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Information Technology and Customer Satisfaction among Listed Banks in Nigeria

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Abstract
With the use of sophisticated and modern information technology equipment and other related facilities, Nigerian banks have been able to meet the needs of their customers through the provision of high quality information technology based products and service that suit the taste of their customers. The study explores the effect of information technology on customer satisfaction among listed banks in Nigeria. The study selected a sample of 168 respondents, using convenience sampling technique, from the study population. Data collected were analysed with use of simple percentage/cross tabulation method while the study hypothesis was tested through Chi-square statistical tool. Findings from the study show that information technology significantly affects customer satisfaction among the studied banks. The study concludes that the use of information technology in banking improves customer satisfaction to a greater extent. Hence, it is suggested for banks to keep abreast of changes and follow the trend in information technology for them to be able to continue meeting any changes in customers' preference.

Keywords: *Information technology, technological facilities and customer satisfaction*

1. INTRODUCTION

The race to globalization has brought epoch-making revolution into the tech industry which has led to the emergence of many mind-blowing information technology gadgets and telecommunication facilities. Although contemporary technologies have rationalized the structure of business organizations in every sector of the economy, banking sector is most impacted, in terms of business order. The major reason is that most of the new technologies are more skewed towards banking operations than any other type of business. There is no gainsaying in this, as almost every economic unit including household, business organization and government is linked to banking system. As a result of the new business order which advancement in technology has introduced into banking, it becomes necessary for every operator in the industry to embrace the modern technology and follow the trend in order to survive in the ever dynamic market. It is worthy of note that business managers find it difficult to do away with the new information technology, due to the fact that the success and survival in the modern economy hinge on the ability of individual organization to leverage on the latest technology in delivering products or services to customers and clients (Nitsure, 2003). In line with this, the ever increasing rivalry among the operators in the banking sector makes it difficult for banks to sustain their profitability and underscores the relevance of information technology as strategy to be more competitive and cost effective. Similarly, for profit maximization purpose, virtually all the operators in the banking sector have changed

the dimension and direction of their operations by moving from paper based system to technology based system, with the expectation of a substantial cut in the expenditures and appreciable increase in the revenues that would turn to maximum profit (Luiz & Anne, 2000)
However, before the advent and adoption of information technology in banking industry, almost all the banking activities and transactions were usually done manually. This old system of banking was characterized by many weaknesses. During the era of traditional banking, customers would have to be physically present in the banking halls before being able to make any transactions on their bank accounts, and most of the time they had to wait on queue for long time before being attended to. It was also evident that customers could only make transactions on their bank accounts during the weekdays, because most of the banks did not operate on weekend days. Due to this, banks' customers are often seen in large numbers on Friday, mostly to withdraw money. Another challenge that characterized traditional banking system was that virtually all the banking transactions can be done by customers at the branches where they had their accounts opened. For example, if a customer opened an account with a branch of First Bank in a particular location, that customer could only transact any business on his/her account at that particular branch, in most cases.
Moreover, it was difficult, if not impossible, to transfer money directly by customer from his/her account with a bank to another account in any other bank. Besides, people, majorly businessmen, used to go around and travel with a large amount of money to do their normal businesses, and this made them to face a lot of risk. All this negatively affected the amount of satisfaction being received by customers from their bankers. Hence, the adoption and deployment of sophisticated information technology, both hardware and software, by banks can remove most of the challenges mentioned above, and thereby ease the stress of their customers. It is on this premise that this study attempts to investigate the contribution of information technology to customer satisfaction among listed banks in Nigeria. Also, there are few empirical studies on internet banking and customer satisfaction in Nigeria, hence, this study. Meanwhile, in order to achieve the objective of the study, the below hypothesis is formulated and tested:

H_{01}: There is no any significant relationship between information technology and customer satisfaction among listed banks in Nigeria.

