

# Effect of Information and Communication Technology on Customer Service Delivery in Nigerian Banking Sector

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**Citation:** Ogunlokun Ayodele D., and Olaiya Adeniyi Clement (2026). Effect of Information and Communication Technology on Customer Service Delivery in Nigerian Banking Sector. *Journal of Business, IT, and Social Science*.

**DOI:** <https://doi.org/10.51470/BITS.2026.05.01.13>

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11 October 2025: Received | 07 November 2025: Revised | 10 December 2025: Accepted | 14 January 2026: Available Online

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## ABSTRACT

This study focused at investigating how information and communication technology affects customer service delivery within the Nigerian banking industry, with a focus on the First Bank, Ado Ekiti. This study sourced data primarily through administered questionnaires. Data analysis was done by employing chi-square technique. Outcome of the analysis revealed that ICT was a significant and positive determinant in the delivery of customer service in Nigerian banking sector. Equally, findings showed that application of ICT in providing customer services positively and significantly improved the speed of processing customers' transactions as well as the convenience of the customers in accessing banking products and services. Hence, it was recommended that banks should ensure compliance with ICT with the delivery of customer' services and further adopt the initiative of investing in areas of improving or intervening in new technologies to ensure effective delivery of services.

**Keywords:** Information communication technology, Customer service, Banking sector.

## INTRODUCTION

### Background to the Study

Strong growth in many economies is typically attributed to information and communication technology [27]. It appears that innovations relating to technology influences economic progress and the likelihood of sustaining such growth while also stimulating the provision of services by the banks and financial institutions. The Nigerian banking sub-sector has witnessed by revolutions in terms technological adoption in the provision of customer services [3], making appropriate as the target of this study. Above all, in the business atmosphere in the banking and financial sub-sector in Nigeria is competitively operated using state-of-the-art technology, such that one operator is always looking for an inch opportunity to outperform other competitors in service delivery to customers, justifying the need to investigate the association between ICT and delivery of customers' services in Nigeria.

Moreover, banking sub-sector is a very crucial contributor to the growth of economy in Nigeria, accounting for approximately 6.4% of GDP, compared to a target of 10% [5]. Information ownership and management are essential tasks in the banking industry. In banking, recalibration of operational processing and IT breakthroughs are probably going to produce impact that is more than in other businesses [9]. Because of the increased competitiveness in the banking sub-sector, application of ICT is seen as essential to pursuing rationalisation and cost management [8]. Nigerian banks have been able to reduce costs and increase efficiency in their back-office operations because of information and communication technologies.

Businesses are being greatly impacted by technological advancements, especially when the Nigerian banking sub-sector is brought into context.

Businesses can make the best decisions at the right times when they have access to timely, accurate, and information that is both complete and comprehensive. The type of ICT development as well as its quality within an organisation have a greater impact on producing new goods, expanding market share, improving customer service, becoming a high-quality or low-cost producer, and raising worker productivity. Bringing banking operations and ICT together produces the notion of e-banking which has increasingly gained popularity, not only in Nigeria, but globally. With the introduction of computers to the banking industry, banking transactions have grown easier. The accounting procedure and back-office tasks, such as maintaining deposits, computing interest, and maintaining general ledgers, can be automated by banks. Nigerian banks perform better overall because the automation of front office functions reduces processing times and enhances customer service.

To improve performance and gain market share, numerous Nigerian banks have automated their operations, customised their product and service offerings, and streamlined their organisational structures over time. The emphasis is shifting towards total automation of all deposit money banks' operations and services as part of their ongoing effort to improve performance. The system or industry is very competitive, and it is anticipated that this competitiveness will spur the entry of new competitors with both local and international reach. Banks must embrace new technology to preserve their competitive edge as the market gets increasingly difficult to navigate [1].

Nigerian banks continue to face difficulties in continuously in the process of adopting and applying technology to productively increase performance, enhance the calibre of services provided while minimising operating costs and time averaged and time.

This is in spite of the swiftly expanding application of technological tools to enhance bank operational services via online banking, SMS, point of sale, mobile banking, including real-time gross settlement. By critically examining how technology is used effectively in providing services to customers by the Nigerian banks, the study aims at bridging the existing gap and determine how adoption of ICT tools affects consumer satisfaction in the banking sub-sector in Nigeria. As a result, the following research inquiries are made: What is the effect of information and communication technology on the speed of delivering customers' services within the banking sub-sector in Nigeria? What is the effect of information and communication technology on the cost of delivering customer' services within the banking sub-sector in Nigeria? What is the effect of information and communication technology on the security and convenience of services provided to customers within the banking sub-sector in Nigeria?

