



SELF SERVICE TECHNOLOGY AND CUSTOMER LOYALTY IN THE BANKING INDUSTRY: A STUDY OF RETAIL BANK CUSTOMERS IN ANAMBRA STATE.

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Abstract

The emergence of information, communication technology (ICT) and its wide application in the banking industry lead to the development of self-service technology (SST) based products like automated teller machine (ATM) internet banking among others. In view of this banks have invested heavily in the innovation with the aim of attracting and holding customers; hence the aim of this study is to evaluate how these SST products impinge customer loyalty among the retail banking customers in Anambra State. The question is how does this affect customer loyalty in the banks? The study is a survey research and is based on a statistically determined sample of 246 respondents selected from among some of the major towns in the state out of which 236 respondents returned duly filled and usable questionnaire. Questionnaire is the major instrument for data collection and this will be self-administered to the respondents. The stated hypotheses were tested using multiple regression analysis. The results of the analysis show that security of SST, reliability, competence and accessibility have significant influence on customer loyalty with in the retail banking industry. To further improve the service quality, SST service should be able to provide enhanced interactivity, diversified offerings, and facilitate customers to participate in improving the service encounter with ATM and make it a memorable and pleasant experience. Banks should develop strategies to motivate non- users through awareness, education, extending personalized services, and demonstrating the functions of SST banking services. This is more so as the study has shown that consumer awareness is highest among ATM users. It is evident from the study that security, reliability, accessibility and competence have relationship with SST. Bank management should monitor the environment and identify the trends through marketing intelligence. Further studies could be conducted to check the socio-demographic trends in consumer use of the SST channels since demographic variables are dynamic.

Keywords: self-service technology, service quality, banking industry, customer satisfaction, Atm.



Introduction

Technology has a great impact on the way organizations function, create, produce and deliver. The adoption of technology by firms has helped them to get quicker access to information, make better and informed decisions. This helps to change the way traditional business operate and also help to develop new practices. One of the important technological applications is Self-Service technology, especially within the service industries. Self-Servicing technologies are those that allow the customers to carry out the service on their own, without the help of the employees of the organization. Put pointedly, Banks are increasingly using technology in their efforts to reach and serve their customers effectively, and as a result, it is important to understand the impact of these technologies on customers' loyalty.

The evolution of Self-Service Technology (SST) has tremendously changed the way customers' interact with firms to create service outcomes. In a typical banking industry, before the invention of SST, all the services bank can render to the customers are performed by the staff of the bank ranging from deposit, withdrawal, transfer and interaction with customer service personnel. The inconsistency of the staff to render required service quality to massive foot-force that enters the bank in daily basis may lead to dissatisfaction among the customers. More so, Inferior service quality leads to unfavorable behavioral intentions, hence leads to customer defection from the organization, which in turn leads to lost customers and increased costs associated with attracting new customers (Zeithaml, & Parasuraman, 1996). To comb this malice, service providers especially bankers now deploy self-service channels such as Automated Teller Machine (ATM). These channels offer a number of strategic advantages to bank managers for customer loyalty.

Self-Service Technology is devices and machines that are facilitated by information, communication and the internet and allow customers to perform some activities without the presence of an employee from the organization. They include ATMs, online banking, internet banking and Point of Purchase (POS) terminals. By deploying SST, service providers can deliver better quality products and convenient solutions to customers and thereby engender customers' satisfaction and loyalty. Customer loyalty is necessary to ensure corporate survival and profitability because it is much more expensive to acquire a new customer than to retain existing ones. In addition, loyal customers act as advocates for the firm and are usually willing to recommend the firm to other potential customers.

Accordingly, banks have resorted to adopting technology based self-service channels that promise to remove the constraint of time, distance and communication. The adoption of self service technology has drastically reduced the foot force in typical banking industry. Over the decade, there has being a drastic shift from omni-channel (customers that use both digital and physical channels) to omni-digital (customers who use just the digital channel). As extracted from PwC. (2017), there are 46% users of omni-digital compared to 27% usage in the year 2012. Evidently, customers use self-service technological channels 20-30times monthly and only visit bank branches 2-3 times monthly with serious service need (miller, 2016).



