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AUTOMATED TELLER MACHINE SERVICE QUALITY IN NIGERIA: AN EMPIRICAL INVESTIGATION

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ABSTRACT

The advent of Automated Teller Machine (ATM) in the banking industry has changed the way banks render services to customers from direct service to self-service. The use of self-service channels to deliver services provides a platform to enhance operational efficiency and service quality to customers. A focus on service quality dimensions will enable banks to adequately meet the needs of customers and improve satisfaction as well as patronage. However, it appears ATM has impacted both positively and negatively on customers' banking experience. Therefore, the study examined the service quality dimensions that influence the perception of ATM service quality. To achieve the objective of the study, a quantitative and cross-sectional survey research design was employed. A structured questionnaire was used to collect data from bank customers who use ATM in Lagos State, Nigeria. Multi-stage sampling technique was adopted to select the respondents. The data collected were analysed using correlation and multiple regression. The analyses revealed that all the service quality dimensions identified in the study (reliability, convenience, ease of use, security, fulfilment and responsiveness) have significant positive relationship and influence on perceived ATM service quality. This suggests that to enhance ATM service delivery, banks need to meet customers' expectations in all the service quality dimensions.

Keywords: self-service, service quality, customers, banking experience, perception

INTRODUCTION

Across all services, the issue of service quality remains critical as customers' evaluation of a service plays a crucial role in their repurchase or patronage behaviour (Zeithaml, Parasuraman & Malhotra, 2002). In banking, service quality has emerged as a strategic factor which contributes to customer satisfaction and the success of e-banking channels (Narteh, 2015). Due to the distinctive characteristics of e-banking which is a form of electronic service (e-service), measuring e-service quality differs from measuring traditional service quality (Ghorbani & Yarimoglu, 2014). This observation made Alsudairi (2012) to argue that there is need for empirical studies on e-service quality because it is the key to long-term advantages in the banking industry. Similarly, Fariz and Bagher (2014) noted that e-service quality is among a firm's competitive capabilities that lead to business performance as it is one of the main factors that determines usage and sustainability of e-channels. Ombati, Magutu, Nyamwange and Nyaoga (2010) also affirm that e-service is becoming increasingly important not only in determining the success or failure of e-services but also in providing customers superior experience. This has made the measurement and determination of the criteria that customers use to evaluate e-service quality a major concern to businesses employing self-service technologies (Negi, 2009; Charles, Kumar & Suggu, 2012).

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ATM is one of the self-service technologies that have changed the way banking is carried out globally. The desire to measure up with global standards as well as to create value for customers and to remain competitively relevant has accelerated the growth and development of ATM in the Nigerian banking industry (Oludimu & Olayinka, 2008). Consequently, Nigerian banks have been investing huge sums of money in the deployment and maintenance of ATM (Onyedimekwu & Orua, 2013; Ayo, Oni, Adewoye & Eweoya, 2016). ATM just like any other e-service offers considerable benefits to both banks and customers. The machine can enable customers to withdraw cash at more convenient times and places than branch banking which operates at stipulated hours. It has brought banking services closer to the customer and also given them the opportunity to access their money at any time of the day. On the part of banks, the combined services of both the ATM and human tellers imply more productivity during banking hours and non-banking hours and so, there is continued productivity for the banks even after banking hours. Banks also get significant cost savings, greater consumer involvement and efficiency in their operations through ATM services (Maditinos, Tsairidis & Grigoriadis, 2009; Bishnoi, 2013). Despite these benefits, the perception of ATM by bank customers in Nigeria appears to be varied and diverse. Some describe ATM as 'Avoid Travelling with Money' or 'Any Time Money' while others see it as 'Automatic Thief Machine' or 'Avoid the Machine' (Okere, 2014).

Mohammad, Rushami, Rabiul and Abdullah (2013) opined that to deliver quality services electronically, business organizations need to understand the perception of customers regarding the quality of their services and the way customers evaluate them. Mohammad, Mohsen and Roza (2013) also noted that to ensure high perceived service quality by customers in electronic markets, it is necessary for businesses to evaluate the level of service quality being offered. As banks are making efforts to align their operations with technological changes and to reduce face-to-face interactions in service delivery, there is need to understand specifically customers' perceptions of e-service quality. This is necessary because a high level of e-service quality contributes to achieving marketing goals in terms of better and more efficient relationship with customers, more ability to attract potential customers, greater competitiveness and increased benefits in the long-run (Barrutia & Gilsanz, 2009). In the view of Aaker (2011) a high level of perceived service quality has impact on the perception or superiority of a service over its alternatives. ATM is an alternative to branch banking and so for customers to use ATM instead of branch banking, they must perceive the service quality of ATM to be higher. Therefore, an understanding of the dimensions that customers use to evaluate ATM service quality is necessary for banks to keep in touch with customers' expectations which can then be used to enhance service delivery and improve customers' experience with ATMs.

