# ATM USAGE AND CUSTOMER SATISFACTION IN DEPOSIT MONEY BANKS IN NIGERIA

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**ABSTRACT**

The study investigated the degree of customer satisfaction with the use of ATM in deposit money banks in Benin City, Nigeria. Specifically, the study determined the degree of customer satisfaction with the use of Automated Teller Machine services, and examined the extent to which functional attributes of Automated Teller Machine services (Security, Network service delivery, Service charges, Perceived ease of use and availability of funds) influence customer's satisfaction.

Survey research design was adopted for this study and the population consisted of one million six hundred and ninety thousand, four hundred and fifty-four (1,690, 454) customers of the Quoted banks with verification numbers operating ATM in Benin City. Taro Yamane technique was used in determining the sample size. Stratified random sampling was used in categorizing the generation of the banks used in the study, while lottery method served as the basis of randomization in selecting the banks that were studied. Subsequently, customers on queue were further selected through systematic sampling process. Data were analysed using factor analysis, least square technique and ANOVA. Factor analysis was used to identify the principal components among the constructs while least square method (multiple regressions) was used to determine the predictive power of the extracted principal components of the constructs ANOVA was used to determine the difference between respondents' perception across academic qualifications.

The research findings are: automated teller machine security, network service delivery, service charges, perceived ease of use and availability of funds all influence customer satisfaction in deposit money banks in Benin City. The study found that the degree of customer satisfaction with the use of Automated Teller Machines is high because majority of the customers considered in the study are highly satisfied with its use. In view of the findings, the need for strategic managers and policy makers in government to make ATM transactions less challenging in order to improve service delivery and boost customers' confidence was suggested. Also, Strategic managers in the banks and

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policy makers in government should formulate policies to check the activities of ATM fraudsters and scammers with a view to enhancing customers' confidence in the system, a more effective and efficient network service should be delivered to ATM customers by deposit money banks as they enhance customers' convenience and banking services. Furthermore, Strategic managers in the banking sector should make it a point of duty to continually enlighten their customers on how to use the ATM without encountering difficulty which could discourage customers and lead to dissatisfaction and, lastly caution should be exercised in the allocation of charges on the ATM services by deposit money banks and they should all try to stick to the government stipulated charges on ATM services as failure to do so can discourage customers and lead to dissatisfaction.

**INTRODUCTION**

In recent times, Automated Teller Machine (ATM) usage in deposit money banks has attracted considerable attention of academic researchers and marketing practitioners (Sheth, 2001; Yavas, Benkenstein & Stuhldreier, 2004; Premalatha & Sundaram, 2012; Adeniran, 2014;Lasisi & Abubakar, 2014;Odusina, 2014; Rahman, Redwanuzzaman, Hansan & Rahman, 2014;Tajul, 2015). ATM usage is facilitated through widespread establishment of the automated teller machine (ATM) in different bank premises, business premises, hospitals, tertiary institutions and busy public places. Tajul (2015) states that Automated Teller Machine (ATM) is the most modern computerized telecommunication electronic device that enables customers to conduct financial transactions generally outside the normal banking hours without the need of a bank official. The Central Bank of Nigeria (2007) maintains that ATM is beneficial to Nigerian Banks and customers in terms of service quality, online real time services and solving queuing problems.

Adeniran (2014) notes that Automated Teller Machine (ATM) is one of the vital developments in the banking services delivery to customers. Establishment of the ATM is designed to decongest the banking halls as customers now can go to any nearest ATM to consummate their banking transactions such as cash withdrawal, cash deposit, bill payments, and transfer of fund between accounts to customer satisfaction. It implies that a bank customer who possesses the debit card as the case maybe will not necessarily move about with cash. ATM usage provides electronic alerts to customers' phone for all transactions carried out on their bank accounts. Premalatha and Sundaram (2012) posit that as far as customer satisfaction is concerned with regard to e-banking services, ATM services play an important role as they make easy of banking transactions for customers. Rahman, Redwanuzzaman, Hansan and Rahman (2014) posit that customer satisfaction is related with constant customer demand of product/service, continuous customer loyalty, and increase in profit,

growth opportunity and stable positive image of an organization like the bank. Komal (2009) notes that ATM services enhances operations and customer satisfaction in terms of flexibility of time, add value in terms of speedy handling of voluminous transactions which traditional services were unable to handle efficiently and expediently. ATM usage has several other benefits in Nigeria. These include: speedy completion of transaction, especially withdrawal even outside the country where the banker does not have a branch, reduction in the numbers of customer visit to the bank, customers' ability to withdraw from any bank close to him or her at any time, reduction on the amount of cash a customer carries around knowing he has access to money.

