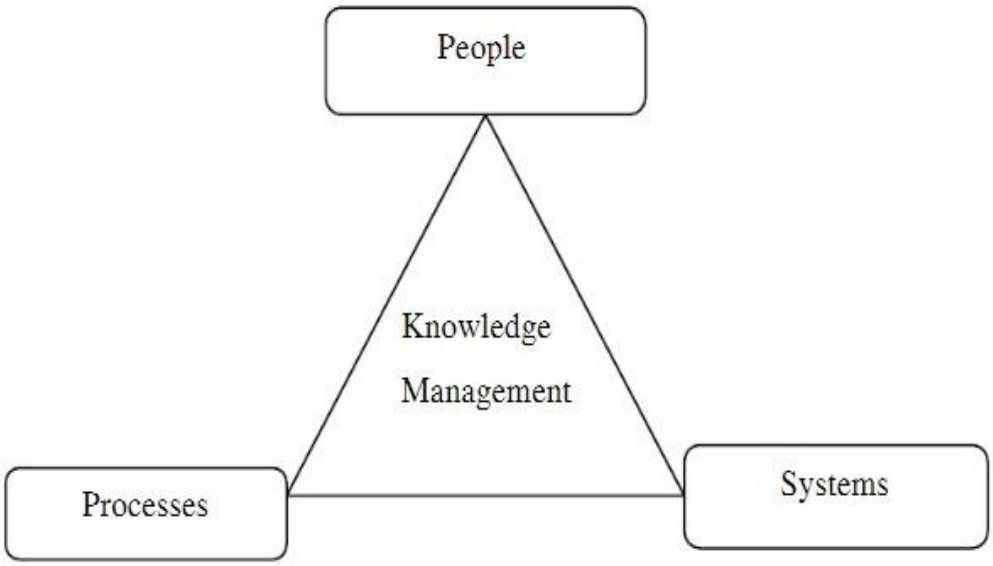
LITERATURE REVIEW

Knowledge management (KM) is defined as the following tasks, according to Mutula and Mooko (2008): (i) compiling information that staff members and customers need into a centralized archive; (ii) determining the knowledge classifications needed to support the organization's overall strategy; (iii) gathering, organizing, and sharing information within the organization; (iv) utilizing technology to assist in maintaining and retrieving

ISSN 2278-2540 | DOI: 10.51583/IJLTEMAS | Volume XV, Issue I, January 2026

information; and (v) offering accessibility tools (Igbinovia & Ikenwe, 2018) as shown in Figure 1 below.

Figure 1. Triangle of Knowledge management (Igbinovia & Ikenwe, 2018)



Obaro et al. (2022) grouped knowledge management into three; first, KM Infrastructural capabilities, defined as a corporate architecture for continuously and intentionally producing information is called knowledge management infrastructure (Obaro, et al., 2022). Tsetim et al. (2020) claim that there are three main ways to understand the KM infrastructure: Culture (the norms, values, assumptions, and beliefs of employees and employers within an organization and how they affect decision-making processes); Technology (all of the company's computerized frameworks, such as transaction processing systems, accounting systems, data centers, and enterprise resource planning (ERP) systems); and Structure (refers to organization functional departments and leadership systems to management and monitor organizational goals).

Second, KM process capabilities is defined as the processes involved in efficient knowledge management. These are entangled or interwoven groups of actions, including production, distribution, storing and extraction, and utilization. While knowledge facilitators supply the framework needed by the company to improve the efficacy of information processes, knowledge processes themselves reflect the fundamental activities of knowledge (Obaro, et al., 2022; Tsetim, et al., 2020). Kaur & Mehta (2016) found that KN process capabilities Knowledge Management Process Capabilities are crucial for establishing an advantage over rivals in today's contemporary marketplace.

Lastly, KM relational capabilities defined as the external connections a company has with its suppliers and customers, which allow it to successfully and efficiently buy and sell goods and services (Obaro, et al., 2022). Developing relationships may stimulate more creativity and the growth of values. By lowering expenses, raising revenue, and creating new skills, client interactions may benefit the company and improve the quality of services provided (Sugiyarti & Mardiyono, 2022; Brous, 2020).

Artificial Intelligence in Banking Sector

The banking industry in Nigeria has started utilizing AI technologies, such as chatbots, which employ AI on more advanced platforms to provide developing financial solutions and human-like interactions through chat dialogues, and computerized robots for automating and simplifying procedures. These advances will significantly reduce the cost of servicing each customer, allowing banks to increase revenue, access more unbanked individuals, and provide exceptional customer care at a continuously decreasing cost (Agidi, 2019). In order to ensure that the advantages of financial AI for people ultimately benefit everyone, Ukpong (2022) advised banks to adopt artificial intelligence methodically, not just as a means of competing, but as a comprehensive business approach.

ISSN 2278-2540 | DOI: 10.51583/IJLTEMAS | Volume XV, Issue I, January 2026

Hypothesis: AI techs have a positive relationship with Access Bank Nig. Plc competitiveness

Knowledge Management & Artificial Intelligence

By tying together elements in unexpected ways, artificial intelligence has the potential to provide fascinating questions and new sets of infrastructure knowledge on a variety of subjects. Enterprises may utilize enormous data in novel ways only with self-learning analytical skills and pattern detecting features (Jarrahi et al., 2022). In a similar vein, AI capabilities can help companies find previously unidentified relationships and information from information collections that include call transcriptions, emails, the organization chat systems, internet discussions, and customer relationship management (CRM) databases, among other records of their interactions with clients (O'Dell & Davenport, 2019; Jarrahi, et al., 2022).