Statement of the problem

ATM is designed to make some banking transactions more accessible and efficient for customers. It is expected to be reliable, convenient, easy to use, secured, provide fulfillment and be responsive when problems occur (Khan, 2010; Akinmayowa & Ogbeide, 2014; Narteh, 2015). However, it appears ATM is not meeting these expectations because it is characterized with several service quality inadequacies ranging from card jamming, debit without cash payment, inability to dispense cash in time of dire need for money, out of service, prohibitive charges, long queues to fraud perpetration and other security threats (Bishnoi, 2013). As such, it has been observed that banks still have several customers using branch banking for transactions that could be carried out with ATM. Some bank customers

decide when to use ATM and when not to use it. They also decide on the banking transactions they use ATM for. It has also been observed that ATM is mostly used for cash withdrawals even though it can be used for other transactions such as cash deposit, bill payment, fund transfer and buying air-time (Yazeed, Yazidu & Ibrahim, 2014). There are also some bank customers who have ATM card but do not use ATM.

Muniruddeen (2007) noted that without adequate service quality, discretionary users of e-services will seek for alternatives, while dedicated users may likely manifest dissatisfaction and return to branch banking thus, negating the presumed benefits of e-banking. This has necessitated empirical studies on ATM service quality, however, in the literature, majority of the studies that addressed the issue of ATM service quality focused on customer satisfaction (Khan, 2010; Kumbhar; 2011; Shirshendu & Sanjit, 2011; Akinmayowa & Ogbeide, 2014; Phan & Nham, 2015; Mwatsika, 2016). The focus of this study is on perceived ATM service quality. The purpose is to identify the service quality dimensions that influence the perception of ATM service quality. The study attempts to identify the service quality dimensions that are important to bank customers who use ATM in the context of a developing country. This is necessary because every service quality dimension contributes diversely to the perception of service quality. So, it is important to determine the weight that each of the service quality dimensions has on the perception of service quality. To improve overall ATM service quality, there is need to determine the dimensions which have priority for customers so as to strengthen the most important dimensions. Also, the more banks understand their customers and what is important to them in terms of service quality, the better will be their ATM service delivery.

LITERATURE REVIEW

The process and outcome theory of service quality was adopted for the study. It is based on Gronroos (1984) model of service quality. The model indicates that the experiences of customers with respect to a service determine their perception of service quality. It is based on the premise that service quality includes not only how the customer is served but also the outcome the customer expects. Although, the model has not been widely adopted in many research contexts as compared to SERVQUAL model by Parasuraman, Zeithaml & Berry (1985; 1988), Narteh (2013) considered it the most appropriate model for ATM service quality. The modified model indicates that the experiences of customers with respect to ATM service determine their perception of service quality. The premise of the model is that ATM service quality dimensions include not only how the customer is served but also the outcome the customer expects and more importantly recovery if a problem occurs. Recovery which is measured by responsiveness has been recognized as a major aspect of e-service quality by several researchers (Parasuraman, Zeithaml & Malhorta, 2005; Collier & Bienstock, 2006; Hongxiu, Yong & Reima, 2009). ATM still poses some challenges and how these challenges are addressed could affect the perception of service quality.