From the banking institution's point of view, automated self-service users are no more looked at as customers only, but rather as employees, since they are more involved in co-creation of their services (Sindwani&Goel, 2017). Another identification of SST in banking services is its competitive advantage and its use as a weapon of returning a benefit that justifies the initial investment (Davies et al., 1996). SST is a win-win situation for banks and their customers; as the benefits are in form of lower cost of transaction and lesser customer load on branches (Sindwani&Goel, 2017). Owing to the recent focus and massive investment by banks on the self-service channels, it is therefore imperative to study customer loyalty in light of the new developments. SST channels are perhaps regarded as tools to maintain customer loyalty. However, it is still unclear if the effects of these SST on consumer behavior yield to customer loyalty in the retailing banking context.

Research on automated banking service quality is given due importance as it is found to have effect on customer loyalty (Al-Hawari, Hartley & Ward, 2005; Santos, 2003). On the global facet, Plethora of researches (e.g Shblidigbal 2017; Ding, Verma&Igbal 2007; susianto&Fachira 2015; Lan 2013; Niemezjk, chair, Gray& Batman; diu, Lee, Chao 2012; &Sindwani&Goel, 2017) have been carried out on this area, of which majority of the studies on technology based self-service banking quality covers only one of the automated banking channels. However, focus of these studies is either on Internet banking or on ATM banking. In this era of technological advancement, customers are using more than one automated banking channel(Omni-digital) to avail services. Therefore, in bid to gain a holistic insight into the concept of SST, it is imperative to study all SST channels to present the overall picture of technology based banking in a typical facet of a developing country. This study utilises security, reliability, accessibility and competence. To get the comprehensive picture, in the present study broad attributes related to all channels of SST service quality are grouped into the four dimensions and their impacts on customer loyalty is examined

Underpinning Model

E-service Quality Model

Many researchers have examined electronic service quality as an emerging ICT artifact from the perspective of user adoption of information technology (IT) (Zhou et al., 2010). Service quality in its contemporary conceptualization is a comparison of perceived expectation(E) of a service with perceived performance (p), giving rise to the equation $SQ=P-E$ levis and booms (1983). The phenomenon of service quality emanates from expectancy-disconfirmation paradigm (oliver et al 1994). Scholars have treated service quality as very difficult to define and measure due to the inherent intangible nature of service which is often experienced subjectively (gonroos et al 2000).

Service quality has been evolving from time to time. In its evolution process, some of its determinants and elements are placed by more pertinent element. One of the earliest attempts to



grapple with the service quality concept emerged from Nordic school where they proposed that service quality is seen as having two basic dimensions which are technical quality and functional quality.(extrinsic and intrinsic), (gronroos, 1984).

A model of service quality, based on the expectancy-disconfirmation paradigm as developed by A.parasuraman, Valarie, A Zeithaml and lenberry identifies the principal dimension of service quality and proposed a scale for measuring service quality known as SERQUAL. The model originally identified 10 dimension of service quality that influences customer perception of service quality (parasuraman, 1985). However, further research showed that some of the dimensions were found to be auto correlated and the total number of the dimension was reduced to five Reliability, Assurance, Tangible, Empathy and Responsiveness with the acronym (RATER).

Given the widespread use of internet and ecommerce, researchers have sought to define and measure e-service quality. E-service quality is increasingly recognized as an important aspect of electronic commerce (Santos, 2003). According to (Santos, 2003) E-service quality has incubative and active dimension. Incubative consist of ease of use, appearance, linkage, structure, layout and content while active dimension consist of reliability, efficiency, support, communication, security and incentive. In this study, e- service quality model was adapted and competence inculcated from the work of Parasuraman et al (1988). Competence was inculcated to enable the researcher pick a stand on the evolving debate on the predictiveness or non-predictiveness of the variable.

