

Information Technology Management as a Determinant of the Satisfaction of Commercial Banks' Customers in Nigeria: An Empirical Analysis

JAKPA, Grace Ufuoma

Department of Office and Information Management, Faculty of Administration and Management, Delta State University of Science and Technology; Email: jakpagrace@gmail.com

Abstract: *This study examined whether information technology management is a major determinant of customers' satisfaction among publicly listed commercial banks in Nigeria. To do this, one hundred and twenty-four (124) questionnaires was administered to selected customers of commercial banks, out of which one hundred and twelve (112) were fully retrieved. Data obtained in the survey were analyzed via both descriptive and inferential statistical tools. The study via the regression result established that there is positive and significant relationship between information technology management and customers' satisfaction among commercial banks. The implication of the finding is that information technology management (efficiency in costs and service delivery) is a determinant of the satisfaction of commercial banks' customers. On the basis of the findings, it was recommended that organizations should embrace information technology management tools in order to have competitive advantage, efficiency in cost and service delivery to customers. Additionally, management of commercial banks should build in-house capacity to handle information technology policies and procedures that attempt to retain information technology staff and develop backup plans for customers.*

Keywords: Information management; Customer satisfaction; Commercial banks; Cost efficiency; Quality service delivery; Nigeria

1. INTRODUCTION

In the 21st century, the world has experienced revolution in information communication technology (ICT), where the management ICT has been seen as one of the predominant alluring development in the industrial revolution. The industrial revolution has changed the business environment, commercial banks inclusive such that it changed the way bank customers transact businesses (Alpar & Kims, 2021). Currently, the use of information technology (IT) such as mobile phones, computers and satellite networks, has resulted in novel ways of processing, storing and distributing information among commercial banks and their customers (Mano, 2019).

According to Zuboff (2018), ICT is a fundamental issue in the 21st century, particularly in a dynamic and highly competitive business environment requiring the use of advanced ICT tools to enhance efficiency in areas of costs and high quality products and services to bank customers. Hence, organisations like commercial banks are increasingly investing in the use and management of IT to develop solutions to business problems as well as in the improvement of both efficiency and effectiveness of decision-making process in order to enhance productivity, service quality, stability and cost effectiveness (Feeny & Willcocks, 2018) as well as competing in the Nigerian capital market (Okoro, 2014) which seek to increase economic growth of the nation (Okoro & Egberi, 2019).

In the view of Hobday (2018), organizations have sought and adopted IT that enhances manpower in production and management; although it has emerged as a vital tool in the management of operations. As organisations grow and become sustainable, they depend largely on the management of IT for their survival (Feeny & Willcocks, 2018). Thus, banks implement and use IT to decrease costs as well as offering of high quality products and services to their customers (Hobday, 2018).

IT management refers to the control mechanisms used by organizations in ensuring that their products and services get to their customers via the internet and computer networks (Schneider, 2017). While prior studies had shown that IT management is a determinant of organizational performance, productivity, employee satisfaction among others, there are limited literature that had assessed whether IT management is a determinant of banks' customers satisfaction, particularly as it concerns listed commercial banks in Nigeria. In light of the identified gap in the management literature, this study investigated whether IT management serve as a determinant of the satisfaction of commercial banks' customers in Nigeria using two proxies of IT management - efficiency in costs and service delivery with the use of IT.

2. LITERATURE REVIEW

2.1 Information Technology Management (ITM)

IT refers to anything related to computing technology such as networking, software, the internet, hardware, or people that work with these technologies. Brynjolfsson and Hitt (2016) opined that ITM is the managing of software, hardware, database management, telecommunications and other information-processing technologies employed to store, process and deliver information to management and customers. Similarly, Morris and Westbrook (2016) see ITM as a frequently used tool to assist managers with direct control over business functions, personnel and other resources within the organization.