ATM Service Quality Dimensions

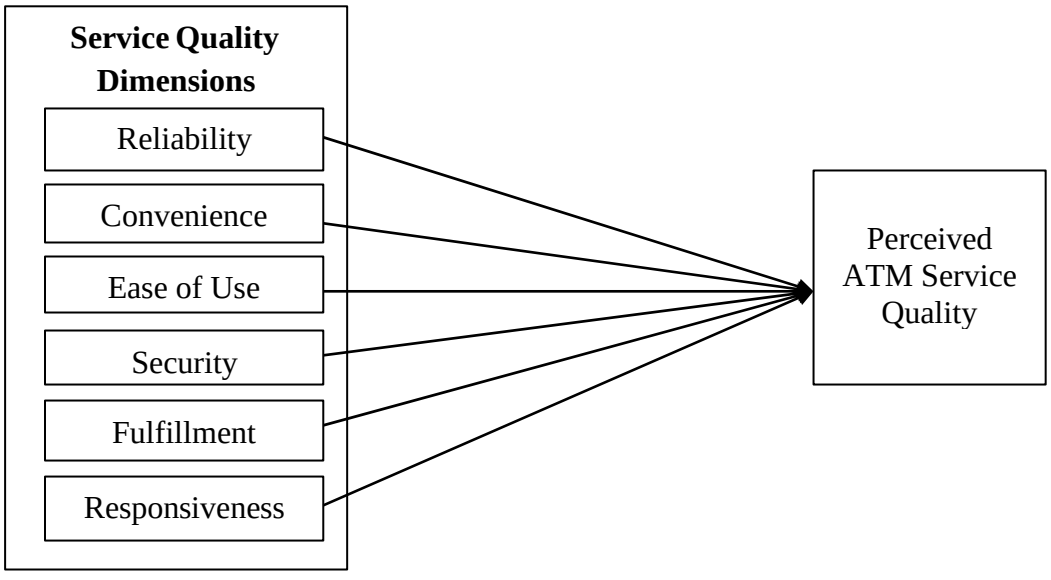
The dimensions of ATM service quality have been investigated extensively but some of the researchers (Anyiam, Eze and Ezeh, 2015; Mwatsika, 2016) used SERVQUAL model of Parasuraman *et al.*, (1985; 1988) which comprises tangibles, reliability, responsiveness, assurance and empathy. Others developed new service quality dimensions and so, there are currently no generally accepted dimensions of ATM service quality. For instance, Akinmayowa and Ogbeide (2014) investigated the dimensions of ATM service quality and posited that ATM service quality dimensions include convenience, efficient operation, security and privacy, reliability and responsiveness. Narteh (2013) identified service quality dimensions as reliability, convenience, ease of use, fulfillment and responsiveness. Kumbhar

(2011) identified the dimensions as system availability, e-fulfillment, efficiency, security, responsiveness, easiness, convenience, cost effectiveness, problem handling, compensation and contact while Shirshendu and Sanjit (2011) are of the view that the dimensions are customer service, security and information quality, convenience, usage easiness and reliability. Khan (2010) stated that the key dimensions of automated banking service quality include reliability, ease of use, privacy, convenience and responsiveness. Muhammad (2010) identified convenience, efficient operation, security and privacy, reliability and responsiveness. Al-Hawari, Hartley and Ward (2005) are of the view that ATM service quality dimensions are sufficient number of ATM, secure locations**,** user-friendly system, conveniently located ATMs and ATM functions**.** Similarly, Joseph and Stone (2003) identified user friendly ATMs, convenient locations of ATMs, secure positions of ATMs and adequate number of ATM provided by the banks.

This indicates that over the years, researchers have developed two main approaches to the determination of the dimensions of ATM service quality. The first approach adopted the traditional service quality dimensions (Anyiam *et al.,* 2015; Mwatsika, 2016) while the second approach developed new dimensions for ATM service quality (Joseph & Stone, 2003; Al-Hawari *et al.,* 2005; Muhammad, 2010; Khan, 2010; Shirshendu & Sanjit, 2011; Kumbhar, 2011; Narteh, 2013; Akinmayowa & Ogbeide, 2014). The second approach focused on the attributes of ATM but there is no consensus among the researchers with regard to the dimensions of ATM service quality as there are variation in the number and conceptualization of the quality dimensions proposed by the studies and so a widely accepted scale is yet to emerge. However, the studies have provided evidence that there are several dimensions of service quality with respect to ATM and some of the dimensions are common among the researchers. Building on previous studies that the dimensions of SERVQUAL cannot effectively determine ATM service quality and the recognition that quality dimensions are not based solely on the evaluation of the process but also on the outcome of a service and recovery dimension, the service quality dimensions selected for this study include reliability, convenience, ease of use, security, fulfillment and responsiveness.

Based on the foregoing, the conceptual model guiding this study is depicted in Figure 1:

FIGURE 1
Conceptual Model for the Determinants of Perceived ATM Service Quality



Source: Developed by the researcher based on previous studies (2017)

Perceived ATM Service Quality

Generally, perceived service quality is defined as customers' overall assessment of the utility of a service based on the perceptions of what is received and what is given (Zeithaml, Parasuraman, & Malhotra, 2000; Al-Hawari *et al.*, 2005). It can also be described as customers' judgment about an entity's overall excellence or superiority. It results from customers' comparison of their perceptions about service delivery process and actual outcome of a service (Peters, 1999; Lovelock & Wirtz, 2011). According to Narteh (2013) ATM service quality portrays a general, overall appraisal of ATM service. In this study, perceived ATM service quality is defined as customers' overall assessment of ATM service. It is the evaluation of the service performance customers received according to whether it meets certain standards. The evaluation emanates from customers' comparison between prior expectations about the service and their perceptions after actual experience of service performance (Gronroos, 1984; 1990; Zhang & Tang, 2006). When customers are doing such evaluations, they may refer to their feelings as well as their cognition in the service consumption process (Parasuraman *et al.*, 1988).