Variable extracted and used in the study are; Reliability, Competence, Accessibility and Security to evaluate the impact of customers' loyalty with respect to e-service quality in bank. Finally, the suitability of this model is based on fact that in this literary context, SST is concerned with the performance of self-service channels which are mostly internet enabled and e-service quality is interested in the performance of self-service rendered over the internet

Self-Service Technology

Self-Service Technologies are services that are performed by customers themselves using various types of technological innovations, such as ATMs, the internet, internet banking and interactive kiosks (Amanda, Nick and Leonard, 2007). They represent an alternative way of service delivery using innovative technologies for complementing or even replacing personal services.

Customers value the convenience, consistency and self-control of automated transactions over a friendly smile, while companies value the increased coverage, low cost of operation and reliability of automating transactions. It is common practice for individuals to encounter long lines and companies that are closed when you want to do business, as a result, opportunities to conduct transactions online or using self-service technologies have become a welcome alternative to most consumers. Self-Service Technology (SST) channels are classified into three (3) main categories



based on their purpose, namely: customer service, transactional and self-help (Langeardet *al.*, 1981).

Customer Loyalty

The recent years have shown a growing interest in customer loyalty. The globalization competition, saturation of markets and development of information technology have enhanced customer awareness and created a situation where long-term success is no longer additional through optimized product price and quality. Instead, companies build their success on long-term customer relationship. According to former studies, it can cost as much as 6 times more to win a new customer than it does to keep an existing one (Rosenberg & Czepiel 1984). Hence, we can see that the increase and retention of loyal customers has become a key factor for long-term success of a company. The new catch in marketing has moved from winning new customers to the retention of existing ones.

Customer loyalty, the main consequence of customer satisfaction, has been defined and measured in various ways over the past decades. Oliver (1997), defines customer loyalty as, "*a deeply held commitment to re-buy or re-patronize a preferred product or service consistently in the future, despite situation influences and marketing efforts having the potential to cause switching behaviors.*" According to the literature on loyalty, customer loyalty has several distinct dimensions. The two most important dimensions are the behavioral and attitudinal components, (Day 1969; Jacoby and Kyner 1973; Yi 1991). Earlier researches conceptualized customer loyalty as a behavior (Dick and Basu 1994; Jacoby and Chestnut 1978). Behavioral loyalty signifies actual repeat of purchasing behavior, or the likelihood of repeat product/service purchases from the same supplier.

Hypothesis development

Relationship between Competence and customer loyalty

This is the ability of an SST channel to serve a customer satisfactorily. Competence is measured against the perceived level of service delivery which a customer will receive if such service were being performed by a human being (Sindwani et al., 2017). On competence, the customers desire that the SST channels can perform the required task without any hiccups or challenges which may require external interventions. Meuteret *al.*, [2000], discovered that customers were more satisfied when the SST channel delivered the service smoothly, timely and without need for human intervention. Also users of mobile banking systems who could easily check their account balance and make cash transfers without any errors showed high level of loyalty. Based on the foregoing, we therefore hypothesized as follows:

H₁: competence has a positive and significant effect on customer loyalty.

Relationship between reliability and customer loyalty

This is the assurance or probability that a particle SST channel will perform the task or service it is designed to, when accessed by a customer (Zeithaml et al., 1996). Miller, (2006) described reliability as the ability of the SST channel to function at a specified moment or interval of time. Subjects of interest under reliability include: Network reliability, Network connectivity and



Software reliability. , Zhu et al. (2002) argued that '*reliability has a direct positive effect on perceived service quality and customer satisfaction in electronic banking systems*'. The aforementioned reliability indexes contribute to the efficacy and reliability of SST channels. Based on the findings, we hypothesis

H₂: reliability has a positive and significant effect on customer loyalty.