## LITERATURE REVIEW

### Conceptual Review

#### Information Communication Technology

Information Communication Technology was defined by [28] as the combination of computer and communication tools that support the creation, influence, mass production, exchange, or circulation of information. In a similar vein, [29] describes information communication and technology as the procurement, distribution, and storage of data or information through the use of processors and other equipment. Due to growing consumer difficulty and strong opposition stemming from the increased internationalisation of the services provided by the financial sector, a variety of information technology communication products and services, such as internet banking, mobile banking. Point of sale and automated teller machines (ATM). sometimes known as card systems are being deployed increasingly within the banking sub-sector the developing countries these days.

An ATM is an electronic device that integrates computer terminal with cash vault unit into a single system to allow customers access the records and bookkeeping systems of the banks using small rectangular shape plastic card that has personal identity of each user embedded in it. Customers must always supply the embedded identity information to the computer terminal before they can be granted access to services. The computer terminal is linked to the computerised record of the banks and continuously records data in real time [34]. [28] state that ATMs were originally designed to serve as dispensing machines. Primarily, ATMs are usually installed outside of banks or anywhere within the banks' premises and can also be available at hospitals, airports, schools, markets, including other environments that are far from customers' residences. ATMs can be used for a wide range of tasks, including paying bills, transferring money between multiple accounts as well as deposits making. To gain competitive advantage, electronic banking equipment is usually used by the banks combination with other devices to enhance customer service delivery. Compared to standing in a queue in the banking hall, electronic banking saves customers' time during the delivery of services.

Sometimes, bank customers make use of mobile banking, which is often called M-banking, to conduct credit transfers, balance inquiries, and other financial transactions following instructions sent via a mobile device [6].

According to [37], the term refers to system of banking service provision which involves the use of mobile phones or personal digital assistant to access basic banking services such as account transactions, balance checks, credit applications, payments, including other banking operations. Utilising telecommunications technology to assist mobile banking is a useful strategy. Among the range of services might be the ability to manage an account, access personalised data, and conduct stock market and bank operations. Globally, there many places that lacks basic infrastructural facilities and hence, rely on the use of mobile banking to access bank services.

From the customers' point of view, using mobile banking services is convenient because it enables them to carry out banking transactions at their choice time and from any location. Because financial transactions are password-protected and encrypted, security is guaranteed.

Internet Banking: According to [17], the concept of Internet banking is to make website access bank accounts available to customers, allowing the customers to conduct permissible transactions using their accounts and in compliance with the provided guidelines and laws by which online banking is governed. In addition, Internet banking can be used by customers to request for relevant formation while completing most of the bank-related transactions, and account balances check, money transfers between different accounts, including online payment of bills on [36]. Because of these features, online banking helps users finish and manage their financial transactions [26].

#### Concept of Customer Loyalty

One of the topics that is frequently covered in marketing and service literature is customer loyalty [15]. According to [16], the steadfast willingness to continuously purchase a favourite goods or services at a future time, leading to brand repurchases is referred to as loyalty. This concept encapsulates both the mindset and the actions that lead to recurrent brand purchases. Client loyalty, according to [21], is the recurring purchase intention of a client toward a particular product or service in the future. Making clients feel committed is what keeps them going when the benefits are significant to them [19]. According to [24], loyalty is defined as a client's willingness to freely promote a company's products to friends and acquaintances and to want the company's goods and services continuously and preferably exclusively over an extended length of time.

#### Information Communication Technology and Customer Loyalty

The banking sub-sector has seen tremendous changes because of the quick adoption of ICT. This includes modifications to the method of operation and a notable increase in the range of services offered to clients. [33] states that comfort, website design, financial security, interaction skills, and the ability to fulfil needs and consumer strength—all of which contribute to customer loyalty—are factors that encourage customer happiness with ICT. Similarly, [22] noted that banks can use information technology as a foundation to realign their services to customers to increase customer satisfaction, which eventually leads to customers becoming more devoted to the banks' goods and services. According to [35], banks use information and communication technology as a strategic tool to maintain their competitiveness against other firms in the same sector.