Service Quality Dimensions

Six service quality dimensions were selected for this study. They include reliability, convenience, ease of use, security, fulfillment and responsiveness.

Reliability relates to accuracy, speed and 24 hours availability of a service (Muhammad, Aslam, Afgan, & Abbasi, 2014). It is the ability of ATM to perform the promised service dependably and accurately (Narteh, 2015). In this study, reliability is defined as the ability of ATM to perform the promised service to customers consistently and accurately. It is an indicator of how ATM service delivers its promises about service provision and delivery. Reliability of ATM means that ATM should function all the time and it should deliver what it promises to deliver. One of the major services to be provided by the ATM is cash withdrawal and most of the time, the ATMs seem to be out of cash or out of service indicating that ATMs do not provide 24 hours service as promised. In ATM research, reliability has been found to be the most significant determinant of service quality (Narteh, 2013) and customer satisfaction (Mwatsika, 2016). The importance of reliability is based on the premise that customers' perception of service quality is likely to increase when the service is performed as promised or expected by the customer.

Narteh (2013, 2015) conceptualized convenience as the site or location of the ATM. In this study, convenience refers to the ability to use ATM service anytime, anywhere and without delays. This implies constant accessibility of the ATM to customers. It also includes convenient location of ATMs. ATMs are located in bank branches as well as in strategic locations such as campuses, shopping malls, hospitals, hotels and so on. As ATM offers an alternative way of conducting banking transaction outside the banking hall, convenience of ATM could be an important dimension of service quality. Khan (2010); Akinmayowa & Ogbeide (2014) found convenience to be the most important dimension of service quality influencing customer satisfaction.

Narteh (2013) defined ease of use as the degree to which ATM ensures a hassle-free transaction for the customers. In this study, ease of use is the degree to which ATM can be understood and operated in a simple and easy way. Some ATM users find the instructions on

how to perform some operations like fund transfer quite difficult to understand (Kevin & David, 2008). Ease of use has been found to be one of the major determinants of ATM service quality (Shirshendu & Sanjit, 2011; Narteh, 2013).

Security is the protection of customers from fraud and financial loss as well as the protection of customers' personal information (Narteh, 2015). In this study, security is conceptualized as the degree to which ATM is safe and protects customer information. Some security issues include stealing of customers ATM cards and using it for withdrawals, robbing ATM users after using an ATM machine. Narteh (2013) noted that security and privacy are not relevant in Ghana because Ghana is safe for ATM usage. This was attributed to the stringent security measures the banks in Ghana have put in place to protect their ATM customers such as the installation of CCTV cameras and human security at the ATM sites. There is also constant promotion of ATM by banks as a safe and secured means of conducting banking transactions. All these measures were assumed to have made security and privacy not to be a critical issue influencing customers' perception of service quality in Ghana. However, in this study, security is considered as one of the service quality dimensions based on Akinyele & Olorunleke (2010); Adepoju & Alhassan (2010) and Abdulrahman & Premalatha, (2014) observation that issues relating to fraudulent activities strongly influence the perception of ATM service in Nigeria. Chiemeke, Evwiekpaefe and Chete (2006) also noted that security is a major factor determining the use of e-banking in Nigeria. Again, security has been found to be an important dimension of service quality influencing customer satisfaction (Akinmayowa & Ogbeide, 2014; Kumbhar, 2011; Khan, 2010).

In this study, the definition of fulfillment by Narteh (2013) as the extent to which ATM performs outcomes which meet customer's expectation was adopted. It represents the outcome performance of service delivery and the focus is on customers' requirements in terms of the purpose for using ATM and what they actually receive. In the study of Narteh (2013) fulfillment was not a significant predictor of ATM service quality.