Furthermore, as managers oversee the coordination and allocation of resources, it can be cumbersome to coordinate business functions across various projects; hence the role ITM plays in making banks becoming innovative in areas of costs control, high quality service delivery, among others (Bender, 2016). Peansupap and Walker (2015) opined that ITM is initiated by organizations to facilitate the coordination of communication, integration, and enhancement of cost effectiveness, productivity and service delivery. As observed by Bhattacharjee and Hirschheim (2017), the implementation of ITM will reduce operational costs, wastages, and inability of organizations to build the needed technical skills.

In the same vein, Hacker and Saxton (2017) opined that the when ITM is well instituted in the organization, it will lead to customers' and employees' satisfaction and makes the organization well positioned in the marketplace. The use of ITM as noted by Namusonge (2016) will lead to increased efficiency, flexibility and improvement in the quality of product and service organizations offer to their customers.

2.2 Customers' Satisfaction

In recent times, increasing service delivery quality, market share, customers' satisfaction and patronage among others, has become a vital concern to management or organizations. According to Okeke and Okoye (2021), customer satisfaction is an advertisement in itself which is more reliable for others than any other advertisement tool. Narimasa, Nobukazu and Woonho (2022) see customers' satisfaction as feelings emanating from comparison between perceived expectation and performance of a particular product/service. Satisfaction can be categorized into two (2): transaction-specific and overall satisfactions. Notably, Shereen, Rozilah, Muhammad, Rohana and Shafiq (2021) asserted that the use of ITM in enhancing customers' satisfaction is an unresolved issue; the reason being that individual elements of customers' satisfaction and dissatisfaction appears as customers' needs, tastes, preferences and expectations changes continuously. Thus, what satisfies a customer may dissatisfies another customer.

Given the current wave in the development of IT, ITM has become a commonplace for organizations (commercial banks inclusive) in order to meet both the intended needs, tastes, preferences and expectations of customers. In this study, we empirically assessed whether ITM serves as a determinant of the satisfaction of commercial banks' customers in Nigeria; on the basis of this, we developed a conceptual model as shown in figure 1 below:

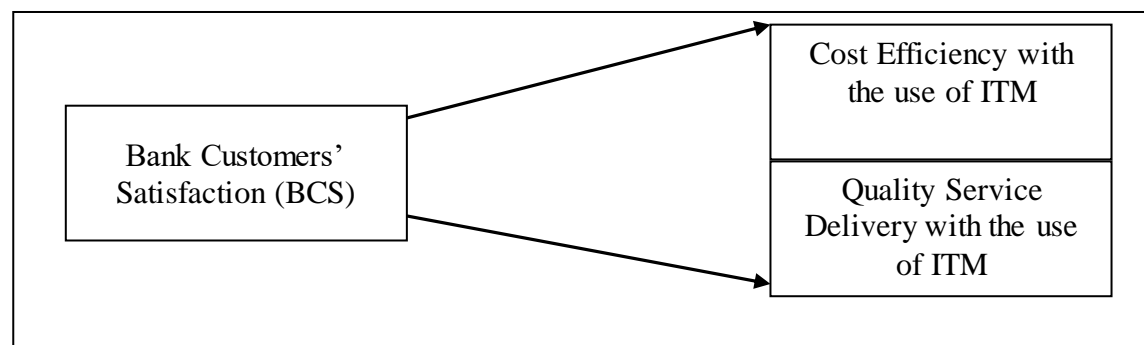


Figure 1: Conceptual Model of the Study
Conceptualized by the Researcher (2023)

Figure 1 conceptualized the relationship between information technology management (ITM – cost efficiency and quality service) and customers' satisfaction; the conceptual model was used as groundwork for estimating the empirical model of the study.

2.3 Theoretical Framework

The study relies on a theoretical model to determine whether ITM relates with customers' satisfaction; hence, the study relies on the Technology Acceptance Model (TAML) as advocated by Davis in 1989 (Bird & Lehrman, 2013; and Blili & Raymond, 2013). The TAML showed that emerging ICT cannot deliver improved organizational effectiveness if it is not accepted and used by customers (termed – 'users') (Mwania & Muganda, 2012; and Diewert & Smith, 2014). TAML is consistent with the theory of innovation

diffusion where ICT adoption is a function of a variety of dynamics including; relative advantage and ease of use (Galliers, Merali & Spearing, 2014; and Heinz, 2012).