They also discovered a strong correlation between the rates at which various banks adopt new technology and the loyalty of their clientele.

### **Role of ICT in the Banking Industry**

It appears that there is the possibility of occurrence of a crisis that would force the banks to suffer from insufficiency always; therefore, advanced ICT tools, backed with an excellent system of control becomes necessary to be sure that ICT has accomplished the necessary processes. According to an examination of certain related material, ICT may harm banks' efficiency and production. [13] observed that productivity figures are one area where the computer era is evident today. The tremendous global improvement in banking procedures can be attributed to the modernisation of ICT. For example, the cost of international money transfers has significantly dropped as global networks have grown. According to [4], banks that use ICT-related goods, such as electronic payments, online banking, security investments, and exchanges of information, may make high-quality services accessible to customers seamlessly. According to [3], "ICT contributes significantly to firm-level output." It has been found that the additional benefits in terms of output arising from the deployment of technologically related capital hovers around 81 percent while capital not related to technology only make contribution equal to 6 percent. Furthermore, evidence shows that number of employees engaged in the ICT sector double those engaged in non-ICT sector. In addition, there two instances of where positive relationship between ICT and performance of banks were documented by [18] and [13].

With ICT properly integrated, operating expenses of the banks can be potentially reduced. For example, banks can do standardised, transactions such as such as payment of bill, balance check inquiry activities using online networks. These low value transactions can be done more swiftly and conveniently by using internet technology. Hence, ICT has transformed fundamentally the environment within which the banks operate and step up the tempo of competition among the banking operators. The spread in the application of ICT, coupled by the increased penetration by internet have added new value to provision of banking services by opening new channels for distribution of retail banking services and products using ATMs, online banking, point of sale, mobile banking, among others.

### **Theoretical Framework**

#### **Technology Acceptance Theory (TAT)**

TAT was first developed by [11] in his doctoral thesis at the MIT Sloan School of Management. In line with his proposal, the usage of a system is an action that may be explained or predicted by the user's motivation, which is influenced by an external stimulus comprised of the characteristics and functionalities of the system. (Chatur, 2009). Technology Acceptance Theory is a well-received and dependable paradigm that helps explain the individual behaviours that users of various information technologies accept.

The technological acceptance theory has been employed in numerous studies by researchers such as [22], [28], [20], and more recently, [30].

The two major indicators used to measure acceptance model are the Perceived Utility (PU) and Perceived Ease of Use (PEOU). [14] states that if a consumer believes they would suffer harm or lose anything while using technology, they will either reduce their acceptance of usage or perhaps refuse to use it.

One attitude aspect influencing their adoption is the degree of danger that a consumer perceives and their acceptance risk [10]. This approach is relevant for this study because Nigerian deposit money bank clients would weigh the perceived benefits of using ATMs and switching to online and mobile banking.

### **Empirical Review**

Information technology's impact on customer service delivery and business performance was examined by [20] using data from Nigeria's insurance sector. The research design used in the study was a survey method, and respondents are cross-examined.

Simple frequency % and the t-test were used to evaluate three hypotheses. IT managers, marketing managers, and underwriting managers from 25 insurance businesses comprised the study's sample of 117 participants. According to the report, the majority of clients do not interact with insurance businesses online.

[14] investigated how ICT in the Libyan banking industry could improve clients' relations. Regression analysis, Chi-Square, Pearson Moment Correlation Coefficient, and other pertinent descriptive statistics were employed to examine the data including assessing the four stated hypotheses. The research gives banks important information to consider when creating banking strategies to satisfy client demands and deepen and expand their relationship with them.

The importance of ICT in fostering client loyalty in banking was examined by [28] in their analysis of the Agricultural Development Bank Ltd. in Sunyani, Ghana. Research design was descriptive while data were gathered from 128 clients using questionnaires. The correlation coefficient and a basic percentage employed to estimate the data gathered. Findings of the investigation evince that poor service quality persists even after the Agricultural Development Bank of Sunyani, Ghana, implemented IT in service delivery. On the other hand, by personalising, streamlining, and saving time, IT has contributed to an increase in consumer loyalty.