Responsiveness has to do with how banks respond to help customers when they face challenges with a service (Muhammad *et al.*, 2014). It is the banks' ability to handle customer complaints arising from transactional failures (Narteh, 2013). With ATMs, recovery deals with banks' ability to handle customer complaints arising from transactional failures as well as compensating customers against losses incurred such as money debited but not received. It is practically impossible to expect flawless ATM service delivery at all times due to the fact that technologies can sometimes fail to deliver as expected. In this study, responsiveness is the ability of ATM and customer care to provide help to customers when they have challenges with ATM. It includes the extent to which banks have put in place measures to recover services when ATM could not deliver as expected and the ability of banks to handle customer complaints arising from ATM transactional problems. It also involves the attention and promptness in dealing with customer requests, questions, complaints and problems with regard to ATM as well as compensating customers when they are debited without cash payment. In the study of Narteh (2013) responsiveness was found to significantly influence overall ATM service quality. Akinmayowa & Ogbeide (2014), Kumbhar (2011), Khan (2010) found responsiveness to be one of the key determinants of customer satisfaction but in the study of Anyiam, *et al.* (2015) responsiveness was not significant.

In the marketing literature, service quality has been investigated and measured in a variety of service industries either with the purpose of developing new measurement instruments or with the purpose of identifying its antecedents and/or consequences. The issue of ATM

service quality has also been studied across a number of countries and research concerning the measurement of service quality and customer satisfaction seems to be prevalent. For example, Muhammad (2010) investigated the significant dimensions of ATM service quality and its effect on customer satisfaction in Pakistan. The results indicated that convenience, efficient operation, security and privacy, reliability and responsiveness are significant dimensions of ATM service quality and that ATM service quality positively and significantly contributes toward customer satisfaction. In a similar study by Khan (2010) in Pakistani banks, the result indicated that the significant dimensions of ATM service quality are convenience, efficient operation, security and privacy, reliability and responsiveness. The results of the study also indicated a positive and statistically strong relationship between ATM service quality and customer satisfaction.

Similarly, Kumbhar (2011) in his study in India identified the dimensions of ATM service quality and appraised the relationship between e-service dimensions and customer satisfaction. He identified system availability, e-fulfillment, efficiency, security, responsiveness, easiness, convenience, cost effectiveness, problem handling, compensation and contact. Correlation was employed in the analysis and the result indicated in order of significance, compensation, problem handling, easiness, convenience, responsiveness, cost effectiveness, security, contact, efficiency, e-fulfillment and system availability. Shirshendu and Sanjit (2011) investigated the generic service quality dimensions of technology-based banking and examined the effects of these dimensions on customer satisfaction and customer loyalty in India. The study identified four generic service quality dimensions of customer service, security and information quality, convenience and usage easiness and reliability. The hypotheses were tested using Structural Equation Modeling and it was found that customer service, usage easiness and reliability have positive and significant impact on customer satisfaction and loyalty. It was also found that convenience and customer satisfaction have significant and positive impact on customer loyalty.

Akinmayowa and Ogbeide (2014) investigated the dimensions of ATM service quality (convenience, efficient operation, security and privacy, reliability and responsiveness) and their effects on customer satisfaction in Nigeria. The results indicated that convenience, efficient operation, security and privacy, reliability and responsiveness are significant dimensions of ATM service quality and that ATM service quality has a significant positive relationship with customer satisfaction. Tajul (2014) conducted a study to identify the factors which affect customers' satisfaction level of ATM services in Bangladesh. He investigated speed of the ATM, location and number of ATM booth, sufficient amount of cash in the ATM, quality of notes, network capacity, security/safety and privacy of ATM, power backup, manners of guards and their consent to other related issues on ATM services. The study indicated that security/safety/privacy of ATM is ranked number one and represents maximum satisfaction of ATM users. The customers were satisfied with the PIN (Personal Identification Number) of ATM card and they were also happy with the cash withdrawal accuracy/swiftness, quality of notes, manners of ATM guard, speed of delivery of ATM cards, power backup of ATM, pay-in-slips in the ATM, Charge/fee/cost of ATM cards, maximum limit of cash withdrawals, sufficient cash in ATM booth but customers were not satisfied with the number of ATM booth and network capacity of ATM.

Anyiam *et al.* (2015) conducted a study on ATM service quality and customer satisfaction in Owerri, Nigeria using the SERVQUAL model. The dimensions of service quality identified include tangibles, reliability, responsiveness, assurance and empathy. The results indicated that there are remarkable gaps between experience and the perception of the bank customers.