Furthermore, two(2) beliefs are addressed via TAML; perceived usefulness and perceived ease of use (Davis, 1989). First, perceived usefulness is seen as the extent to which a bank customer believes that the use of an IT will improve his/her satisfaction; and second, perceived ease of use is the extent to which a bank customer believes that the use of an IT will be effortless in meeting their needs, expectations and tastes (Wachira, Muturi & Sirma, 2014; Wilson, Iravo, Tirimba & Ombui, 2015; and Evans & Wurster, 2017).

The relevance of this paradigm to this current study is that TAML helps researchers and management scholars to identify and explain why a particular IT or system may be unacceptable by customers and pursue suitable steps or measures aimed at managing such IT (Kinuthia & Rotich, 2015). This is where information technology management (ITM) play a major role in ensuring that when IT put in place by management is well accepted by customers, it must be managed to meet the overall needs, expectations, tastes and in satisfying customers.

3. MATERIALS AND METHODS

The study used descriptive survey research design in order to enable the researcher collect relevant data from a wide-range of people on whether ITM serves as a determinant of banks customers’ satisfaction. The population of study consists of employees of five (5) commercial banks out of which one hundred and twenty-four (124) were selected using the purposive sampling technique

The study employed questionnaire (primary data) in obtaining the views of respondents on whether ITM serves as a determinant of banks customers’ satisfaction in Nigeria. The questionnaire was designed on a 4-point scale of strongly agree, agree, strongly disagree and disagree and was administered on a face-to-face basis on the respondents by the researcher. To ensure reliability of the research instrument, a pilot test was carried out on twenty (20) respondents who do not form part of the study

Data obtained in the pilot test was correlated using Cronbach alpha reliability coefficient. Cronbach alpha reliability coefficient (see Table 1) were considered good since they beat the 0.05 recommended threshold by Cronbach (cited in Egberi & Osio, 2019; and Oboreh, Egberi & Egberi, 2022):

Table 1: Results for Cronbach Alpha Reliability Coefficients

Variable(s)	Reliability Coefficients	Remarks
Customers’ Satisfaction	0.82 > 0.05	Reliable
Cost Efficiency	0.77 > 0.05	Reliable
Quality Service Delivery	0.68 > 0.05	Reliable

Source: Compiled by the Researcher (2023)

The dependent variable is customers’ satisfaction while the independent variable is information communication management (ITM with two dimensions - cost efficiency and quality service delivery). In view of the dependent and independent variables of the study, the following multiple regressions were estimated:

$$bcs = f(cositm, qsditm) \quad - \quad eq. 1$$

Equation 1 showed the implicit regression model while equation 2 was re-estimated to show the explicit regression model as follows:

$$BCS_i = a_0 + \delta_1 cositm_i + \delta_2 qsditm_i + \epsilon_i \quad - \quad eq. 2$$

Where: *bcs* is bank customers’ satisfaction; *cositm* is cost efficiency, *qsditm* is quality service delivery linked with information technology management; $\delta_1 - \delta_2$ are regression coefficients; ϵ is error term while *i* is individual respondents of the selected commercial banks. Data obtained were analyzed via descriptive statistics (mean, standard deviation, minimum and maximum values, Karl Pearson correlation), post-estimation statistics (such as the variance inflation factor) and inferential statistics (multiple regressions). The analysis was done via STATA 13.0.