[16] investigated how consumer satisfaction in Ethiopia's banking sector was affected by electronic banking. 402 of the questionnaires that were used to gather data for the study were correctly filled and returned. The stated hypotheses were tested in the study using tables, percentages, regression analysis, and chi-square technique. The findings showed that e-banking increased customer happiness, decreased the need for bank hall banking services, and shortened client wait times.

The effect of adopting ICT on the competitive performance of banks in developing economy with Nigeria in perspective was investigated by [7]. The study combined inferential method involving the use of t-test with descriptive approach. The finding showed that a positive association existed between ICT and performance of banks in Nigeria. This suggests that a gain in profit level was proportionate to a slight variation in depth of ICT adopted and invested in within the banking sub-sector. According to conclusion of this study, there was a need for the management of banks to make heavier investment in the application of ICT products to enable accurate, quick, and convenient service delivery.

In [37] analysis of the effect of ICT on the profitability of banks, they made use of a sample that captured 25% of banks in Nigeria that are listed on the floor of the Nigerian Exchange. The OLS regression method was used by the study, and the study discovered that the finding contrasted the a priori predictions.

This suggests there was no discernible effect of spending on ICT during period under study on operating performance going forward. Nevertheless, the study's conclusion goes on to demonstrate that, for banking institutions to remain competitive in the modern banking market, they must invest in technology infrastructure.

An examination of the effects of ICT operations of First banks of Nigeria limited was conducted by [31]. Primary data were employed, using questionnaires cum onsite interviews of employees and customers of banks served as the data collection strategy. Data were analysed by Chi-square and hypothesis statistically tested using simple frequency 5%. The findings revealed that ICT has enhanced the expansion and efficiency of the banks significantly in Nigeria and enhanced satisfaction of customers. The study suggests lowering import duties on IT-related equipment, improving local IT companies to encourage imports, and encouraging government agencies and regulatory bodies to modernise their technology.

[32] in their investigation of the ICT's influence on the banking sub-sector in Nigeria adopted a qualitative research approach. It was revealed that the introduction of IT infrastructure into banking sub-sector in Nigeria has significantly change the nature and scope of the nation's banking operations. They conclude that banks in Nigeria have evolved quickly from being simple to becoming one-stop shops offering financial solutions. The report also suggests that, given the growth rate and popularity of mobile devices, there should be implementation of M-Commerce in Nigeria.

In their study, [2] evaluated the impact of ICT on the commercial banks' performance in South Africa. The study made us of panel environment cum orthogonal transformation approaches to analyse the data. The conclusion of the study shows that the returns on asset of the banking sector in South Africa s well as the return on capital employed increase with ICT application. The report advises banks to place more emphasis on measures that would facilitate the appropriate use of ICT tools than on making new investments.

**METHODOLOGY**

Survey approach to research design was chosen and employed following the objectives of the study. Additionally, the questionnaire was used to source for data. To get the required responses from the respondents, they were created using closed-ended questions. To validate some of the questionnaire replies, a small number of respondents participated in oral interviews that supplemented the questionnaire. The first bank in Ado Ekiti, where fifty copies of fifty questionnaires were given to the employees of the banks who were within the customer service department, and this was population of the study. Also, simple random sample approach was used to pick the bank clients who were given questionnaires. The chi-square data analysis technique was used in this study to investigate the link between ICT and the provision of customer service in the banking sub-sector in Nigeria.

**RESULTS AND DISCUSSION**

**Data Presentation and Analysis**

Table 4.2: Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
1. Sex of Bank Customers * ICT aids the increased speed of delivering customers' services	48	100.0%	0	0.0%	48	100.0%
2. Sex of Bank Customers * ICT facilitates the delivery of customers services at reduced cost	48	100.0%	0	0.0%	48	100.0%
3. Sex of Bank Customers * ICT makes delivery of services to customers very secured and convenient.	48	100.0%	0	0.0%	48	100.0%

Source: Author's Computation with SPSS version 20.0

As per Table 4.2, it can be deduced that about 100% of the data case entered for processing are valid for all the research questions and there is no case of missing data. The implication of the foregoing is that the output of the data processing is dependable, valid and reliable for decision-making about the outcome of data analysis in providing valid answers to the research questions.