All the service quality gaps were positive, thus, indicating that the satisfaction level of customers were higher than their expectations. It was also found that empathy has the highest impact on customer satisfaction, followed by assurance, tangibles and reliability, however, responsiveness was not significant. Phan and Nham (2015) examined the service quality attributes that influence customer satisfaction with ATM service in a commercial bank in Vietnam. The study employed questionnaire which rated the performance of the five service quality dimensions of SERVQUAL (tangibles, reliability, responsiveness, assurance and empathy) and their perceived satisfaction. Assurance and tangibles were found to be more significant than reliability, responsiveness and empathy in influencing customer satisfaction. In a similar study by Mwatsika (2016) in Malawi, the results of the analysis revealed that reliability and responsiveness are the key service quality dimensions of ATM banking followed by empathy, tangibles and assurance.

The studies discussed above are on the relationship between service quality dimensions and customer satisfaction. This is because the focus has been on the influence of service quality dimensions on customer satisfaction. Narteh (2013) argued that there is need for studies to determine the extent to which service quality dimensions predict the perception of overall ATM service quality. On that note, the author conducted a study in Ghana to determine the dimensions of service quality and the relative weight of these dimensions in predicting customers' perceived ATM service quality. Seven dimensions of service quality were initially identified as reliability, convenience, ease of use, security and privacy, accuracy, fulfillment and responsiveness. After scale purification, the dimensions were reduced to five by eliminating accuracy, security and privacy. The resulting scale was referred to as ATMqual. Employing factor analysis and multiple regression, it was found that the dimensions of reliability, convenience, responsiveness and ease of use significantly impact on overall ATM service quality while fulfillment was not found to be significant.

The relationship between service quality dimensions and perceived service quality has also been investigated using other services such as online shopping (Zhang & Tang, 2006) and online travel service (Hongxiu *et al.*, 2009). The study of Zhang and Tang (2006) examined the service quality dimensions that affect customer perceived e-service quality in online shopping. Five service quality dimensions which include website design, reliability, responsiveness, trust and personalization were investigated. It was found that all the service quality dimensions identified affect customer perceived e-service quality. Hongxiu *et al.* (2009) investigated the relationship between service quality dimensions and perceived e-service quality using online travel service. They identified ease of use, website design, reliability, privacy and responsiveness from the perspective of online companies and trust and experience from the perspective of customers. The findings indicated that all the service quality dimensions influence customers' perception of e-service quality but reliability, ease of use and trust were the most important facet of e-service quality. Therefore, they recommended that online companies should pay attention to reliability, ease of use and trust.

METHODOLOGY

Cross-sectional research design was adopted for the study. Cross-sectional research design involves the collection of information from any given sample of population elements only once (Akinyemi, 2000; Ogunbameru, 2004). The advantages of cross-sectional design are that it is useful for obtaining data from large group of people and the respondents are able to respond to the items on the measurement instrument at a given point in time. Also, it provides information that allows for the identification of relationships or associations between two or more variables (Cooper & Schindler, 2003).

Sample selection and sampling

The population of the study was made up of bank customers who use ATM in Lagos State, Nigeria. In Nigeria, not all bank customers have subscribed for ATM card and there are some bank customers who have subscribed for ATM card but do not use ATM. Therefore, the target population comprised only the bank customers who have subscribed for ATM card and also use ATM. Lagos State was chosen because it is the most commercialized and industrialized state in Nigeria. In addition, Lagos State was the first state where the cashless policy initiated by the Central Bank of Nigeria (CBN) commenced (CBN, 2012).

In the determination of appropriate sample size for a study, Saunders, Lewis & Thornhill (2009) argued that there are no rigid rules where it is difficult to obtain a sampling frame. Rather, researchers should consider the logical relationship between the sample selection technique and the purpose of the research. This study used Godden's (2004) formula to determine the required sample size. The target sample size was identified to be 385 bank customers.

Multi-stage sampling technique was used to select the respondents for the study. First, cluster sampling was used to select the three (3) senatorial districts in Lagos State. The senatorial districts are Lagos Central, Lagos East and Lagos West. In the three divisions, there are twenty (20) Local Government Areas (LGAs) and the number of LGAs in each division comprises Lagos central (5), Lagos East (5) and Lagos West (10). On the basis of the number of LGAs in each division, the sample size (385) as calculated above was proportionately distributed to each division. This was achieved by computing the proportion of the number of LGAs in each division to the entire (20) LGAs relative to the sample size.

Thereafter, convenience sampling was used to select banks in the selected LGAs that had queue. This was necessary so that the respondents can complete the questionnaire while waiting to be served. In all, the respondents were sampled from seven (7) banks which include Zenith Bank, GTBank, UBA, Ecobank, Union Bank, First Bank and Access Bank.