2. LITERATURE REVIEW

2.1. Information Technology and Customers Satisfaction

It is of paramount importance for every bank that has fully adopted modern information technology facilities as a means of providing and delivering its products or services to the customers, to be conscious of how customer view of quality of the services of the bank is influenced as a direct consequence of the paradigm shift from manual system to technological way of banking (Luiz & Anne, 2000). By virtue of this, it is a clear fact for banks to have insight into the fashions, preferences and tastes of customers, and then come up with contemporary strategies that would help in the design, development and delivery of high quality services that are affordable and accessible to customers.
When customers get more comfort from a particular technology based bank service, it makes the customers to be more satisfied, and with this, it is more likely for banks to be able to retain their existing customers and win new patronage (Hsiuju & Kevin, 2003). This may not come true in reality, because getting more comfort from products by customers may not bring any expected increase in customer satisfaction, mostly when it costs more to access and enjoy additional value or quality that is added to the product, than the amount of benefits to be derived by customers from the added value. The appreciable increase in the number of customers, turnover and profit which most of the modern banks experience can be traced to the use of information technology in their operations (Katz & Aspen, 1997).

Looking at this assertion critically, it may be difficult to accept or conclude that the use of information technology is the factor that is responsible for increase in turnover and profit in banking industry, because technological facilities are not the only resources being employed by banks in executing their operations. That is, there are other factors apart from technology engaged by banks in carrying out their activities. For example, the quality of board of directors and other management personnel, in terms of their expertise and integrity, may also have a critical role to play in organizational performance. This is more likely because no matter the quality and sophistication of organizational technological facilities, if not committed into the hands of right managers, the resultant outputs may be far below the expectation. In essence, for technology to be efficient and effective in its operation, it must be handled by highly experienced personnel, as technology cannot function itself without human involvement. In the submission of Tahir *et al.* (2014), it was indicated that more value can be created and embedded in a product in order to make customers derive more satisfaction from the usage of the product through a combination of sophisticated, but user-friendly information technology and well equipped personnel. Meanwhile, Hsiuju and Kevin (2003) made an argument that increase in product quality, efficacy of product marketing strategies, and revenue increase can be made possible when information technology is efficiently and effectively deployed by banks in delivering their services to customers. Durvasula *et al.* (2004) revealed that business organizations do commit huge resources into their operations in ensuring that customers get more satisfaction from their products and services. There is no doubt, this is due to the fact that ability of a company to satisfy the needs of its customers signifies that such a company has strength to retain its existing customers and gain more patronage. This is likely because customers who are rational human beings tend to build confidence in a product or service as well as the supplier or provider, as the case may, ordinarily when the product or service meet the need of the customers (Fornell, 1992).
Moreover, most of the bank customers and clients are more comfortable with the present day banking system that is based on information technology, perhaps because it is a new way of life (Mols, 1999). Meanwhile, in the words of Leow (1999), the perceived increase in bank customer satisfaction can be attributed to some relieves which customers enjoy from technology based services such as decrease in service costs, decrease in time spent in accessing services, increase in level of comfort and availability of round-the-clock service for seven days weekly. The argument that the use of technology as a means of providing services to customers reduces service cost may not be true because most of the modern banks are using technology as a medium to exploit customers. The impositions of different bank charges that are not justifiable on customer accounts are common nowadays compared with what was obtainable during the era of paper based banking. In the same way, the claim that the use of technology reduces the amount of time spent in banking and makes available 24 hour service for 7 days per week is very far from truth because 24/7 service can only be enjoyed by customers when there is uninterrupted internet facility throughout, which is uncommon, mostly in the developing economies like Nigeria.