Hypothesis: There is a positive correlation between AI tech and KM Infrastructure capabilities

Taherdoost & Madanchian (2023) discovered that with the simplicity of knowledge processing and analytics, artificial intelligence enables people and groups to enhance inventive thinking and efficiency at all organizational levels. It also makes it easy to track outcomes. Businesses gain from higher profitability and ease of achieving many objectives. This makes them more competitive, lowers costs, bolsters security, and continuously provides data. These adjustments improve the techniques that may be used at any stage of the KMP. The application of AI technology in knowledge management offers significant benefits when done correctly. Banks that employ AI technology derive significant benefits from it for their customers, employees, and enterprises. According to Smit (2024), banks might use AI to reduce risk, boost profitability and economy, boost staff output, and enhance knowledge processing across acquisition and analytics (Smit, 2024).

Hypothesis: There is a positive correlation between AI tech and KM Process capabilities

Ullah (2023) pointed out that AI may have a significant influence on managing a company's relationships both inside and outside the company, particularly when it comes to client management. The author came to the conclusion that artificial intelligence might be very important in business plans meant to enhance the customer experience, provided that the costs associated with it are kept to a minimal. AI's constant modifications to communication are not only redefining the commercial function of the organization, but they are also affecting marketing managers' decision-making and data-interpreting procedures. More and more managers are realizing how critical it is to broaden their skill sets, acquire strong technical proficiency, and possess a thorough understanding of marketing concepts. (Iqbal & Khan, 2021)

Hypothesis: There is a positive correlation between AI tech and KM Relational capabilities in the banking industry.

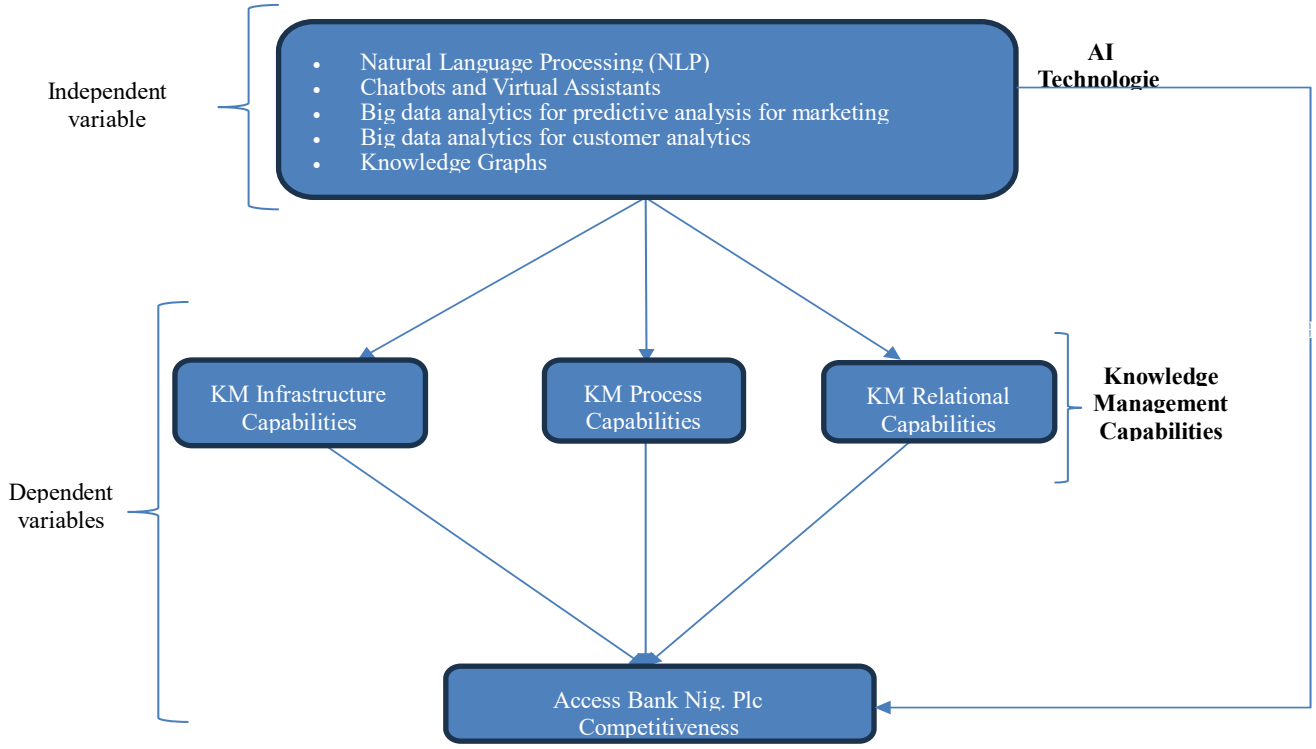
Theoretical Framework

This research adopted a dual-framework approach to explain the theoretical relationships among Artificial Intelligence (AI), Knowledge Management (KM), and Organizational Competitiveness (OC) within the Nigerian banking sector. The first framework considered was developed by Bag et al. (2020) to facilitate the critical understanding of the relationship between Big-data, an important component of Artificial Intelligence technologies, knowledge management, and organizational performance. This framework connects the role of AI as a major enabler of knowledge management on organizational performance and emphasizes that when AI is strategically integrated into an organization's knowledge management system, the benefits on performance will be achieved.