Data collection

A questionnaire comprising of 50 items categorized into three sections was used to collect the data. The respondents were required to indicate their degree of agreement or disagreement with each statement on a five-point Likert scale in the order of strongly agree (SA), agree (A), fairly agree (FA), disagree (D) and strongly disagree (SD).

Content validity of the instrument was ensured through a thorough review of the literature and careful selection and adaptation of items from previously validated instruments.

The reliability of the instrument was tested using Cronbach's alpha, which is a measure used to assess the reliability or internal consistency of a set of scale or test items (Mohsen and Reg, 2011). The Cronbach's alpha coefficients are shown in table 1 and it indicates that the items had relatively high internal consistency and so the scale can be deemed reliable and suitable for the research.

TABLE 1
Test of Reliability of the Constructs

Constructs	Number of Items	Cronbach's Alpha Coefficient
Reliability	5	0.791
Convenience	6	0.852
Ease of Use	5	0.711
Security	7	0.833
Fulfillment	6	0.784
Responsiveness	7	0.799
Perceived ATM Service Quality	6	0.802

Data analysis and finding

The demographic composition of the respondents indicated that 52.6 percent of the respondents were males while 47.4 percent were females, 28.0 percent had secondary education, 41.1 percent were graduates and 30.9 percent had post-graduate education. In terms of occupational distribution, 27.4 percent were in government service, 32.0 percent were in private service, 22.0 percent were self-employed while 18.6 percent were students. 32.3 percent had one bank account, 50.6 percent had two bank accounts, 14.5 percent had three bank accounts while 2.6 percent had more than three bank accounts. With regard to number of ATM card, 41.7 percent had one card, 46.3 percent had two cards, 10.6 percent had three cards and 1.4 percent had more than three cards. With respect to duration of ATM usage, 13.7 percent had use ATM between 1-3 years, 36.9 percent had use ATM between 3-5 years while 49.4 percent had use ATM for 5 years and above.

To determine the most important service quality dimensions contributing to perceived ATM service quality, correlation analysis and multiple regression analysis were conducted. The results show that each of the service quality dimensions have a strong, positive correlation with perceived ATM service quality as indicated in Table 2.

TABLE 2
Correlation between Service Quality Dimensions and Perceived ATM Service Quality

	Reliability	Convenience	Ease of Use	Security	Fulfillment	Responsiveness
Reliability	1.000					
Convenience	0.386	1.000				
Ease of Use	0.141	0.177	1.000			
Security	0.188	0.175	0.103	1.000		
Fulfillment	0.232	0.335	0.105	0.225	1.000	
Responsiveness	0.266	0.212	0.107	0.199	0.240	1.000
PASQ	0.839	0.795	0.669	0.808	0.775	0.633

PASQ = Perceived ATM Service Quality

To determine the effect of each of the service quality dimensions on the perceived ATM service quality, multiple regression analysis was conducted, and the results are presented in Table 3.

TABLE 3
Regression Analysis results

Model 1	**B**	**t-value**	**p-value**	**R^2**	**F-value**	**F-sig**
Constant	0.306	3.988	0.000	0.711	182.308	0.000
Reliability	0.322	7.961	**0.000**			
Convenience	0.228	7.258	**0.000**			
Ease of Use	0.164	4.682	**0.000**			
Security	0.241	7.820	**0.000**			
Fulfillment	0.181	5.058	**0.000**			
Responsiveness	0.084	2.710	**0.007**			

Model 1: Predictors: (Constant), reliability, convenience, ease of use, security, fulfilment, responsiveness

Dependent Variable: Perceived ATM Service Quality

The multiple regression result in Table 3 shows that the F-value is (F=182.308, p=0.000<0.05) which is statistically significant. This indicates a statistical significant relationship between service quality dimensions and perceived ATM service quality. This implies that reliability, convenience, ease of use, security, fulfilment and responsiveness jointly determine perceived ATM service quality. The R-Square value of 0.711 indicates that service quality dimensions explain 71.1 percent of the variation in perceived ATM service quality. Even though all the dimensions determine perceived ATM service quality, each dimension did not have the same influence on perceived ATM service quality. Comparatively, the service quality dimension that significantly influence perceived ATM service quality include reliability (b_1=0.322, t=7.961, p=0.000<0.05). This is followed by security (b_4=0.241, t=7.820, p=0.000<0.05), convenience (b_2=0.228, t=7.258, p=0.000<0.05), fulfilment (b_5=0.181, t=5.058, p=0.000<0.05), ease of use (b_3=0.164, t=4.682, p=0.000<0.05) and responsiveness (b_6=0.084, t=2.710, p=0.007<0.05) respectively.