Relationship between Accessibility and customer loyalty

Accessibility refers to ability or ease with which customers can perform transactions on their accounts (Xu, 2014). This incorporates the different channels with which the bank customers can make use of their accounts using the Self-Service channels. The ability of the customers to access the channels as when needed has shown to have significant effect on satisfaction. The channels available to customers to perform transactions include: ATM, POS, Mobile banking and Internet banking. (Makanyeza&chikazhe, 2017; Iqbal&Masood 2017) in their study found that accessibility of SST channels have significant effect on customer loyalty. Thus, we hypothesis

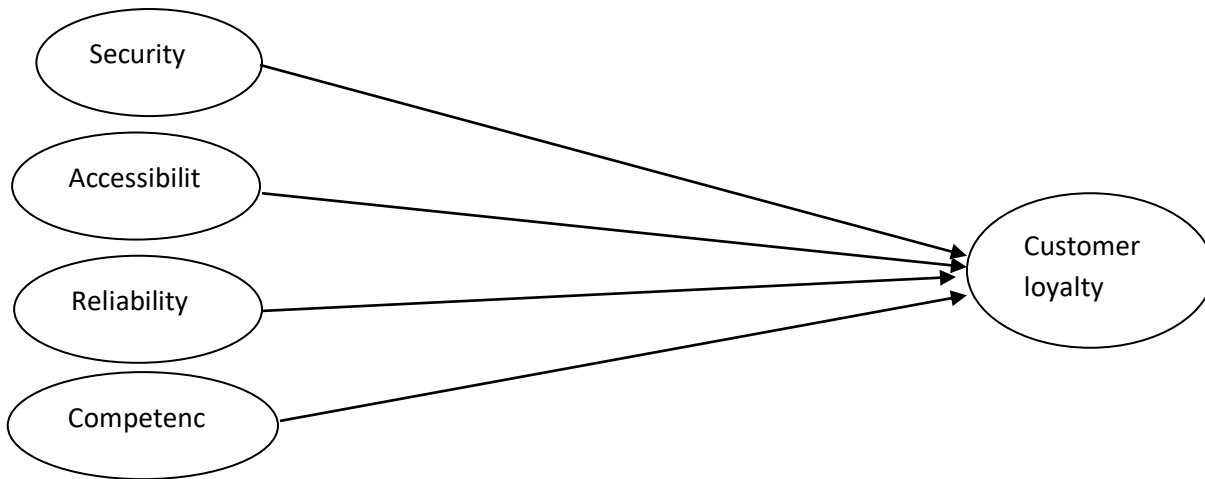
H₃: Accessibility has a positive and significant effect on customer loyalty.

Relationship between security and customer loyalty

This implies the measures and steps put in place by the bank, to ensure that customers'accounts are not compromised or made accessible to external parties. Security implementations include Bank Verification Number (BVN). Personal Identification Number (PIN) and chip technology debit cards. Security primarily consists of network security. It consists of the policies and practices adopted to prevent and monitor unauthorized access, misuse, modification, or denial of computer network and network-accessible resources. Network security involves the authorization of access to data in a network, which is controlled by the network administrator. Users are usually assigned an ID and password or other authenticating information that allows them access to information and programs within their authority. Iqbal, Masood&habibah (2017) found that SST security has a significant effect on customer loyalty hence; banks should ensure proper safety of customers' information while dealing with them. We hypothesis

H₄: security has a positive and significant effect on customer loyalty.

2.5 Research Model



Source: Researcher's conceptualization

Research methodology

Research design is the detailed blueprint used to guide a research study towards its objectives (Aaker *et al.* 2009). Survey research design was adopted as appropriate for this study. This type of design is more directly related to descriptive and causal research and success in collecting primary data is more a function of correctly designing and administering the survey instrument which in this research is the questionnaire.

Hypotheses were tested using multiple regression analysis to show the relationship between variable and t-test statistic was adopted to test for the significance of the hypotheses.