Customer satisfaction, hinges on the deposit money bank's ability to sustain the needed services required for the interest of the customers. Effective service delivery in ATM system guarantees quality excellence and superior performance and provides autonomy to the customers. Yavas, Benkenstein and Stuhldreier (2004) argue that customer focused ATM delivery system that fulfils their needs and maximize operational performance is an essential dimension for bank to achieve and sustain competitive advantage. Invariably, providing customers with the required service quality could offer organization some main advantages ahead of competitors which could result to high profits and expansion of the business (Sheth, 2001). The focus of this study is to investigate Automated Teller Machine (ATM) and customer satisfaction in Commercial Banks in Benin City.  The use of automated teller machine was introduced in the banks to enable customers make quick transactions with minimum delay and reduce queues in the banks. But in recent times, there has been numbers of complaints by bank customers on the use of automated teller machine (ATM). These complaints range from poor network service, difficulties in understanding ATM operation and ease of use,  poor service delivery, long queues, expensive charges and the insecurity in the use of ATM which could cause customer dissatisfaction. Hence, this study investigated ATM usage and customers satisfaction in deposit money banks in Benin City.

Several studies have been conducted in Nigeria on automated teller machine and customers satisfaction in different perspectives (Adeniran & Abubakar, 2014; Mohammed & Dada, 2014Olumide, 2014; Adeleye & Fadiya, 2015; Maude, Okpanachi, Gambo & Danpome, 2015 ;). For example, Olumide (2014) investigated ATM Usage and Customers' Satisfaction in Nigeria. The research used comparative analysis of three banks in Ogun State, Metropolis of Nigeria viz-a viz First Bank, Guaranty Trust Bank and Skye Bank. Questionnaires were distributed to 200 respondents across the three banks and the chi-square statistical tool was used to analyse the data. The results showed a positive and significant relationship between ATM Usage and Customers' Satisfaction. Adeniran and Abubakar (2014) carried out an empirical study of automated teller machine (ATM)

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and user satisfaction in Nigeria: a study of United Bank for Africa in Sokoto. It was a cross-sectional survey design and questionnaires were administered to 100 sampled respondents on ATM services. The multiple logistic regression analysis revealed that, the impact of ATM services in terms of their perceived ease of use, transaction cost and service security is positive and significant, while availability of money is positive but insignificant. Maude, Okpanachi, Gambo and Danpome (2015) study was on investment in automated teller machines and banks' customer satisfaction in Nigeria. It employed secondary data and found that investment in Automated Teller Machines, related software and hardware had a significant impact on banks' customer satisfaction as measured by Total Deposit. Adeleye and Fadiya (2015) was an empirical study of automated teller machine service quality on customer satisfaction (a case study of United Bank of Africa (UBA)). The study employed questionnaire and multiple regressions and showed that service quality has influence on customers' satisfaction. Mohammed and Dada (2014) was an empirical investigation of automated teller machines (ATMs) and customers' satisfaction in Nigeria: A case study of Ilorin, Kwara State. The study made use of questionnaire and statistical tool employed was chi-square and revealed that there is a significant relationship between ATM usage and customers' satisfaction.

However, despite these numerous studies on ATM discussed above, and also deposit money banks effort to ensure that customers reap the benefits of ATM usage as against the contemporary in-hall banking services in Nigeria, most banks still receive complaints from customers on ATM services and more worrisome is that the queues which the banks intended to take away from the banking hall with their introduction of ATM has now moved outside the banking halls to the ATM points and this has constituted a major source of dissatisfaction to ATM users. Also, it has become a norm that during festivity periods especially December, there is always difficulty in customers being able to use the ATM. These identified problems of ATM services that tend to reduce customers' satisfaction constitute a knowledge gap which this study attempts to fill in a more specified scope which is Benin City. The choice of Benin is as a result of the fact that none of the study discussed above was in Benin.