**Description of Statistics**

Table 4.2.1: Frequency Distribution Table

Question: ICT aids the increased speed of delivering customers' services in first bank Nig Ltd

Valid		Frequency	Percent	Valid Percent	Cumulative Percent
	Agreed		38	79.2	79.2
Disagreed		7	14.6	14.6	93.8
Undecided		3	6.3	6.3	100.0
Total		48	100.0	100.0	

Source: Author's Computation with SPSS version 20.0

From the table above 38 people representing 79.2% of the surveyed respondents accepted that ICT aids the increased speed of delivering customers' services in First Bank Nig Ltd; While 7 respondents who are 14.6% did not agree with this. Just about 3 out of the respondents surveyed, which are about 6.3% were unclear on whether information and communication technology aids the speed of processing customers' transactions in First Bank Nig Ltd. In this instance, most of the respondents, representing 79.2%, accepted that deployment of ICT has increased the speed at which customer services are rendered by the banking sector.

**Table 4.2.2: Frequency Distribution Table**

**Question:** ICT facilitates the delivery of customer' services at a reduced cost

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Agreed	34	70.8	70.8	70.8
	Disagreed	9	18.8	18.8	89.6
	Undecided	5	10.4	10.4	100.0
	Total	48	100.0	100.0	

**Source:** Author's computation using SPSS version 20.0

Arising from Table 4.2.2, about 34 of surveyed respondents, representing 70.8% of the total respondents agreed that ICT helps to facilitate the delivery of customer' services at reduced cost. While 9 respondents, which are 18.8% disagreed, only 5 of the respondents, which are about 10.4% were undecided about whether ICT helps to facilitate the delivery of customers' services at a reduced cost. Hence, 70.8% of the respondents in total agreed that ICT facilitates the delivery of customer services at a reduced cost.

**Table 4.2.3: Frequency Distribution Table**

**Question:** ICT ease customer service delivery and ensure it is convenient and secure for customers.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Agreed	35	72.9	72.9	72.9
	Disagreed	7	14.6	14.6	87.5
	Undecided	6	12.5	12.5	100.0
	Total	48	100.0	100.0	

**Source:** Author's computation using SPSS version 20.0

About 35 respondents from table 4.2.3, representing 72.9% of the study's respondents accepted that ICT makes delivery of services to customers very secure and convenient. While 7 respondents, who are 14.6% disagreed, only 6 of the respondents, who are about 12.5% were undecided about whether ICT makes transactions made by customers very secure. Thus, 72.9% agreed that the usage of ICT in rendering customer' services ensured the security and convenience of the delivery of such services.

**Test of Hypotheses and Discussion of findings**

The study followed the general rule for hypothesis testing by rejecting the H0 and accepting the H1 if the p-value is less than 0.05 and vice versa.

**H0<sub>1</sub>:** ICT has no significant positive effect on the speed of delivering customer services in the Nigerian banking sector.

**H1<sub>1</sub>:** ICT has significant positive effect on the speed of delivering customer services in the Nigerian banking sector.

**Table 4.2.4.0: Chi-Square Tests Results**

	Value	df	P-value
Pearson Chi-Square	16.241 <sup>a</sup>	2	.000
Likelihood Ratio	20.063	2	.000
Linear-by-Linear Association	13.745	1	.000
N of Valid Cases	48		

**Source:** Author's computation using SPSS version 20.0

From the above table, the value of chi-square has lower p-value at 0.000 than the 0.05 critical value; hence, H0 is rejected and H1 accepted, connoting that ICT has a significant positive effect on the speed of delivering customers services in the Nigerian banking sector. The implication of this is that banks can adequately and speedily process their customers' transactions due to the deployment of various electronic and ICT platforms usually used by the banks to provide such services to customers. The calculated chi-square is 16.241 which is apparently more than the critical value at 14.860 using 95% confidence interval.

**H0<sub>2</sub>:** ICT has no significant positive effect on the cost of delivering customers' services in the Nigerian banking sector

**H1<sub>2</sub>:** ICT has a significant positive effect on the cost of delivering customers' services in the Nigerian banking sector

**Table 4.2.5: Chi-Square Test Results**

	Value	df	P-Value
Pearson Chi-Square	90.329 <sup>a</sup>	4	.000
Likelihood Ratio	97.214	4	.000
Linear-by-Linear Association	56.234	1	.000
N of Valid Cases	46		

**Source:** Author's computation using SPSS version 20.0

From the above table, since the value of the calculated chi-square is 0.000, which is less than the critical value of 0.05, we rejected and accepted H1, connoting that ICT has a significant positive effect on the cost of delivering customers' services in the banking sub-sector in Nigeria. The calculated chi-square value is 90.329, and since it is higher than the critical value (14.860) at a 95% confidence interval of 3 degrees of freedom, it affirms the rejection of H0 in support of H1.