RESULT

Profile of respondents

On gender, 158(66.9%) of the respondents are male while the remaining 78(33.1%) are female. On marital status, 149(63.1%) are singles, 40(16.9%) are married, while 47(19.9%) are either divorced or separated. On age bracket, 118(50.0%) are below 30 years, 73(30.9%) are within 31 – 40 years, while 45(19.1%) are within the age bracket of 41 – 50 years. The implication of this is that majority of our respondents are very young people who are more prone to innovation than old people. On education, 89(37.7%) have O-Levels only, 115(48.7%) have HND/BSc while 32(13.6%) have post graduate qualifications. The implication of this is that majority of the respondents 147(62.3%) have tertiary education and are therefore disposed to give valid and usable information needed for the study.



Table 1: Demographic Characteristics of the Respondents

		Frequency	Percent	Valid Percent	Cumulative Percent
Gender:	Male	158	66.9	66.9	66.9
	Female	78	33.1	33.1	100.0
	Total	236	100.0	100.0	
Marital status:	Single	149	63.1	63.1	63.1
	Married	40	16.9	16.9	80.1
	Separated/Divorced	47	19.9	19.9	100.0
	Total	236	100.0	100.0	
Age bracket:	Below 30 years	118	50.0	50.0	50.0
	31 - 40 years	73	30.9	30.9	80.9
	41 - 50 years	45	19.1	19.1	100.0
	Total	236	100.0	100.0	
Education:	O'Level	89	37.7	37.7	37.7
	HND/BSc	115	48.7	48.7	86.4
	Postgraduate	32	13.6	13.6	100.0
	Total	236	100.0	100.0	

Principal component analysis

Principal component analysis (varimax rotation) method was applied to the data. Items that did not load on factors (< 0.5) were removed. Cronbach alpha was computed to measure the internal consistency of the factors. All factor had internal reliability between 0.61 and .81 in line with acceptable values (aaker, 2009).



Table 2: Principal component analysis

Component labels	Item	Factor loading	Cronbach's alpha
Security	Ensures physical safety of the transaction	.531	0.68
	It also increases the financial security	.643	
	Privacy can be easily maintained.	.773	
	Password facility provides confidentiality to transaction.	.742	
Ease of use	I am able to use SST	.869	.77
	I find SST easy to use	.664	
	I have a well-developed technological competency	.789	
Reliability	Provides error-free transactions	.790	.80
	Provides convenient location of service facility (location of ATM, POS terminals)	.783	
	Reduces the waiting time to receive the service.	.663	
Competence	Online purchase of goods and services including online payment is easier	.655	.
	Self-service technology channels is easily accessible	.500	
	Provides convenient location of service facility	.616	
Competence	Reduces the waiting time to receive the service	.775	0.61
	I like online payment because it helps me in purchase of goods and services online	.515	
	I will introduce my bank to others	.624	
	I will Influence others to Use my bank	.755	
Customer loyalty	I am Satisfied with my bank, therefore I will Continue to be Loyal	.761	.79

Extraction Method: Principal Component Analysis.

Testing of Hypotheses

Table 3: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.371	.138	.123	.65112

➤ Predictors: (Constant), Security, Accessibility, Reliability and Competence.

➤ Dependent Variable: Customer loyalty

➤ From Table 3, we can deduce from the value of the R square (coefficient of determination) that the independent variables (Security, Accessibility, Reliability and Competence) explains a proportion of 0.138 (13.8%) of the total variation that occurs in the dependent variable (customer loyalty).

TABLE 4 TABLE OF COEFFICIENTS

Model	Unstandardized coefficients		Standardized coefficient	T	Sig.
	B	Std. Error			
(Constant)	.617	.358		1.721	.087
Security	.155	.071	.136	2.187	.030
Accessibility	.159	.030	.456	5.348	.000
Reliability	.391	.078	.310	5.041	.000
Competence	.108	.049	.134	2.002	.029

Source: SPSS Version 24

Dependent Variable: customer loyalty



Table above reveals the standardized Beta coefficients, which give the contributions of each variable to the model. The t and p values show the effect of the independent variables on the dependent variables. Based on the analysis, the following inferences were drawn in relation to the hypotheses.

