

Influence of technological usage on customer service and customer satisfaction in the banking sector

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Abstract: Technology-based self-service banking enables customers to complete services for themselves without support from bank staff. The study investigated the influence of technological usage on customer service and customer satisfaction in the Nigeria banking sector in Nigeria. The study made use of two objectives, which specifically find out the influence of technological usage on customer services and the influence of technological usage on customers' satisfaction. Two null hypotheses were formulated to guide the study. A survey research design was adopted. The population of the study were commercial bank customers in Ondo State, Nigeria. A purposeful sampling technique was used to select one hundred participants from ten commercial banks in Ondo State. Results of the study reveal that technological usage has a significant influence on customer service [$F(1, 98) = 194.244$; there is a significant influence of technological usage on customers' satisfaction [$F(1, 99) = 27.452$; $p < 0.05$]. It was concluded that the use of technologies in customers' services can be used to increase the efficiency of banks.

Keywords: Commercial banks, Customer satisfaction, Customers' services technology, e-banking.

1. Introduction

Today, almost all the Nigerian commercial banks provide automated services, better known as Technology-Based Self-Service Banking (TBSSB). Information technology is considered one of the greatest transformations in financial institutions. Consequently, technology has led to new innovative services, creating market opportunities, and introducing new business information systems (Adanlawa and Chaka, 2023; Kessey and Abassah-Wesley, 2020). Different types of technology-based self-service banking are identified by Kessey and Abassah-Wesley (2020) as mobile banking, internet banking, automated teller machine banking, and telebanking. However, technology-based self-service is changing the way the financial markets use innovative resources with enterprise deliverables (Molina and Rajagopal, 2023; Ravada, 2019). The emergence of TBSSB has led to the innovation of new strategies for improving and facilitating customer satisfaction (Singh and Nayak, 2023). The transformation and growth of information systems in the banking industry has led to inventions and advances in developing countries, which has introduced a new system of processes in ICT in those countries (Chaka and Adanlawa, 2022). The rise of TBSSB in developing countries has played a significant role in determining the successes of online purchases and electronic commerce, as well as delivering services and improving the collaborative flow of information (Xaba et al., 2024; Singh and Nayak, 2023). Technology-based self-service Banking enables customers to complete service for themselves without support from bank staff (Nwachukwu et al., 2023; Msweli, 2020). TBSSB includes all sorts of computing devices used for transactions in the bank, such as automated teller machines

(ATM), electronic mobile banking, and internet banking services, among others (Nwachukwu et al., 2023). It is an interesting self-banking service where a customer could do different transactions without any support from the bank employee. There are many advantages to using the automated TBSSB service, which include lower customer influx, a low cost of operations, and convenient self-service banking (Msweli, 2020; Fate, 2017). These have eased the Nigerian banking culture and successfully standardised their business operations. The technology transaction has brought about social change such as user control of operations, less restriction, environmental management, and convenience, among others (Lu et al., 2018; Wheelen et al., 2018). Globalisation in the banking sector has improved ways of delivering service to customers (Nkomo and Adanlawo, 2024). Because of the innovative systems of technology, customers have to choose from diverse alternatives to the services that they want (Pisano, 2015). The technology-based self-service banking services that the financial institution provides to customers are reliable and dependable 24 hours a day, 7 days a week, without interruption.

The development of technology in all aspects of human life has created a fundamental change. Reddy and Adanlawo (2018) argue that global networking and computer technologies have changed the way people do things. With the rapid development of information and communication technology in the world and the profound impact of electronic devices to facilitate and accelerate tasks, the importance of these devices and their applications is on the rise (Aceto et al., 2018). Meanwhile, the rapid development of information technology has caused major changes in the money and funds transfer systems in banking and has provided some new concepts, such as electronic money and electronic transmission.

This concept has created a new type of banking, entitled "Electronic Banking." In today's competitive world, distributing more quality services is regarded as a fundamental strategy in most service organisations. According to a variety of banks, the development of electronic banking, customer needs, and the demands for them have been more important. The banks have their basis and philosophy of providing quality services to customers. Therefore, the establishment of electronic banking and the improvement of e-banking services should top the priority of today's banking (Thanasi-Boçe and Kulakli, 2023; Fan et al., 2020).

2. Objectives of the Study

The general objective of the study is to investigate the influence of technological usage on customer service and customer satisfaction in the banking sector in Nigeria. Specifically, the study is to:

1. Find out the influence of technological usage on customer service.
2. examine the influence of technological usage on customers' satisfaction.

3. Hypotheses

1. There is no significant influence of technological usage on customer service.
2. There is no significant influence of technological usage on customers' satisfaction.

3.1. Technological Customers Service in the Banking Sector

There are different categories of services based on technology. Customer technology refers to the ability of the customer to use technology, such as an ATM. Technological services have led to a widespread commercial influx of internet marketing. First is the use of ordinary companies and users through their websites, which is often achieved with an overall view of the company, a public relationship, and being in the world of electronic commerce. The next most common usage has more information about products. Third-wave applications are predominant in electronic sales, which use the Web to buy or sell commodities (Stephens and Barbier, 2021; Kessey et al., 2020). This story takes us to the fourth wave of emerging technology, called the electronic service, which is still being applied.