**H0<sub>3</sub>:** ICT has no strong positive effect on the security and convenience of services provided to the customers in the Nigerian banking sector

**H1<sub>3</sub>:** ICT has a strong positive effect on the security and convenience of services provided to customers in the Nigerian banking sector.

**Table 4.2.6: Chi-Square Test results**

	Value	df	P-Value
Pearson Chi-Square	25.412 <sup>a</sup>	2	.000
Likelihood Ratio	31.216	2	.000
Linear-by-Linear Association	21.159	1	.000
N of Valid Cases	48		

**Source:** Author's Computation using SPSS version 20.0

From Table 4.2.6, p-value is 0.000, and this is lower than the benchmark value of 0.05 significant level, H0 is thus rejected, and H1 is accepted. The acceptance of H1, connoting that ICT has a strong positive effect on the security and convenience of services provided to the customers in First Bank Nigeria Limited. The chi-square calculated value is 25.412, and this is higher than the critical value (14.860), supporting the decision that H0 is invalid while H1 is valid.

**CONCLUSION AND RECOMMENDATIONS**

The study's conclusions demonstrate that ICT improves the provision of customer service in the banking sub-sector.

Nevertheless, the banking sub-sector faces several difficulties, including deregulation, competition, globalisation, including the comparatively expensive cost of operation, installation and upkeep of ICT. Application of ICT tools and resources bring about cheaper expenses. The study's findings support the assertion that ICT adoption in Nigeria has a beneficial effect on the satisfaction of customers. Therefore, ICT investments should play a significant support in banking operators' overall strategies for ICT products to enable speed, convenience, and accuracy of services or risk losing out to rivals.

Since the customer is the centre of an organization, managers must make sure they understand their needs and provide the right products or services to meet them. Banks should also make sure that the industry complies with ICT and take the initiative to invest in areas of improving or introducing new technologies to ensure effective service delivery. This is because the study has demonstrated a significant correlation between the degree of ICT and the provision of customer service; additionally, sufficient oversight of the bank's IT infrastructure ought to be institutionalized to expedite the hiring of bank employees who are attentive to the needs of their clients.