The second framework was proposed by Obaro, et al. (2022). This framework directly considers the relationship between the three knowledge management capabilities and organizational competitiveness, but does not consider any enabler. The model consists of 3 knowledge management capabilities: KM infrastructural, KM process, and KM relational which will be adopted in this study. This model has been selected as it analyses the concept of knowledge management, and organizational competitiveness in the banking industry in Nigeria. Based on the theoretical frameworks, the current study research framework was developed as shown in Figure 2 below.

ISSN 2278-2540 | DOI: 10.51583/IJLTEMAS | Volume XV, Issue I, January 2026

Figure 2. Conceptual Research Framework



- H1: There is a positive correlation between AI tech and KM Infrastructure capabilities
- H2: There is a positive correlation between AI tech and KM Process capabilities
- H3: There is a positive correlation between AI tech and KM Relational capabilities
- H4: AI Improved KM Infrastructure capabilities positively impact on Access Bank Nig. Plc competitiveness
- H5: AI Improved KM Process capabilities positively impact on Access Bank Nig. Plc competitiveness
- H6: AI Improved KM Relational capabilities positively impact on Access Bank Nig. Plc competitiveness • H7: AI techs have a positive relationship with Access Bank Nig. Plc competitiveness

RESEARCH METHODOLOGY

This research employed a cross-sectional study design in order to gather the required data. Also, the primary data came from the information gathered from the participants using a well-structured survey questionnaire. A letter requesting participation in the survey as well as direct communication and referral with recognized organization staff will be used to get in touch with the participants.

Upon completion of data gathering, a complete data analysis will be carried out using the IBM SPSS 21. Additionally, regression analysis and the correlation coefficient will be employed. The Cronbach's Alpha coefficient testing will be utilized to verify the internal uniformity of the research variables and assess the reliability of the measurement parameters (Asaolu, 2018; Adelowo, 2020).

The target population for this study is the employees of Access Bank Nigeria PLC. The total employees of Access Bank in Nigeria are 28,000 with 566 branches (Access Bank Plc, 2021). The target location is employees from various Access Bank branches in Lagos Nigeria (49 branches) and the target population size is taken as 300; using the Taro Yamane formula for sample size calculation at a sampling error of 5% (Asaolu, 2018), the sample size is estimated at 170.

ISSN 2278-2540 | DOI: 10.51583/IJLTEMAS | Volume XV, Issue I, January 2026

The reliability of the study instrument was tested using the Cronbach's Alpha test. Hair, et al. (2016) states that the value needs to be controlled by more than 0.7 and the validity was tested using the Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy and Bartlett's Test of Sphericity.

RESULTS AND DISCUSSION

133 respondents completed the survey for this study out of the expected 170 (78% of the sample was achieved). According to Ali et al. (2021), for an online survey, the expected response rate should be at least 54% of the total sample. From this survey, 52% of the respondents are male, 47.06% are female and 0.74% selected others. From this, it can be inferred that the majority of the respondents are male. Also, age-wise, 48.87% are between the age of 21-34, 41.35% are between the age of 35-44, 9.02% are between the age of 45-54 and 1.50% are between the age of 55-65. This shows that the majority of the respondents are between age of 21-44 and they are young.

In terms of qualification, 47.76% have a bachelor's degree, 20.15% (Higher National Diploma), 19.4% (master's degree), 5.97% (National Diploma), 4.48% (post-graduate diploma) and 2.24% (PhD). Additionally, 47.01% are operational staff, 18.66% are middle management, 14.18% are executive leadership, 10.45% are IT staffs, while 10.45% are in other positions. Lastly, in terms of years of experience of respondents, 47.37% have 1-5 years of experience, 30.83% have 6-10 years of experience, 15.04% have more than 10 years of experience and 7.52% have less than 1 year of experience.

For this study, the variables have been abbreviated as: Organizational Competitiveness (OC), AI (Artificial Intelligence technologies), KMR (Knowledge Management Relational), KMI (Knowledge management infrastructural), KMP (knowledge management processes), AIKMR (AI improved Knowledge Management Relational), AIKMI (AI improved Knowledge Management Infrastructural), and AIKMP (AI improved Knowledge Management Processes). The Likert scale of "Agreedness" (SA-1, A=2, N=3, D=4, and SD=5) have been used in the development of the questions and the grand mean from the calculation is 1.7279. Based on this, all mean value between 1-2.5 shows a high level of agreement, a mean value of 2.6-3.5 shows neutrality to responses and a mean between 3.6 to 5 shows a high level of disagreement.

Table 1. Descriptive statistics of Variables

Variables	Total Observed	Mean	Median	Std. Deviation	Skewness
AI	133	1.7519	1.5	0.62651	0.824
OC	133	1.6291	1.6667	0.52649	0.435
KMR	133	1.75	1.875	0.48216	0.605
KMP	133	1.7581	1.8333	0.5862	2.03
KMI	133	1.708	1.8333	0.48566	0.474
AIKMR	133	1.7504	1.8	0.44118	0.289
AIKMP	133	1.7566	1.75	0.5214	1.443
AIKMI	133	1.719	1.75	0.45001	0.387

Table 1 above shows the descriptive measures of the study variables. It can be seen that for all study variables, the mean and median values fall between 1.5 to 1.875 which means that majority of the respondents agree with the majority of the questions in the survey. The skewness value shows the spread and height of the distribution around the mean values. George & Mallery (2019) and Hair et al. (2022) noted that a skewness value of zero means the distribution is perfectly normal, a value of skewness between -1 and +1 means the distribution is excellent for analysis, while a value of skewness between -2 and +2 is acceptable. Based on Table 4.1 above, it

ISSN 2278-2540 | DOI: 10.51583/IJLTEMAS | Volume XV, Issue I, January 2026

can be seen that 75% of the study variables (AI, OC, KMR, KMI, AIKMR, and AIKMI) have a skewness value between -1 and 1 while 25% of the study variables (KMP, and AIKMP) have skewness value between -2 and +2. Therefore, based on this, the distribution of data can be concluded to be fairly symmetrical along the mean and the majority of respondents agreed to the questionnaire meaning their responses fall between 1 to 2.5.