4. RESULTS

Table 2: Results of Descriptive Statistics showing Information Technology Management and Commercial Banks Customers’ Satisfaction

Variables	Mean	Standard Deviation	Min. Val.	Max. Val.
Customers' Satisfaction	2.2410	0.3094	1	4
Cost Efficiency	2.1730	0.5020	1	4
Quality Service Delivery	2.2093	0.3082	1	4

Source: Compiled by the Researcher (2023)

As shown in Table, is the summary of results of descriptive statistics for the dimensions of information technology management (cost efficiency and quality service delivery) and customers' satisfaction of commercial banks in Nigeria; the result showed that dimensions of ITM (cost efficiency and quality service delivery) and customers' satisfaction scored above 2.0 mean benchmark. This indicated that all the items on ITM are vital metrics for evaluating customers' satisfaction among the selected commercial banks in Nigeria. The result was further supported by the squat standard deviation values; thus, to an extent, ITM is practiced among the selected commercial banks in Nigeria under investigation.

Table 3: Karl Pearson Correlation Matrix for Information Technology Management and Commercial Banks Customers' Satisfaction

Variables	BCS	COSITM	QSDITM
BCS	1.0000		
COSITM	0.0452	1.0000	
QSDITM	0.0644	0.0625	1.0000

Source: Compiled by the Researcher (2023)

Table 3 showed the Karl Pearson correlation matrix results for the dimensions of ITM and customers' satisfaction among the selected commercial banks; the result revealed that the Pearson coefficients are 0.0452 (cositm) and 0.0644 (qsditm). An indication that there is a positive relationship between the dimensions of ITM and customers' satisfaction; impliedly, information technology management positively affects customers' satisfaction.

Table 4: Variance Inflation Factor (VIF) for Information Technology Management and Commercial Banks Customers' Satisfaction

Variables	VIF	1/VIF
Cost Efficiency (cositm)	1.22	0.8197
Quality Service Delivery (qsditm)	1.07	0.9346
Mean VIF	1.15	

Source: Compiled by the Researcher (2023)

Table 4 showed the results of multicollinearity (VIF) for the independent variables of the study (ITM dimensions - cost efficiency and quality service delivery) among the studied commercial banks in Nigeria. The mean VIF is = 1.15 and is not greater than accepted VIF mean of 10, this clearly indicates the absence of multicollinearity problem in the empirical model of ITM and BCS. VIF value above 10 as noted by Gujarati (2003), cited in Okoro and Ekwueme (2021); Egberi and Samuel (2017); Okoro (2016); Egberi and Egberi (2011) is seen to be good. Thus, the dataset is superbly suitable for performing inferential statistics (multiple regressions).

Table 5: Results of Multiple Regressions showing Information Technology Management and Commercial Banks Customers' Satisfaction

Parameters	Predictors	t-values
R-Squared	0.6604	Cositm = 7.09
R-Squared Adj.	0.6201	Qsditm = 5.43
F-Value	44.21	t-prob. = 0.0000
Prob. F	0.0000	

Source: Compiled by the Researcher (2023)

Table 5 captured the results of multiple regressions showing the dimensions of ITM (cositm and qsditm) and BCS among the selected commercial banks in Nigeria. The R^2 is 0.6604, showing that the dimensions of ITM explained about 66 percent of the systematic variation in customers' satisfaction. Thus, the model provides a good fit to the data since the unaccounted variation is just 34 percent.

The f-value is 44.21, indicating that the dimensions of ITM significantly affect BCS. Impliedly, information technology management serves as a determinant of the satisfaction of commercial banks' customers in Nigeria. In addition, the t-values suggest that cost efficiency and quality service delivery positively affect customers' satisfaction among the selected commercial banks in Nigeria. The results of the study in part corroborates with the views of Alpar and Kims (2021); Mano (2019) and Zuboff (2018) who found

that information technology management plays a fundamental role in influencing customers and employees' satisfaction and overall, organizational performance.

5. CONCLUSION AND RECOMMENDATIONS

Quite a number of studies had shown that information communication technology (ICT) plays a major role in influencing the performance, productivity and sustainability of firms in both developed and developing countries; however, to the researcher's knowledge, there has been dearth of studies that had assessed whether management of information technology by companies results to increased customers' satisfaction, particularly as it concerns commercial banks in Nigeria.