The specific objectives are to:

1.     Examine the degree which automated teller machine security influence on customer satisfaction in deposit money banks in Benin City;

2.     Determine the degree which automated teller machine network service delivery affects customers' satisfaction in deposit money banks in Benin City;

3.     Ascertain the degree which automated teller machine service charges influence on customers' satisfaction in deposit money banks in Benin City.

**4.** Assess the degree which automated teller machine perceived ease of use influence on customers' satisfaction in deposit money banks in Benin City; and,

**5.** Examine the degree which automated teller machine availability of funds influence customers' satisfaction in deposit money banks in Benin City.

**RESEARCH HYPOTHESES**

$H_{01:}$ Automated teller machine security has no significant influence on customers' satisfaction in deposit money banks in Benin City;

$H_{02:}$ Automated teller machine network service delivery has no significant influence on customers' satisfaction in deposit money banks in Benin City;

$H_{03:}$ Automated teller machine service charges have no significant influence on customers' satisfaction in deposit money banks in Benin City.

$H_{04:}$ Automated teller machine perceive ease of use has no significant influence on customers' satisfaction in deposit money banks in Benin City; and,

$H_{05:}$ Automated teller machine availability of funds has no significant influence on customers' satisfaction in deposit money banks in Benin City.

This study was on automated teller machine (ATM) usage and customer satisfaction in Nigerian deposit money banks. Due to wide geographical coverage of banks automated teller machines (ATMs) across Nigeria, emphasis is centred on specific deposit money banks in Benin City. The choice of Benin City was due to wide geographical coverage of all deposit money banks ATM in nooks and crannies of Benin metropolis. These banks were divided into two (2) major categories which are old generation banks and the new generation banks. Three (3) different banks were studied from each of the categories and specific branches were selected. It is a field survey type of study and quantitative research design was employed. It is a cross sectional survey for the year 2017, with the time frame of August – December 2017.  Data was generated through questionnaire administration. The study specifically examined ATM security, network service delivery, service charges, perceive ease of use and availability of funds as influence of customer satisfaction.

**LITERATURE REVIEW**

In this section, relevant literatures to the subject matter are reviewed. We specifically examined automated teller machine (ATM) in which we discussed the benefits of automated teller machines and also, the challenges encountered by customers in its use (customer dissatisfaction). Thereafter, we discussed customer satisfaction, the relationship between automated teller machine and customer satisfaction, empirical studies, theoretical framework and summary of empirical studies.

**CONCEPTUAL REVIEW**

This section discusses the concepts of automated teller machine and customer satisfaction.

**AUTOMATED TELLER MACHINE (ATM)**

Automated teller machine (ATM) is a machine that pays out cash; it is a quick and convenient way to make withdrawals. It was designed to meet the ever growing desire of customers to make quick withdrawals from their accounts. Siyanbola (2013) describes ATM as a computerized device that provides users of financial institutions with access to financial transactions in a public place. It combines a computer terminal, record keeping system and cash vault in one unit, permitting customers to enter a financial firm's book keeping system with a plastic card containing a Personal Identification Number (PIN) or by punching a special code number into the computer terminal linked to the bank's computerized records 24 hours a day.

Automated teller machine (ATM) banking is a popular access channel to banking products and services behind branch banking. Banks have been offering more access points to newer ATM technologies that are faster, secure and with a wider range of services that include cash depositing to achieve competitive advantage through the ATM banking. To retain bank profitability, expanding the base of satisfied customers is of essence, and as such the concept of customer satisfaction and what makes customers satisfied is an area of frequent market studies. Knowing the factors that influence customers' satisfaction with ATM banking is of significance when it comes to deployment of ATM technologies. Today ATM machine is just like a boon for everyone and of which it is one of the best services provided by the banking industry to its customers (Akrani, 2011). Ali and Emenike (2016) note that ATMs are known by various other names including automated banking machine (ABM) in the United States, Automated Transaction Machine or Cash point in the United Kingdom, Money Machine, Bank Machine, Cash Machine, Hole-In-The-Wall, Auto teller after the Bank of Scotland's usage, Cash line Machine as in the Royal Bank of Scotland's usage, MAC Machine in the Philadelphia area, Bankomat in various countries particularly in Europe and Russia, Multibanco after a registered trade mark, in Portugal, Minibank in Norway, Geld Automaat in Belgium and the Netherlands, and All Time Money in India (Jegede, 2014).