Reliability and Validity

Table 2. Reliability Test

Variable	No. of Measurement items	Cronbach's Alpha
AI	2	0.898
OC	2	0.898
KMR	8	0.893
KMP	6	0.889
KMI	6	0.891
AIKMR	8	0.881
AIKMP	6	0.875
AIKMI	6	0.879

The Cronbach's Alpha as calculated from SPSS has been put together and it can be seen that the Cronbach's Alpha value for all variables is well above 0.85 as shown in in Table 2 above. This tells that the results from this study are highly reliable and can be used for making inferential studies.

Table 3. Validity Test

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.829
Bartlett's Test of Sphericity	Approx. Chi-Square	1418.808
	df	300
	Sig.	.000

As shown in Table 3 above, the KMO sampling adequacy was measured at 0.829 which relates to a good measure and Barlett's test was significant at $p<0.001$ which means that the variables are well correlated for analysis. These tests therefore confirms that the measurement items and the results of this research are valid.

Correlational study

The following correlational hypothesis are tested:

- Hypothesis 1: There is a positive correlation between AI tech and KM Infrastructure capabilities.
- Hypothesis 2: There is a positive correlation between AI tech and KM Process capabilities
- Hypothesis 3: There is a positive correlation between AI tech and KM Relational capabilities

ISSN 2278-2540 | DOI: 10.51583/IJLTEMAS | Volume XV, Issue I, January 2026

The table 4 below shows the various correlation coefficients of each variable plotted against each other.

Table 4. Correlation Matrix between AI, KMI, KMP, and KMR

Variables	AI	KMR	KMP	KMI
AI	1	0.312**	0.392**	0.397**
KMR	0.312**	1	0.525**	0.439**
KMP	0.392**	0.525**	1	0.418**
KMI	0.397**	0.439**	0.418**	1
Sig. (2-tailed)	<0.001	<0.001	<0.001	<0.001

**.Correlation Is Significant At The 0.05 Level (2-Tailed)

From the Table 4 above, it can be seen that there is a positive relationship between AI and KMR, KMP, and KMI with a correlation coefficient of 0.312, 0.392, and 0.397 respectively at $p<0.001$. Based on this, it can be inferred that with AI, the knowledge management practices in Access Bank Nigeria can be highly improved. Therefore, Hypotheses 1,2, and 3 are accepted.

Regression Analysis - AI Improved KMI

- H_4: AI Improved KM Infrastructure capabilities positively impact on Access Bank Nig. Plc competitiveness. The null and alternative hypotheses for this case are:

- $H_{4.0}$: AI Improved KM Infrastructure capabilities does not have any significant impact on Access Bank Nig. Plc competitiveness.

- $H_{4.A}$: AI Improved KM Infrastructure capabilities have a significant impact on Access Bank Nig. Plc competitiveness.

Table 5. Regression Model – AI Improved KMI

Model Summary					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	F Change
1	0.585	0.343	0.337	0.42854	68.243
ANOVA					
Model		Sum of Squares	Mean Square	F	Sig.
1	Regression	12.532	12.532	68.243	<.001
	Residual	24.057	0.184		
	Total	36.59			
Coefficients					
Model		Unstandardized Coefficients	Standardized Coefficients	t	Sig.
		B	Beta		

ISSN 2278-2540 | DOI: 10.51583/IJLTEMAS | Volume XV, Issue I, January 2026

1	(Constant)	0.452		3.07	0.003
	AIKMI	0.685	0.585	8.261	<.001
	Trad. KMI	0.569	0.525	7.053	

From Table 5 above, the model has an R-value of 0.585 (58.5%) which shows that there is a 58.5% correlation between AIKMI and OC. Based on these findings, it can be inferred that the null hypothesis is rejected, and the alternative hypothesis is accepted that there is a significant and positive relationship between AI-improved knowledge management infrastructural capabilities and organizational competitiveness of Access Bank Nigeria Ltd.

In comparison with regression coefficients of KMI on OC, it can be seen that KMI only has 52.5% impact on

Access Bank Nigeria's competitiveness while with AI-improved KMI, a 58.5% impact is recorded on Access Bank Nigeria's competitiveness. Therefore, the introduction of AI into knowledge management infrastructural capabilities has more impact on organizational competitiveness than just the traditional knowledge management infrastructural capabilities.

Regression Analysis - AI Improved KMP

- H_5: AI Improved KM Process capabilities positively impact on Access Bank Nig. Plc competitiveness. The null and alternative hypotheses for this case are:

- $H_{5.0}$: AI Improved KM Process capabilities does not have any significant impact on Access Bank Nig. Plc competitiveness.

- $H_{5.A}$: AI Improved KM Process capabilities have a significant impact on Access Bank Nig. Plc competitiveness.