Empirical Review

The transition from traditional mode of banking to modern banking system that is based on technology has provoked many studies among different researchers at different points in time, in a bid to ascertain whether the expected benefits from technology adoption have materialized or not. For instance, Priscilla *et al.* (2012) researched into how customer satisfaction in general is influenced by satisfaction derived from the use of technology. The study used data collected through online questionnaire from respondents. Thereafter, various regression analysis with ANOVA were performed on the data collected, and results reveal that satisfaction from the use of banking technology makes customers to be satisfied to a

greater extent. Muhammad and Kalthom (2014) carried out an investigation on how critical success factors of information technology are associated with the satisfaction of customers. Besides, it was examined whether the association between the two variables was mediated by trust or not. A sample of three hundred and forty nine respondents was taken from some selected banks, and questionnaires were used as a data collection instrument. Both SEM and Factor Analysis were used to analyze the data, and results show that all the critical success factors examined directly contribute to the satisfaction derived by customers, to some extent. It was also found that trust is directly related to critical success factors. Also, satisfaction is positively influenced by trust, and the association between critical success factors and satisfaction is mediated by trust.
Moreover, Mgbeze (2015) looked at the relationship that subsists between performance and information technology among bank employees in Nigeria. To achieve the aim of the study, a case study of Keystone Bank was used. The study used a sample of sixty respondents who were randomly selected, and out of the sixty copies of the data collection instrument administered; only fifty two of them were properly and completely filled, and thereby used for the study. The research hypothesis was tested through the application of Chi-square statistics, and results reveal that performance is directly and greatly related to information technology in the studied bank. Furthermore, Sahem (2015) examined how bank capital and personal attributes of the customers are affected by information technology adoption in banking industry in Jordan. The data for the study were gathered through copies of questionnaire administered to employees and customers of the selected banks. Data obtained were analysed using descriptive statistics, T-test and Tree cluster analysis. It was revealed that the capital of the studied banks contributes largely to their growth. In addition, findings show that the personal attributes of the respondents influence the use of information technology. Bulo and Nenbee (2013) conducted a study on the relationship between performance and banking automation among money deposit banks in Nigeria. The study used data collected from two hundred respondents sampled from staff members of the twenty five selected banks. The data were analyzed using Kendall Coefficient of Concordance, and findings show that three elements of automation including payment automation, service delivery automation and telecommunication network facilitate better performance among sampled banks.

Meanwhile, Mirriam and Wycliffe (2015) examined information technology adoption and employees performance among Nairobi banks. The data for the study were collected through questionnaire administration to one hundred and fifty employees randomly selected from three banks. The study employed regression analysis to assess the relationship between the variables used, and results revealed that employee productivity is largely influenced by information technology components.

3. RESEARCH METHOD

This study used descriptive research design as a guide in determining what data to be collected, where to collect the data, from whom the data are to be collected, how the data are to be analyzed and results interpreted. Research design is mostly used when the researchers are interested in assessing the characteristics of the study population by opinion poll, which is the case of this study and thereby making descriptive research design the most appropriate. This study has a target population consisting of all banks that are listed on Nigerian Stock Exchange from which a sample size of 168 respondents were selected through convenience sampling approach. The choice of this method of sampling is as a result of its simplicity in administration.

The study used primary data which were gathered through the administration of a structured questionnaire on the selected respondents. However, out of the 168 distributed copies of questionnaire, only 150 copies were returned valid for analysis, as 14 respondents failed to return the copies administered to them while 4 copies were not properly completed and thereby not included in the analysis. Additionally, to ensure that the items in the research instrument adequately cover the entire scope of the study and relate to the problem of the study, copies of the original questionnaire were sent to three experts in academics for their professional comments and suggestions. Then, the actual field work took place after making necessary adjustments to the original questionnaire based on the recommendations of the three experts.
The study variables are; customer satisfaction which is the dependent variable and information technology which is the independent variable. The variables were measured with questions raised in the research instrument while responses obtained were analyzed using simple percentage/cross tabulation to establish the effect of information technology on customer satisfaction. The use of Chi-square statistics at 0.05 significance level was used to test the research hypothesis with the aid of statistical package for social sciences (SPSS, version 20.0), so as to ascertain whether the relationship between the two variables is significant or not.