In the light of the identified gap in the literature, this study assessed whether information technology management (ITM) serves as a major determinant of customers' satisfaction among publicly listed commercial banks in Nigeria. Descriptive survey research design was used and primary data (questionnaire) was the major instrument of data collection. Data obtained were analyzed using descriptive, post-estimation and inferential statistical techniques. In specific, the multiple regressions result showed a positive and significant relationship between the dimensions of ITM (cost efficiency and quality service delivery) and customers' satisfaction among the selected commercial banks.

The implication of the result is that ITM is a determinant of customers' satisfaction of commercial banks in Nigeria. Given the findings, it was recommended that commercial banks should embrace ITM in order to have competitive advantage, efficiency in cost and quality service delivery to customers. In addition, commercial banks' management should build in-house capacity to handle information technology policies and procedures that attempt to retain talented information technology employees and develop backup plans for customers. The study contributes to knowledge by filling the gap on the relationship between ITM and commercial banks customers' satisfaction and further established that with efficient ITM, customers' satisfaction can be enhanced significantly and positively.

6. REFERENCES

- Alpar, T. & Kims, A. (2021). *The impact of information technology on organisations: The case of the Saudi private sector*. (Unpublished master's thesis). The University of St. Andrews, United Kingdom
- Bender, D.H. (2016). Financial impact of information processing. *Journal of Management Information Systems*, 1(1), 22-32.
- Bhattacharjee, A. & Hirschheim, R. (2017). IT and organisational change: Lessons from client/server technology implementation. *Journal of General Management*; 23(2), 31-46.
- Bird, A. & Lehrman, W. (2013). The effects of major information technology adoption in Japanese corporations. *Japan and the World Economy*, 5, 217-242.
- Blili, S. & Raymond, L. (2013). Information technology: Threats opportunities for small and medium-sized enterprises. *International Journal of Information Management*, 13(6), 439-448
- Brynjolfsson, E. & Hitt, L. (2016). IT as a factor of production: The role of differences among firms. *Economics of Innovation and New Technology*, 1(3), 183- 199.
- Davis, F.D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology, *MIS Quarterly*, 13(3): 319-340
- Diewert, W.E. & Smith, A.M. (2014). Productivity measurement for a distribution firm. *Journal of Productivity Analysis*, 5(4), 335-347.
- Egberi, K.A. & Egberi, O.E. (2011): Inventory control and management as effective and efficient tools in achieving organisational growth in Nigeria: A case study of Eternit Limited, Sapele, Delta State. *International Journal of Economic Development Research and Investment*, 2(2), 1-12
- Egberi, K.A. & Osio, E.J. (2019). Effect of market orientation on organizational performance: A study of the Nigerian banking industry. *International Journal of Business and Social Sciences*, 10(12), 93-102
- Egberi, K.A. & Samuel, A.P. (2017): Globalisation and economic growth in Nigeria: A co-integration approach. *Journal of International Business and Economics*, 5(1), 105-113.
- Evans, P. & Wurster, T. (2017). Strategy and the new economics of information. *Harvard Business Review*, 1, 70-82.
- Feeny, D.F. & Willcocks, L.P. (2018). Core IS capabilities for exploiting information technology. *Sloan Management Review*, 39 (3), 9-21.
- Galliers, R., Merali, Y., & Spearing, L. (2014). Coping with information technology? How British executives perceive the key information systems management issues in the mid-1990s. *Journal of Information Technology*, 9, 223-238.
- Hacker, D. & Saxton, G.D. (2017). The strategic use of information technology by non-profit organization: Increasing capacity and untapped potential. *Public Administration Review*, 67(3), 474-487.
-