#### REFERENCES

- Asika (2004). Effect of information technology on organizational performance on Nigerian banking industries. *Research Journal of Finance and Accounting*, 2(4), 23–34.
- Binuyo, A.O. & Aregbeshola, R.A. (2014). The impact of information communication technology on commercial bank performance. *Problems and Perspectives in Management, Journal of Business Management*, 5(1), 45–55.
- Brynjolfsson, E. & Hitt, L.M. (2000). Beyond computation: Information technology, organizational transformation and business performance. *Journal of Economic Perspectives*, 6(23), 40–55.
- Berger, A.N. (2003). The economic effects of technological progress: Evidence from the banking industry. *Journal of Money, Credit and Banking*.
- CBN (2008). *Central Bank of Nigeria Annual Report and Account as at 31st December*. Central Bank of Nigeria, Abuja.
- Chuttur, M.Y. (2009). Overview of the Technology Acceptance Model: Origin, development and future directions. *Sprouts: Working Papers on Information Systems*, Indiana University, USA.
- Dabwor, T.D., Ezie, O. & Anyatonwu, P. (2017). Effect of ICT adoption on competitive performance of banks in an emerging economy: The Nigerian experience. *Journal of Humanities and Social Science*.
- De Bandt, O. & Davis, E.P. (2000). Competition, contestability and market structure in European banking sectors on the eve of EMU. *Journal of Banking and Finance*, 24(6), 1045–1066.
- David-West, O. (2005). Information technology (IT) integration in banks' consolidation. *Zenith Bank Economic Quarterly*, 3.
- Dahlberg, T. & Mallat, N. (2002). Mobile payment service development: Managerial implications of customer value perceptions. *Journal of Marketing*, 4(12), 21–30.
- Davis, F.D. (1985). A technology acceptance model for empirically testing new end-user information systems: Theory and results. Unpublished doctoral dissertation, MIT Sloan School of Management, Cambridge, MA.
- Dushyenthan, T. (2013). Usage of information communication technology and its effects on customer loyalty: A study of banking industries in Jaffna, Sri Lanka. *Journal of Marketing and Consumer Research*, 3(1), 59–69.
- Economides, N. & Salop, S. (1992). Competition and integration among complements, and network market structure. *The Journal of Industrial Economics*, 40(1), 105–123.
- Elgawash, F.O.S. (2013). The role of information technology in enhancing customer relationships in the Libyan banking sector. Unpublished PhD thesis, University of Wollongong.
- Esight, A., Haughton, D. & Topi, H. (2007). Determinants of customer loyalty in the wireless telecommunication industry. *Telecommunications Policy*, 31, 93–106.
- Oliver, R.L. (1996). *Satisfaction: A Behavioral Perspective on the Consumer*. New York: McGraw-Hill.
- Essinger, J. (1999). *The Virtual Banking Revolution: The Customer, the Bank and the Future*. London: Thomas Business Press.
- Farrell, J. & Saloner, G. (1985). Standardization, compatibility and innovation. *RAND Journal of Economics*.
- Grossman, R.P. (1998). Developing and managing effective consumer relationships. *Journal of Product and Brand Management*, 23(4), 43–56.
- Idris, A.A., Olumoko, T.A. & Ajemunigbohun, S.S. (2013). The role of information technology in customer service delivery and firm performance: Evidence from Nigeria's insurance industry. *International Journal of Marketing Studies*, 4(7), 76–80.
- Jones, T.O., Earl, W. & Sasser, J.R. (1995). Why satisfied customers defect. *Harvard Business Review*.
- Kiplagat, G. (2015). Influence of information communication technology on customer retention in financial institutions: A case study of Kenyan commercial banks in Nairobi County. Unpublished master's project, University of Nairobi.
- Luka, M.K. & Frank, I.A. (2012). The impact of ICTs on banks: A case study of the Nigerian banking industry. *International Journal of Advanced Computer Science and Applications*, 5(12), 456–465.
- Lovelock, C.H. (1996). *Services Marketing* (3rd ed.). New Jersey: Prentice Hall.
- Madueme, I.S. (2010). Banking efficiency and information technology in Nigeria: An empirical investigation. *International Journal of Economics and Development*, 3(6), 34–45.
- Mensah, C.A.A. (2012). Electronic banking adoption in Ghana: A case study of Guaranty Trust Bank (Ghana) Ltd. Unpublished master's thesis, KNUST.
- Owusu, B. (1997). Customer switching behaviour in service industries: An exploratory study. *Journal of Marketing*, 8(5), 23–32.
- Oppong, P., Adjei, H. & Poku, K. (2014). The role of information technology in building customer loyalty in banking: A case study of Agricultural Development Bank Ltd., Sunyani. *British Journal of Marketing Studies*, 4(6), 90–109.
- Oketunji, I. (2000). Agenda for putting information technology to work in Nigerian libraries in the new millennium. In *Proceedings of the Annual National Conference and AGM*, Owerri.
- Oyeniran, I.W. & Abina, B.M. (2015). Factors influencing adoption of internet banking in Nigeria: An application of the extended technology acceptance model. *Ilorin Journal of Marketing*, 7(3), 234–245.
- Oyinkola, S. (2018). The impact of information technology on banking operations in First Bank of Nigeria PLC.
- Oluwagbemi, O., Abeh, J. & Achimugu, P. (2011). The impact of information technology in the Nigerian banking industry. *Journal of Computer Science and Engineering*.
- Portuese, D. (2006). E-commerce and the internet: The impact of relationship marketing opportunities for better online consumer intentional relationships. Unpublished doctoral dissertation, Capella University.
- Rose, P.S. (1999). *Commercial Bank Management* (4th ed.). Boston: McGraw-Hill.
- Tater, B., Tanwar, M. & Murari, K. (2011). Customers' adoption of banking technology in private banks of India. *International Journal of Banking and Finance*, 8(3).
- Wright, A. & Ralston, D. (2002). The lagging development of small business internet banking in Australia. *Journal of Small Business Management*.
- Wilson, U.A., Odo, C.O. & Ikenna, E. (2021). The impact of information technology on bank profitability in Nigeria. *African Journal of Science, Technology, Innovation and Development*, 12(4), 46–57.