Table 6: Regression Model – AI Improved KMP

Model Summary					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	F Change
2	0.479	0.230	0.224	0.46385	39.061
ANOVA					
Model		Sum of Squares	Mean Square	F	Sig.
2	Regression	8.404	8.404	39.061	.000
	Residual	28.186	0.215		
	Total	36.590			
Coefficients					
Model		Unstandardized Coefficients	Standardized Coefficients	t	Sig.
		B	Beta		
2	(Constant)	0.779		5.492	<.000
	AIKMP	0.484	0.479	6.250	<.000
	Trad. KMP	0.363	0.404	5.054	<.000

ISSN 2278-2540 | DOI: 10.51583/IJLTEMAS | Volume XV, Issue I, January 2026

From Table 6 above, the model has an R-value of 0.479 which shows that there is a 47.9% correlation between AIKMP and OC. Based on these findings, it can be inferred that the null hypothesis is rejected, and the alternative hypothesis is accepted that there is a significant and positive relationship between AI-improved knowledge management process capabilities and organizational competitiveness of Access Bank Nigeria Ltd.

In comparison with regression coefficients of KMP on OC, it can be seen that KMP only has 40.4% impact on Access Bank Nigeria's competitiveness while with AI-improved KMP, a 47.9% impact is recorded on Access Bank Nigeria's competitiveness. Therefore, the introduction of AI into knowledge management infrastructural capabilities has more impact on organizational competitiveness than just the traditional knowledge management infrastructural capabilities.

Regression Analysis - AI Improved KMR

- H_6: AI Improved KM Relational capabilities positively impact on Access Bank Nig. Plc competitiveness. The null and alternative hypotheses for this case are:

- $H_{6.0}$: AI Improved KM Relational capabilities does not have any significant impact on Access Bank Nig. Plc competitiveness.

- $H_{6.A}$: AI Improved KM Relational capabilities have a significant impact on Access Bank Nig. Plc competitiveness.

Table 7: Regression Model – AI Improved KMP

Model Summary					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	F Change
3	0.438	0.192	0.185	0.47520	31.035
ANOVA					
Model		Sum of Squares	Mean Square	F	Sig.
3	Regression	7.008	7.008	31.035	.000
	Residual	29.582	0.226		
	Total	36.590			
Coefficients					
Model		Unstandardized Coefficients	Standardized Coefficients	t	Sig.
		B	Beta		
3	(Constant)	0.715		4.225	<.000
	AIKMR	0.522	0.438	5.571	<.000
	Trad. KMR	0.383	0.351	4.286	<.000

From Table 7 above, the model has an R-value of 0.434 which shows that there is a 43.4% correlation between AIKMR and OC. Based on these findings, it can be inferred that the null hypothesis is rejected, and the alternative hypothesis is accepted that there is a significant and positive relationship between AI-improved knowledge management relational capabilities and the organizational competitiveness of Access Bank Nigeria Ltd.

In comparison with regression coefficients of KMP on OC, it can be seen that KMR only has a 35.1% impact on Access Bank Nigeria's competitiveness while with AI-improved KMP, a 43.8% impact is recorded on Access Bank Nigeria's competitiveness. Therefore, the introduction of AI into knowledge management relational

ISSN 2278-2540 | DOI: 10.51583/IJLTEMAS | Volume XV, Issue I, January 2026

capabilities has more impact on organizational competitiveness than just the traditional knowledge management infrastructural capabilities.

Regression Analysis - AI impact on Access Bank

H7: AI techs have a positive relationship with Access Bank Nig. Plc competitiveness.

Table 7: Regression model of AI impacts on OC

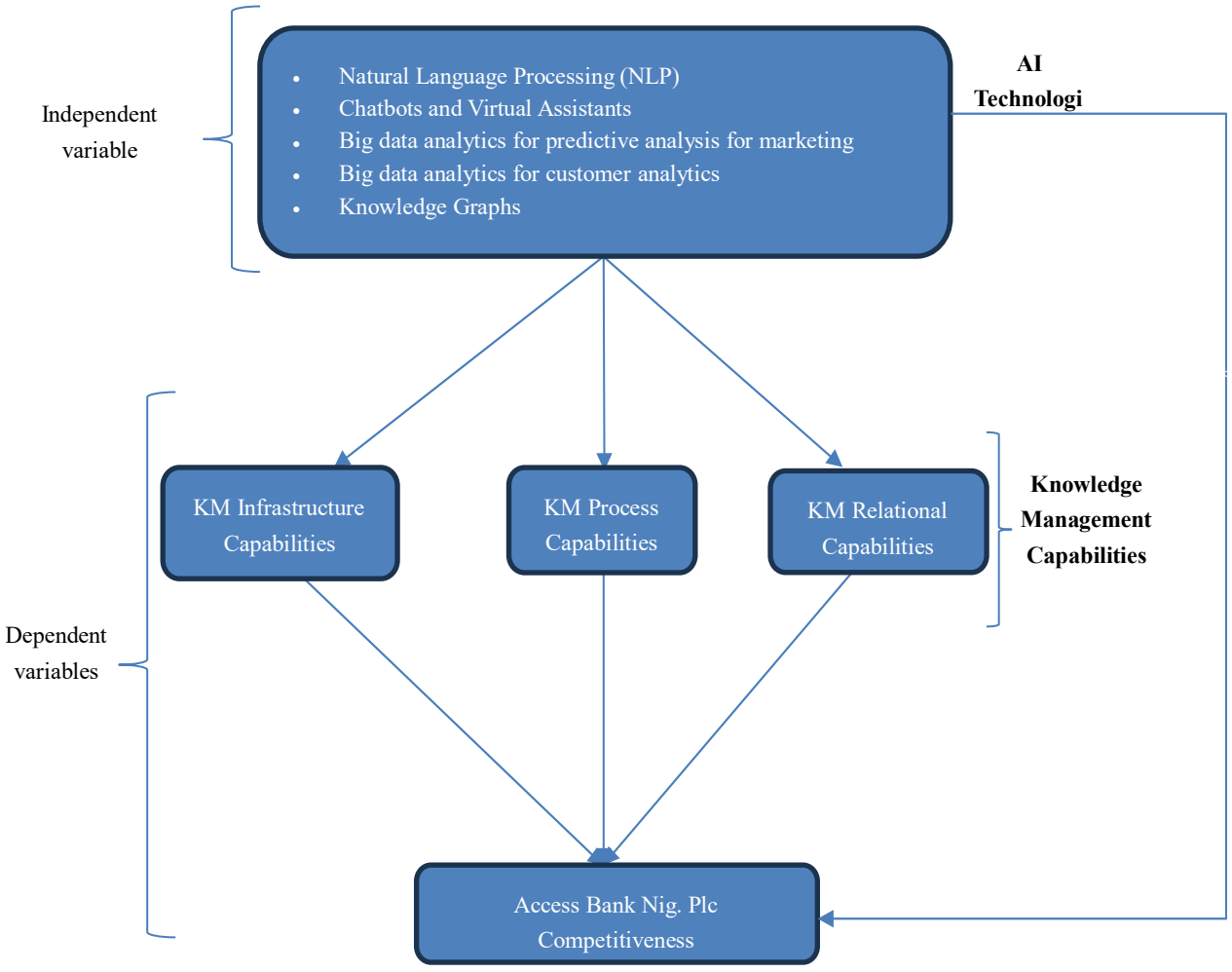
Model	R	R Square	Adjusted R Square	F Change	Sig. F Change
4	0.461	0.213	0.207	35.445	<.001