Technological Service is the leading provider of advanced applications of internet technology. For example, companies can use a smart interface through tracking and data mining on Web sites, develop an awareness of patterns and customer needs, and provide outstanding service. On the other hand,

customer relationships can be developed based on the client's responses to the proposals. Technological service can be seen from three different perspectives:

1. The first thing is to call it "a very wide vision or macro" technological service, which is also synonymous with e-commerce.
2. Technological service means visibility, what we can read as "services special, "which provides specialised services offered to Internet users.
3. The third thing is "micro vision," which is part of customer service on a website (Ravada, 2019).

3.2. Customer Quality Service and Technology Based Self Service Banking (TBSSB)

Customer service quality, which means ensuring customer satisfaction at all times, has become a major factor of consideration in determining the success and growth of enterprises (Adanlawo et al., 2023). Service quality refers to the general evaluation of service delivered through electronic channels, such as the Internet, telephone lines, or automated services. Sindwani and Goel (2016) examine the relationship between service quality, customer satisfaction, and self-service technology. Similarly, Pooya et al. (2020) assessed the use of self-service technology and found that customers have begun to accept the new way of accessing various e-services, including banking services. In addition, Nwachukwu et al. (2023) reported an increase in the number of financial institutions that were using self-service and other service technology such as automated teller machines (ATM), telephone and internet banking, as well as mobile application banking. All of these could be utilised on various independent platforms to meet the customers' needs without support from the bank staff. Another impact of technology-based self-service on customer satisfaction was reported by Djelassi et al. (2018). In their case, they found that the corporate image had an effect on customers' perceived value of the service. This encouraged the banking sector to pay more attention to their customers' perceived value by improving their service quality. Singh and Nayak (2023), on their part, focus on mobile banking, which he believes provides a positive influence on service delivery at retail banks in Nigeria.

The concept of technological services will be introduced as one of the key factors in the success of e-commerce. Based on electronic service quality, service quality is one of the critical factors in determining the success or failure of e-commerce. Electronic services provide details about the movement of money between clients' accounts and provide information related to the exchange rate on a daily basis. Web site design, as it is attractive, user-friendly, and easy to work with the bank's website, even at low-speed internet, is one of the factors affecting the quality of electronic services. Confidence in the bank's name and brand helps customers' authoritative information in regard to the site and is heartened that, compared to the use of electronic services.

3.3. Customer Satisfaction in Technology Based Self Service Banking (TBSSB)

Customer satisfaction in the business world can be defined as the method by which services and products are supplied and delivered by industry in order to meet the customer's expectations. Customer satisfaction could also be viewed as the feelings and judgments of quality service experienced by the customers (Nkomo and Adanlawo, 2023; Chan et al., 2022). It is generally agreed that customer satisfaction is fundamental to ensuring business success. When customers are satisfied with a business contract, it will ensure market growth for the organisation in the near future. The impact of TBSSB on customer satisfaction has been found to be influenced by service quality in a study conducted by Ibrahim et al. (2016), which considered mobile banking technology. On the other hand, Ali et al. (2016) examine the dependability and responsiveness of automated teller machines (ATMs) and how they determine customer satisfaction. Customer satisfaction presents an evaluation framework for the sustainability of technology systems and excellence management. The impact of technology on excellence in service delivery was examined by Chen et al. (2021) in China. In a different situation in the United Kingdom, self-service was also studied with the aim of understanding customer motivation, customer intention, market orientation, segmentation, and online shopping (Park et al., 2021; Jayawardhena et al., 2007). However, studies of TBSS cannot be complete without mentioning the work of Yang and Fang (2004).

They added to the understanding of service quality and atmosphere setting for virtual security business services. Yang and Fang, in their conceptual framework of services and advertising of information management systems, show that service quality can also be credited to network operational platforms, using an effective and efficient online delivery of products and services. Ginting et al. (2023); Hsu and Lin (2023); and Blut (2016) assert that service delivery should include a construct and criteria by which the customer can evaluate electronic service quality online. That customer evaluation process would reveal customers perceptions and satisfaction. with self-service technology in banking.

3.4. Electronic Customer Loyalty

Loyalty is an important factor in the success of the organisation and makes a positive impact on it. Customer loyalty refers to a situation where the customer is located, at higher levels of satisfaction, to purchase something permanent, not paying attention to competitors, and praising the organisation, among others. The increasing number of electronics consumers has caused banks to pay attention to the benefits of the loyalty of their customers (Sabi, 2014). Loyal customers are not in search of products and services at lower prices, but they will, in exchange for the product or service with better features, pay a higher price, and the seller will offer products and services to others. In a virtual environment, this is a rich source of potential profit for the organisation because, because of lower operating costs, customers are able to afford more. Thus, even though it is more expensive to create and manage online compared to traditional, the relationship between loyalty and profit will be one of more rapid growth (Chaka and Adanlawo, 2023).