4. RESULTS AND DISCUSSION

Table 1 shows that 62.7% and 20.0% of the total respondents strongly agreed and agreed respectively that the use of information technology in providing services to customers by banks relieves customers the stress and burden of carrying large amount of cash from one place to another for their business activities. This may be due to the fact that internet banking through mobile phones or computers allows bank customers to transfer money from their accounts to other accounts without visiting banking hall. Besides, debit/credit cards make it possible for customers to purchase items from online stores. However, 5.3% and 12.0% disagreed and strongly disagreed respectively with the statements that information technology reduces the risk of carrying large amount of cash around by bank customers. It is crystal clear from the simple analysis given above that majority of the respondents suggest that information technology usage in banking lessens the burden of customers in moving physical cash around particularly for business transactions.

Table 1: Results of Simple Percentage Analysis

	Items* Response Cross tabulation							
			Responses				**Total**
	Items		**SA**	**A**	**D**	**SD**	
1	Information technology reduces the risk of carrying large amount of money around by customers.	Count	94	30	8	18	150
		% within Items	62.7%	20.0%	5.3%	12.0%	100.0%
2	Information technology reduces the time which customers' spends on queue in banking hall.	Count	64	72	6	8	150
		% within Items	42.7%	48.0%	4.0%	5.3%	100.0%
3	Information technology makes it easy for customers to transact business for 24 hours daily.	Count	76	46	16	12	150
		% within Items	50.7%	30.7%	10.7%	8.0%	100.0%
4	Information technology makes banking to be more convenient for customers.	Count	60	58	15	17	150
		% within Items	40.0%	38.7%	10.0%	11.3%	100.0%
5	Through information technology, there is improvement in banks′ customers' satisfaction.	Count	78	33	18	21	150
		% within Items	52.0%	22.0%	12.0%	14.0%	100.0%
Total		Count	372	239	63	76	750
		% within Items	49.6%	31.9%	8.4%	10.1%	100.0%

Source: *Authors' computation, 2021*

Furthermore, the Table 1 shows that 42.7% and 48.0% of the respondents strongly agreed and agreed respectively that adoption and deployment of information technology in banking reduces the time which customers spend on queue in banking hall while waiting to be attended to by bank officials. This may be explained as a result of the fact that customers can deposit money through automated deposit making machine, while cash withdrawals can be made through automated teller machine (ATM) without physical involvement of bank officials. It is also possible for customers to make enquiries about financial transactions on their bank accounts without physically meeting any bank official through phone calls. This indicate that a substantial number of the respondents support the view that information technology reduces time spent on queue by customers in banking hall, while only few of them do not support the view. Moreover, it was noted that a sizeable number of respondents hold the opinion that information technology through its methods and equipment permits bank account holders to make transactions on their accounts for 24 hours daily throughout the week. This is evident as 50.7% and 30.7% of the respondents, which when combined together constitute majority by aggregate of 81.4%, strongly agreed and agreed with the statement that information technology makes it easy for customers to transact business on their bank accounts for 24 hours. The results can be supported by the argument that online banking enhances transactions on customers' bank accounts notwithstanding their locations.

It can also be noted that a substantial number of respondents support the view that through the provision of information technology products and services by banks, customers are able to make transactions on their bank accounts at their own convenient time without necessarily having to be physically present at the banking hall. This is evident as 40.0% and 38.7% of the respondents strongly agreed and agreed respectively to the statement, which is 78.7% in aggregate and constitutes majority. The results can be explained by the fact that it is possible for customers to carry out their banking transactions at any place and any time through some information technology facilities such as mobile phones, Point of Sale, Automated Teller Machine, internets and many others, without going to banks. However, only 10.0% and 11.3% of the respondents disagreed and strongly disagreed with the statement totalling 21.3%.