In overall, the impact of AI on Access Bank Nigeria competitiveness was studied based on regression and the table 7 below gives the regression model.

Based on this model, it can be seen that the model has an R-value of 0.461which shows that there is a 46.1% correlation between AI and OC. Also, the R square value was 0.213 which means that 21.3% of the changes in OC is well explained by the model. This therefore concludes that AI techs have a positive relationship with Access Bank Nig. Plc competitiveness.

DISCUSSION OF FINDINGS

Figure 3. Construct Analysis (Author's own)



ISSN 2278-2540 | DOI: 10.51583/IJLTEMAS | Volume XV, Issue I, January 2026

This study presents the empirical study concerning the application of Artificial Intelligence (AI) to Knowledge Management (KM) and Organizational Competitiveness (OC) by the Nigerian banking industry based on the case study of the Access Bank Nigeria Plc. The results showed that the implementation of AI contributes greatly to the improvement of the infrastructure of knowledge management, knowledge management processes, and relational capabilities, which jointly lead to the creation of a sustained competitive advantage as presented in the Figure 3 above. These findings support the increasingly common finding of the literature that AI is a strategic organizational tool and not just a technological one.

Furthermore, the research ascertains that AI significantly improves knowledge management processes, such as knowledge creation, sharing, storage, and utilization. Predictive analytics-based AI and decision-support systems will enable the use of data to generate knowledge and enhance learning in organizations. According to the regression findings, the process of AI-enhanced KM has a statistically significant impact on the competitiveness of organizations, which implies that companies that use AI in KM processes are in a better position to innovate and respond to the changing market dynamics.

Besides, the findings also point to the significance of AI in knowledge management relational capabilities. Customer analytics, chatbots, and personalization tools powered by AI enhance the capabilities of the organization to gather and use customer knowledge, which in turn enhances the level of relationships with the customers and other stakeholders in the organization. Greater relational abilities will add to better service quality, customer satisfaction and customer loyalty which is crucial to competitiveness in the very competitive banking industry.

The findings on the whole suggest that AI-led knowledge management features can describe a significant amount of organizational competitiveness variation, highlighting the strategic competence of AI implementation. The paper shows that AI-based KM strategies are more effective than conventional knowledge management practices since they will improve efficiency, innovation, and market responsiveness. These results indicate that in order to remain competitive in a digitalized environment, banks need to consider the strategic incorporation of AI into their knowledge management systems.

CONCLUSION

The key outcome of this study shows that traditional knowledge management systems (KMI, KMR and KMP) have positive impacts on Access Bank Nigeria competitiveness, however, when traditional knowledge management systems are improved or combined with AI techs (as in AIKMR, AIKMP, and AIKMI), there is a higher performance in terms of competitiveness. Also, this study found that with AI, various processes in the banking sector can be automated and thereby increasing the productivity of employees and the overall organizational competitiveness.

It was also found that AI tools like chatbots/virtual assistant and predictive analytics are highly used to support the traditional knowledge management systems.

In conclusion, banking institutions that want to be competitive in an ever-data-driven and digitalized market have to focus more on strategically integrating Artificial Intelligence into their knowledge management systems. The investments in AI technologies must be packaged with the organizational knowledge goals in order to make sure that the technological capabilities are converted into quantitative performance results.

This study has been conducted using majorly the quantitative research approach, the first recommendation to researchers from this study will therefore be to carry out cross-sectional research involving both qualitative and quantitative analysis.