- Heinz H. (2012). Determinants of the adoption of information and communication technology: An empirical analysis based on firm-level data for the Swiss Business Sector. *Journal of Technology*, 3, 125-134.
- Hobday, M. (2018). The project-based organisation: an ideal form for managing complex products and systems? *Research Policy*, 29(7-8), 871-893
- Kinuthia S.M. & Rotich G. (2015). Influence of information and communication technology implementation factors on procurement performance in public sector: a case of Kenya power and lighting company limited. *International Journal of Social Sciences Management and Entrepreneurship*, 2(1), 248-261
- Mano, R.S. (2019). Information technology, adaption and innovation in non-profit human service organizations. *Journal of Technology in Human Services*, 27(3), 227-234.
- Morris, T. & Westbrook, R. (2016). Technical innovation and competitive advantage in retail financial services: A case study of change and industry response. *British Journal of Management*, 7, 45-61.
- Mwania, M. & Muganda, N. (2012). An investigation on the relationship between information technology (IT) conceptualization and bank performance. *Journal of Information Sciences*, 12(5), 1-13
- Namusonge, G.S. (2016). Influence of information technology practices in procurement on organization performance in public institution in Kenya: A case of Jomo Kenyatta University of agriculture and technology. *International Journal of Economics, Commerce and Management*, 4(5), 484-502
- Narimasa, Y. Nobukazu, A. & Woonho, K. (2022). Moderating effect of customer's retail format perception on customer satisfaction formation: An empirical study of mini-supermarkets in an urban retail market setting. *Journal of Retailing and Customer Services*, 1(2020), 1-9
- Oboreh, J., Egberi, K.A. & Egberi, E.O. (2022). Workforce gender diversity and performance of multinational companies in Nigeria. *Journal of Positive Psychology*, 6(4), 1582-1590
- Okeke, L.N & Okoye, N.J. (2021). Service quality and customer patronage: A study of selected commercial banks users in Anambra State. *International Journal of Trend in Scientific Research and Development*, 5(5), 1281-1289
- Okoro, E.G. & Ekwueme, C.M. (2021). Is accounting alchemy still the right medicine for firm's earnings and book value? Evidence from Sub-Saharan Africa. *Revista de Administração Mackenzie*, 22(3), 1-27. doi:10.1590/1678-6971/eRAMF210007
- Okoro, G.E. & Egberi, A.K. (2019). Peace accounting and its implication on economic growth: An autoregressive conditional heteroskedasticity approach. *Journal of Advanced Research in Management*, 10(2), 70-74
- Okoro, G.E. (2014). Augmented Dickey-Fuller and Johansen co-integration tests of oil price volatility and stock price in emerging capital market: A case of Nigeria. *International Journal of Management and Business Research*, 4(4), 265-271
- Okoro, G.E. (2016). Stock market performance and the augmentation of frontier economies: A comparative scrutiny of Nigeria and Mauritius. *Studies and Scientific Researches - Economics Issue*, 23, 13-20 <http://dx.doi.org/10.29358/scoco.v0i23.337>
- Peansupap, V. & Walker, D.H.T. (2015) Factors affecting ICT diffusion: a case study of three large Australian construction contractors. *Engineering Construction and Architectural Management*, 12(1), 21-37
- Schneider, K. (2017). Services hurt by technology: Productivity is declining. *The New York Times*, June 29: D1, D6.
- Shereen, N. Rozilah A.A., Muhammad, Z.H.A., Rohana, M.S. & Shafiq, S. (2021). The influence of after-sales service quality and product quality on customer satisfaction. *Global Business and Management Research: An International Journal*, 13(4), 289-298
- Wachira, D.M., Muturi, P.N. & Sirma, J. (2014). An evaluation of the perceived effect of ICT's on the performance of Sacco's in Kenya: Case of licensed Sacco's, Nairobi county. *Information and Knowledge Management*, 4(12), 14-32
- Wilson, M.N., Iravo, M.A., Tirimba, O.I. & Ombui, K. (2015). Effects of information technology on performance of logistics firms in Nairobi county. *International Journal of Scientific and Research Publications*, 5(4), 1-26
- Zuboff, S. (2018). *In the age of the smart machine*. New York: Basic Books Publishers Limited.