The smaller the value of significance (p- value) and the larger the t- value the greater the contribution of that predictor. In this model, security ($t = 2.187$, $p = .030 < 0.05$), accessibility ($t = 5.348$, $p = .000 < 0.05$), reliability ($t = 5.041$, $p = .000 < 0.05$) and competence ($t = 2.002$, $p = .029 < 0.05$) were all significant to customer satisfaction. From the magnitude of the t-values, we can see that accessibility as the highest effect; follow by reliability, security and competence in that order.

Discussion of Findings

This study was informed by the need to assess the relationship between self-service technology and customer loyalty in the retail banking industry. It was based on sample 246 retail bank customers in Anambra State of which 236 responded. The study was based on four independent variables: Security, Reliability, Accessibility and Competence while customer loyalty was the dependent variable. The descriptive analysis of the data shows that young and middle age customers are more inclined to explore innovations like the SST channels: ATM, Mobile banking and internet banking than the old customers. The study equally shows no clear variations in the usage of the SST channels between male and female respondents. On the other hand, the more a customer stays with a bank the more the customer is inclined to use SST channels to conduct bank transactions. The study also shows that ATM is the most preferred channel among all the SST channels. This finding is in line with Okeke, 2013, cited in the review.

The study found out that there is a significant relationship between SST security and customer loyalty with banks. This finding is in line with Guriting, Gibson and Ndu (2007). It is also in line with Liao and Cheung (2003) that security of operations is important to customers when considering SST channels. It was also found out that Reliability has a significant relationship with SST channels. This is in line with Zahid, Mujtaba and Riaz (2010) earlier cited in the literature. The study also found out that accessibility and competence have significant relationship with SST channels. These agree with Liao and Cheung (2003); Okeke, (2013); and Okeke, Ezeh&Nnedum, (2015).

Conclusion

This work is concerned with self-service technology and customer loyalty in the banking industry: a study of retail bank customers in Anambra State. E-Service Quality Model was reviewed after which the study relied on four independent variables: Security, Reliability, Competence and Accessibility, while the dependent variable is customer loyalty. The data



collected were analyzed using both descriptive and inferential statistics. Based on the analysis, the following conclusions are made; there is no clear difference between the two genders males and females on the use of SST channels especially ATM. The more a customer stays with a bank the more such a customer is inclined to use the SST channels which include ATM, mobile banking and internet banking. ATM is the most preferred channel for transacting retail banking services through the SST. That is to say that ATM is the most patronized SST channel. Security of SST channel has a significant and positive effect on customer loyalty with retail banking. Reliability of SST channel is positively related to customer loyalty with banks. Also competency and accessibility have significant and positive relationship with customer loyalty in retail banking.

Recommendations

The results of this study show that ATM usage is highest among the SST services. To further improve the service quality, ATM service should be able to provide enhanced interactivity, diversified offerings, and facilitate customers to participate in improving the service encounter with ATM and make it a memorable and pleasant experience. Banks should develop strategies to motivate non-users through awareness, education, extending personalized services, and demonstrating the functions of SST banking services. This is more so as the study has shown that consumer awareness is highest among ATM users.

It is evident from the study that security, reliability, accessibility and competence have relationship with SST. Bank management should monitor the environment and identify the trends through marketing intelligence. They need to constantly up-date and differentiate their SST products service quality dimensions to ensure continuous satisfaction and loyalty of customers. Quick response to customers' needs and queries about the SST related services are important to improve the service standards of SST banking channels. This would facilitate customers to participate in improvement of service quality, learn and perform, and have a pleasant experience through two-way communication.

There is no doubt that the possibilities and consequences of cybercrime are many and they threaten the survival of corporate organizations and even individuals. The growth of ICT infrastructure and the Nigeria's economy at large is at risk which is why the fears in some quarters that Nigeria will be subject to various vulnerabilities, especially cybercrimes, as the nation deploys ICT infrastructure to support her development. There is the need for the CBN, the Economic and Financial Crimes Commission (EFCC) and the Nigerian Information Technology Development Agency (NITDA) to work together to ensure that the anti-cyber law is more effective.



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