The qualitative aspect will allow for selected few participants express their thoughts on the case study. This will further give more insight to the level of knowledge management within the industry. Secondly, this study has been conducted focusing on just a single industry in Nigeria, it will be a great addition to the research world if a cross-industry analysis can be carried by maybe considering industries like banking, insurance, and information technology.

ISSN 2278-2540 | DOI: 10.51583/IJLTEMAS | Volume XV, Issue I, January 2026

REFERENCES

1. Abuaddous, H., Sokkar, A. A., & Abualodous, B. I. (2018). The Impact of Knowledge Management on Organizational Performance. (IJACSA) International Journal of Advanced Computer Science and Applications, 9(4).
2. Access Bank Plc. (2021). Annual Reports and accounts. Access Bank Plc.
3. Adelowo, O., & Titilope, O. (2020). Knowledge Management Strategies and Organizational Performance of Deposit Money Banks(DMBs) in Nigeria. International Journal of Scientific Research and Management (IJSRM), 8(2), LIS-2020-09-18.
4. Adelowo, T. (2020). Knowledge Management Strategies and Organisational Performance of Deposit Money Banks in Nigeria. International Journal of Scientific Research and Management, 8(2), LIS-202009-18.
5. Agidi, R. C. (2019). Artificial Intelligence in Nigeria Financial Sector. .J. of Electronics and Information Engineering, 11(1), 40-47.
6. Agidi, R. C. (2019). Artificial Intelligence in Nigeria Financial Sector. I.J. of Electronics and Information Engineering, 11(1), 40-47.
7. Alqahtani, M., Alqahtani, K., & Aksoy, M. S. (2022). The Role of Artificial Intelligence and Information Technology in Promoting Knowledge Management in Business Firms: A Review. International Journal of Engineering and Management Research, 12(2), 13-24.
8. Al-Qarioti, M. Q. (2015). The Impact of Knowledge Management on Organizational Performance: An Empirical Study of Kuwait University. Eurasian Journal of Business and Management, 3(4), 36-54.
9. Asaolu, O. A. (2018). The Impact of Knowledge Management Practices on Competitive Advantage in Selected Nigerian Banking and Telecommunication Companies. Organizational Behaviour, 1-21.
10. Bag, S., Gupta, S., Kumar, A., & Sivarajah, U. (2020). An Integrated Artificial Intelligence Framework for Knowledge Creation and B2B Marketing Rational Decision Making for Improving Firm Performance. Industrial Marketing Management, 92, 178-189.
11. Balogun, F. (2023). Here are Nigeria's 10 biggest banks by assets. Lagos: Business Day.
12. Canhoto, A. I., & Clear, F. (2020). Artificial intelligence andmachine learning as business tools: A framework for diag-nosing value destruction potential. Business Horizons, 63(2), 183-193.
13. Cedersund, M. (2023). Artificial Intelligence in Banking – The Future of The Banking Work Environment. Turku University of Applied Sciences.
14. Chimezie, O. (2017). Challenges of Effective Human Resource Management In Nigeria. Human Resource Management, 1-13.
15. Cristi, S., Birau, R., Shetty, S. K., & Filip, R. D. (2022). Impact of Artificial Intelligence in Banking Sector with Reference to Private Banks in India. Physics AUC, 32, 59-75.
16. Enholm, I. M., Papagiannidis, E., Mikalef, P., & Krogstie, J. (2022). Artificial Intelligence and Business Value: a Literature Review. Inf Syst Front, 24, 1709–1734.
17. Espina-Romero, L., Sánchez, J. N., Hurtado, H. G., Conde, H. D., Castro, Y. S., Cajo, L. E., & Corredoira, J. R. (2023). Which Industrial Sectors Are Affected by Artificial Intelligence?A Bibliometric Analysis of Trends and Perspectives. Sustainability, 15(16), 12176.
18. Farishy, R. (2023). The Use of Artificial Intelligence in Banking Industry. International Journal of Social Service and Research, 3(7), 1724-1731.
19. Farishy, R. (2023). The Use of Artificial Intelligence in Banking Industry. International Journal of Social Service and Research, 3(7), 1724-1731.
20. Hair, J., Hult, G. M., Ringle, C., & Sarstedt, M. (2016). A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM). New York: Sage Publications.
21. Igbinovia, M. O., & Ikenwe, I. J. (2018). Knowledge Management: Processes and Systems . Information Impact | Journal of Information and Knowledge Management, 8(3), 26-38.
22. Iqbal, T., & Khan, M. N. (2021). The Impact of Artificial Intelligence (AI) on CRM and Role of Marketing Managers. Business Management Master Thesis.
23. Jarrahi, M. H., Askay, D., Eshraghi, A., & Smith, P. (2022). Artificial Intelligence and Knowledge Management: A Partnership Between Human and AI. Business Horizon, 66(1), 1.
24. Jayasundara, C. C. (2008). Knowledge Management in Banking Industries: uses and opportunities. Journal of the University Librarians Association of Sri Lanka, 12, 68-86.