3.5. Convenience of Technology for Self-Service

The convenience of self-service technology influences customer satisfaction. The ease of use of the technology will significantly influence users. According to Msweli (2020), the power of ease of use in technology adoption is closely related to the effort that the user makes in dealing with the complexity of the technology. Convenience is therefore an attribute of TBSB that contributes to customer satisfaction. It relates to ease of use and to the effort the customer needs to make in order to succeed using the technology (Ibrahim et al., 2016). Ease of use is also identified by customers as an important factor in ensuring customer satisfaction. Ease of use also relates to the amount of effort a customer puts in to effectively use the system and perform the process (Ali et al., 2016).

4. Research Methodology

The survey research design was adopted with the use of questionnaires to obtain information from the participants in the study. The purpose of using this research design is to establish the effect of the independent variables on the dependent variables and the level of influence of the independent variables on the dependent variables (Adanlawo et al., 2021). The population for the study is the customers of commercial banks in Nigeria. The sample size for the study was 100 customers who patronise the banks. The purposeful sampling technique was used to select 10 customers each from 10 commercial banks. The data collected from the participants were analysed using inferential statistics; regression was used to analyse hypotheses 1 and 2, respectively, at the 0.05 level of significance.

5. Results

Hypotheses 1: There is no significance influence of technological usage on customer service

Table 1a.
Summary of regression analysis.

Model	R	R square	Adjusted square R	Std. error of the estimate
1	0.715a	0.445	0.441	5.16692

Note: a. Predictors: (Constant), technological usage.

Table 1a indicated that $R = 0.715$, which implies that there was a significant influence between the independent and dependent variables. The R square value of .445 indicated 44.5% of the observed variance of technological usage on customer service.

Table 1b.

Summary of regression showing significance influence of technological usage on customer service.

Model	Sum squares of		Mean square	F-Cal	F-Cri	Sig.
1 Regression	3372.53	1	3372.53	194.244	3.27	000a
Residual	1701.51	98	17.362			
Total	5074.04	99				

Note: a. Predictors: (Constant), customer service.
b. Dependent variable: technological usage.

From Table 1b, technological usage has a significant influence on customer service [$F(1, 98) = 194.244$]. Therefore, null hypothesis 1 is rejected. This implies that technological usage has a positive impact on customer service. As such, the utilisation of technologies will enhance e-banking and self-service and would facilitate the effectiveness of customer service to render quality services towards aiding customers' satisfaction.

Hypothesis 2: There is no significance influence of technological usage on customers' satisfaction

Table 2a.

Model summary.

Model	R	R square	Adjusted R square	Std. error of the estimate
1	0.376 ^a	0.143	0.125	1.91603

Note: a. Predictors: (Constant), technological usage.

Table 1a indicates $R = 0.376$, and the R square value of .143 indicates 14.3% of the variance that is accounted for in the model, which is low. The independent variable accounted for 14.3% of the variance in the dependent variable. i.e., the regression model is poorly fit.

Table 2b.

Regression analysis showing the significance influence of technological usage on customers' satisfaction.

Model		Sum of squares	df	Mean square	F-cal.	F-cri.	Sig.
1	Regression	162.513	2	78.617	27.452	3.38	0.000 ^a
	Residual	1165.873	97	3.626			
	Total	1254.587	99				

Note: a. Predictors: (Constant), technological usage
b. Dependent Variable: customers satisfaction.

From Table 2b above, there is a significant influence of technological usage on customers' satisfaction [$F(1, 99) = 27.452$; $p < 0.05$]. Therefore, null hypothesis 2 is rejected. This implies that technological usage enables customers to derive satisfaction by making use of self-service technology without going to the bank.

6. Conclusion

The world economy has witnessed extensive transformation in the field of information exchange and the development of information and communication technologies. It is impossible to overstate the significance of e-banking innovation and technology in the global banking sector. In order to improve service quality, banks now need to be technologically innovative and upgrade with new technology-related features. Since relationships depend heavily on customer satisfaction, TBSSB service quality may

not be the only factor influencing customer satisfaction. Consequently, banks must also identify other elements that are vital to raising customer satisfaction, such as value, reputation, and trust. However, by encouraging more people to participate in the financial system, ATM technology has improved banking services in a largely unbanked economy. This has led to a rise in financial inclusion. In an era when numerous economies are attempting to encourage cashless transactions, banks have a big role to play. Banks should rethink how they engage with technology and innovation in developing nations. It might be necessary to redesign and encourage electronic technology and innovation in the banking sector in order to foster growth. Customers would hold less cash as a result in the short term, and through innovation and technological research, cashless economies would eventually emerge. The study concludes that the use of technologies in customer service will surely increase the efficiency of banks.

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