DISCUSSION

The objective of the study was to identify the service quality dimensions (reliability, convenience, ease of use, security, fulfilment and responsiveness) that influence the perception of ATM service quality in Lagos State, Nigeria. From the results of the analyses, it was found that all the service quality dimensions positively and significantly influence perceived ATM service quality. According to the degree of influence, the dimensions are reliability, security, convenience, fulfilment, ease of use and responsiveness. The finding supports in part the study of Narteh (2013) that the dimensions of reliability, convenience, responsiveness and ease of use significantly influence perceived ATM service quality. However, this study provides contrary evidence that fulfilment and security are significant determinants of perceived ATM service quality. In terms of the degree of influence, the result support the conclusion reached by most researchers (Parasuraman *et al.*, 1988; Zeithaml *et al.*, 2002; Narteh, 2013; Mwatsika, 2016) in the field of service quality that reliability dimension is the most crucial dimension of service quality but with respect to the other dimensions, there are differences. In this study, security was the second most important determinant of perceived ATM service quality but in the study of Narteh (2013) it was screened out of the instrument before the final study because Ghana was considered safe for ATM usage. This implies that unlike in Ghana, security do influence customers' perception of ATM service quality in Nigeria. Other studies (Khan, 2010; Akinmayowa and Ogbeide, 2014; Mwatsika, 2016) also indicated that convenience, security, reliability and responsiveness are significant dimensions of service quality however in the study of Anyiam *et al.* (2015) responsiveness was not significant.

A major implication of this study is that banks need to see ATM service quality from the perspective of the customers so as to meet or exceed their expectations. The findings from this study can be used by bank managers to better understand the sources of customers' perceived service quality and address them appropriately. The findings of this study also suggest that there is need to develop customer-related strategies that can fulfil customer requirements according to their expectations so as to increase customers' perceptions of ATM service quality and usage. The six service quality dimensions identified in this study (reliability, convenience, ease of use, security, fulfilment and responsiveness) can provide practical levers for bank managers to improve customer experience with ATMs. The weight of the factors identified in the study can also provide managers with a guide as to the most important factors to focus on in order to improve ATM service quality and usage. The study provides meaningful direction to bank managers on how to improve ATM service quality and the success of the current efforts by banks aimed at increasing ATM usage. As indicated in the findings, to maintain a high level of ATM service quality, banks should pay attention to all the dimensions identified in this study. They should ensure that ATM service is always available, convenient and easy to use. The security of ATM should be improved, customers should get fulfilment for using ATM and attention should be paid to customers' complaints when problems occur.

Conclusion and Recommendations

As the transition from conventional banking practices to e-banking increases, this study is expected to provide useful information to banks and banking industry regulators in their attempt to make ATM relevant in the country's banking system. This study has shown that to improve ATM service quality, the service should be reliable. This means that banks should ensure that ATM service is readily available to customers by functioning 24 hours a day and 7 days a week as promised. The study also found that security is important in ATM service quality. Therefore, banks should improve on the security of ATM service. Apart from Personal Identification Number (PIN), biometrics should also be used to identify ATM users so that banks can confirm from the owner of an ATM card that is being used by another person before access to the account is granted. This could help to prevent third parties from making unauthorized withdrawals from bank customer's account. They should also create more awareness on how to ensure self-security.

Moreover, bank customers desire convenience in the use of ATM and so it influences their perception of service quality. They want to use ATM anytime, anywhere and without delays. As such, ATM should be located in strategic places. In addition to installing ATM outside banking premises to provide convenience for ATM users, a planned maintenance schedule should be kept for all ATMs to minimize breakdowns while repair maintenance strategy should be put in place to ensure that all broken-down machines are fixed promptly. When bank customers use ATM instead of branch banking, they expect fulfilment. Therefore, banks should ensure that ATM outcome fulfils customers' expectations. Fulfilment also involves the quality of notes dispensed by ATM. Banks should not use ATM as an avenue to get rid of bad notes. Furthermore, the degree to which ATM can be understood and operated in a simple and easy way is important. For ATM to be user-friendly and easy to use, customers obtaining ATM card for the first time should be taught how to use the machine by a staff of the bank. This will also prevent a situation where first time users ask for direction from other users, thereby exposing them to fraud. Finally, the study indicated that responsiveness influences the perception of ATM service quality. So, banks should be more responsive to ATM users by reducing customers' frustrations when resolving ATM transactional problems or when requesting for a new ATM card.

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