In addition, Table shows that 52.0% and 22.0% of the respondents strongly agreed and agreed respectively that information technology improves bank customer satisfaction. This result can be supported by the argument that information technology has made it possible for bank customers to enjoy varieties of products and services at possible least costs. It can also be linked to the fact that technological facilities has made it possible for customers to make certain banking transactions at home, office and any other places at their comfort and convenience without going through any stress associated with manual banking. For example, with the help of technological facilities, customers not necessarily need to visit banking hall to check his bank account balance, to make enquiries on his financial status, to discuss credit facility (overdrafts and loans) and lodge complaints, as all these transactions can be done by customers via online channels. However, the results show that 12.0% and 14.0% of the respondents disagreed and strongly disagreed with the statement. Going by the empirical evidence available, it is explicit to infer that majority of the respondents, which is 74.0% support the statement while only few represented by 26.0% do not support the statement.

Generally, it is observed in the total results shown in the above table that 49.6% and 31.9% of the respondents strongly agreed and agreed respectively that customer satisfaction is enhanced through information technology facilities among the studied banks in Nigeria. In aggregate, this is 81.5% which is majority when compared with the percentage (18.5%) of those respondents who do not support the statement that information technology improves bank customer satisfaction. In summary, based on the stated evidences, it is sufficient to draw an inference that information technology contributes positively to customer satisfaction.

Meanwhile, Table 2 reveals that the Chi-square (χ^2) calculated is 51.172 which is greater than Chi-square (χ^2) critical value of 21.03 at 0.05 significance level given 12 degree of freedom. In as much the calculated value for (χ^2) is more than the tabulated value, then the null hypothesis which states that there is no significant relationship between information technology and customer satisfaction is rejected while the alternative hypothesis which states that information technology and customer satisfaction are significantly related is accepted.

Table 2: Results of Chi-Square Tests

	Value	**Df**	**Asymp. Sig. (2-sided)**
Pearson Chi-Square	51.172[a]	12	.000
Likelihood Ratio	52.039	12	.000
Linear by Linear Association	6.382	1	.012
N of Valid Cases	750		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 12.60

Source: *Authors' computation, 2021*

5. CONCLUSION AND RECOMMENDATIONS

The advent of information technology has really brought a dramatic revolution into the banking industry, in terms of mode of operation, sophistication of technological facilities, range of products and services available for customers, customer convenience and comfort in accessing the available products and services. As a matter of fact, information technology usage in bank service delivery has contributed a lot to the acclaimed success of many Nigeria banks. This study examined how adoption of information technology impacts on the customer satisfaction among listed banks in Nigeria. The statistical results showed that the use of information technology facilities in providing services to customers reduces the risk of carrying large amount of cash around by customers. Findings also reveal that time spent on queue in banking hall by customers is reduced as a result of information technology adoption by banks. Moreover, statistical evidence depicts that the information technology usage makes it possible for customers to have access to banking services for 24 hours daily and 7 days weekly. Besides, results reflect that adoption of information technology by banks in providing services to customers gives some convenience and comfort to customers in making transactions on their bank accounts. Based on the empirical evidences available, the study concludes that information technology improves customer's satisfaction among the listed banks in Nigeria.

The study therefore recommends that banks should ensure that necessary and adequate monitoring devices, mechanisms and sophisticated security system are strategically mounted and well positioned around the technological facilities in use to deliver products and services to customers. This is to ensure safety and protection of customers' accounts against hackers, other online fraudsters and any physical attacks; in particular, when making transactions on automated teller machines or when using other available technological facilities and accessing information technology based bank products and services. Banks should also ensure that uninterrupted internet facility is always available for customers to enjoy the 24/7 service that characterized internet banking as acclaimed. Banks should embark on awareness programmes towards sensitizing existing and potential customers on variety of information technology products and services available and on how to use and access such products and services by customers. Besides, banks management should ensure that adequate cash is always available in the automated teller machines in that cash is loaded into the machine, from time to time, when the set minimum cash level is reached without waiting for the cash in the machines to be exhausted. Then the issue of unnecessary and unjustifiable bank charges that is rampant nowadays needs to be addressed, as many customers usually complain of multiple charges on the same transaction.

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