ISSN 2278-2540 | DOI: 10.51583/IJLTEMAS | Volume XV, Issue I, January 2026

25. Kaur, V., & Mehta, V. (2016). Knowledge Management Process Capabilities and Competitive Advantage: A study of MNCs in IT Sector. Ktra: 2nd International Conference on Applied Economics and Business.
26. Kothari, C. R., & Garg, G. (2014). Research Methodology: Methods and Techniques. Open Journal of Social Sciences, 8(6), 1.
27. Manning, C. (2020). Artificail Intelligence Definitions. California: Stanford University.
28. Mutula, & Mooko. (2008). Information and Knowledge management in the digital age.Concepts, technologies & African perspectives. In Knowledge Management (p. 1). In Aina, L.O,Mutula, S.M & Tiamiyu, M.A..
29. Nairametrics. (2023). The Largest Bank in Nigeria based on total assets – 2023. Nairametrics Research Team.
30. Neștian, A. Ș., Tiță, S., & Guță, A. L. (2020). Incorporating artificial intelligence in knowledge creation processes in organization. Romania: Proceedings of the 14th International Conference on Business Excellence.
31. Newbert, S. (2008). Value, rareness, competitive advantage, and performance: a conceptual-level empirical investigation of the resource-based view of the firm. Strategic Management Journal, 27(7), 745-768.
32. Nnabuife, E. K., Onwuka, E. M., & Ojukwu, H. S. (2015). Knowledge Management and Organizational Performance in Selected Commercial Banks in Awka, Anambra State, Nigeria. IOSR Journal of Business and Management, 7(8), 25-32.
33. Noreen, U., Shafique, A., Ahmed, Z., & Ashfaq, M. A. (2023). Banking 4.0: Artificial Intelligence (AI) in Banking Industry & Consumer's Perspective. Sustainability, 15(4), 1-16.
34. Obaro, I. K., Yusuf, A. A., & Shaibu, H. (2022). Impact of Knowledge Management On Organisational Competitiveness: A Study of First Bank of Nigeria Plc In Abuja. International Journal of Management, Social Sciences, Peace and Conflict Studies (IJMSSPCS), 5(2), 299-315.
35. Ojukwu, H. S. (2015). Knowledge Management and Organizational Performance in Selected Commercial Banks in Awka, Anambra State, Nigeria. IOSR Journal of Business and Management (IOSR-JBM), 17(8), p-ISSN: 2319-7668.
36. Okonji, P. S., Oladimeji Charles, F., & Chinenye Anthonia, O. (2023). The Role of Organizational Creativity Between Artificial Intelligence Capability and Organizational Performance. Business And Entrepreneurial Review, 23(1), 157-174.
37. Owens, J. K. (2021). Systematic reviews: Brief overview of methods, limitations, and resources. NA&E, 1. doi:https://doi.org/10.1111/nae2.28
38. PricewaterhouseCoopers. (2022). PwC's Global Artificial Intelligence Study: Exploiting the AI Revolution. PwC.
39. Rahman, M., Tabash, M. I., Salamzadeh, A., Abduli, S., & Rahaman, S. (2022). Quantitative Sampling. SEEU Review, 17(1), 42-51.
40. Sekaran, U., & Bougie, R. (2013). Research Methods for Business: A Skill-Building Approach. International Journal of Communications, Network and System Sciences, 9(9), 1.
41. Singh, S. (2023). Artificial Intelligence is Used in Banks. Retrieved December 10, 2023, from https://appinventiv.com/blog/ai-in-banking/
42. Smit, J. (2024). A Literature Review on the Impact of Artificial Intelligence on the Future of Banking and How to Achieve a Smooth Transition. Open Journal of Business and Management, 12(1), 509-520.
43. Sugiyarti, G., & Mardiyono, A. (2022). Knowledge agility, relational capability, marketing networks antecedence for successful marketing performance. Contaduríay Administración, 67(2), 263-277.
44. Taherdoost, H., & Madanchian, M. (2023). Artificial Intelligence and Knowledge Management: Impacts, Benefits, and Implementation. computers, 12(72), 1-18.
45. Theofanidis, D., & Fountouki, A. (2018). Limitations and delimitations in the research process. Perioperative Nursing, 7(3), 1.
46. Triwidyati, H., & Tentama, F. (2020). Validity and Reliability Construct of Subjective WellBeing Scale. International Journal of Sciences: Basic and Applied Research (IJSBAR), 51(2), 191-200.
47. Tsetim, J. T., Adegbe, O. B., & Agema, R. J. (2020). Knowledge Management Infrastructure Capabilities and Innovativeness of Small and Medium Scale Enterprises in Benue State, Nigeria. Saudi Journal of Business and Management Studies, 5(3), 216-225.
48. Uğurlu, Ö. Y., & Kızıldağ, D. (2013). A Comparative Analysis of Knowledge Management in Banking Sector: An Empirical Research. European Journal of Business and Management , 5(16), 12-19.

ISSN 2278-2540 | DOI: 10.51583/IJLTEMAS | Volume XV, Issue I, January 2026

49. Ullah, A. (2023). Impact of Artificial Intelligence on Customer Experience- A mixed-methods approach to study the impact of Artificial Intelligence on Customer Experience with Voice of Customer as the mediator. Jonkoping University.
50. Uttleya, L., Quintan, D., Montgomery, P., Carrolla, C., Page, M., Falzona, L., . . . Moher, D. (2023). The problems with systematic reviews: a living systematic review. Journal of Clinical Epidemiology, 156, 30-41.
51. Vanguard Nigeria. (2019). Artificial Intelligence essential for banks to remain competitive — Access Bank boss. Retrieved October 9, 2023, from https://www.vanguardngr.com/2019/05/artificial-intelligenceessential-for-banks-to-remain-competitive-access-bank-boss/
52. World bank. (2016). Digital Adoption Index. India: The World bank.
53. Zuñiga-Collazos, A., Castillo-Palacio, M., & Padilla-Delgado, L. M. (2019). Organizational Competitiveness: The Conceptualization and Its Evolution. Journal of Tourism and Hospitality Management, 7(1), 195-211.