The converging forces of technology have tremendously altered manual systems of delivering banking services and have subsequently paved way for electronic delivery platforms in recent times. The Automated Teller Machine (ATM) is one of existing replacements of the cascading labour-intensive transaction system effected through what is popularly referred to as paper-based payment instruments. Heli (2006) confirmed this assertion when he held that the use of electronic means of payment has increased at the expense of paper-based payment instruments. Heli (2006) disclosed

that in some countries, payment cards have replaced cheques, and Internet banking has become a popular means of paying invoices. Nigeria is not an exception; we have had a share of this revolution. Similarly, Adeyemi (2010) quoting the chairman of Chief Inspectors of Banks in Nigeria (CIBN), Lagos chapter, Bayo Olugbemi noted that banking has undergone several changes and improvements as usually dictated by the dynamic nature of economies the world over, adding that banking and other financial services are becoming more sophisticated to the extent that cash paper work is fast disappearing from banking, rather, financial services delivery has moved to telephone (Telebanking), Automated Teller Machine (ATM), Internet and Smartcard/Electronic purse, which aim at making transactions easier, more convenient for customers and others.

The upsurge in the adoption of electronic means of delivering banking services can also be partly attributed to the changes in government policies which have heightened the competitive tempo of the Nigerian banking industry. Fasan (2007) maintains that this has happened especially after the consolidation of banks, which has in all probability, made it possible for more banks to afford to deploy ATMs or at least become part of shared networks. The dynamic dictates of technology have equally altered the tastes and preferences of consumers of financial services in Nigeria substantially. This has compelled banks to seek new procedures of delivering financial services to their customers electronically. According to Mohammad (2010) in an empirical study, the number of bank customers preferring to use self-service delivery systems is on the increase. It therefore follows that the adoption of the automated teller machines (ATMs) as one of the electronic means of delivering banking services was partly occasioned by the need to adjust to the eternal wind of changes in modern banking operations. An Automatic Teller Machine allows a bank customer to conduct his/her banking transactions from almost every other ATM machine in the world. As is often the case with inventions, many inventors contribute to the history of an invention, as is the case with the ATM. Good fellow of Scotland holds the earliest patent date of 1966 for a modern ATM, and John White (also of Docutel) in the US is often credited with inventing the first free-standing ATM design. In 1967, John Shepherd-Barron invented and installed an ATM in a Barclays Bank in London. Don Wetzel invented an American made ATM in 1968 (Jegede, 2014).

ATMs help to maintain confidentiality and improve the quality of cash withdrawal transactions, processing and recording (Ala'Eddin & Hasan, 2011). In the words of Laderman (1990), two reasons for this are that they want to increase their market share, although due to the prevalence of ATMs, it is not likely to be the primary means by which ATMs increase profitability for most banks; or/and above a certain level of operations, the cost of a single transaction performed at an ATM is potentially less than the cost of a transaction conducted from a teller, as ATMs are capable of

handling more transactions per unit of time than are tellers. In a separate affirmation, Mohammad (2010) similarly stated that by automating services that were previously completed manually, ATMs reduce the costs of servicing some depositor demands. Abor (2004) assess that ATMs are mostly located outside of banks offices, it can also be found at airports, shopping malls, and places far away from the home bank offices, and offering wide services such as withdrawing, funds transfer between two or more accounts and bill payments. The two major brands of ATMs deployed by the banks in the country are 'National Cash Register (NCR)' and 'Wincor Nixdorf' (Okere, 2014).ATMs offers 24 hours banking services to bank customers like cash withdrawal, funds transfer, balance inquiry, card to card transfer, bill payment, accept deposits etc. (Kumbhar, 2011).

**OVERVIEW OF AUTOMATED TELLER MACHINE IN NIGERIA**

In Nigeria, ATMs are gradually replacing tellers and have made cash withdrawals easier, interactive, participatory and convenient for customers (Akinyemi, Asani & Adigun, 2013).ATM was first introduced in 2002 and ever since, there has been massive increase in the deployment of ATMs from 425 in year 2005 to 3,017 in year 2007 and to 5,894 in July 2008 through which 65,059,870 transactions were made (Adeleye, 2008). According to CBN (2104), there has been a steady rise of the number of ATMs deployed in the country. As at April 2012, there were 10,000 ATMs in the country. Therefore, it increased from 11,000 ATMs in October 2013 to 11,800 ATMs in May 2014.Since its introduction; many Nigerian banks have installed ATMs in response to the changing nature of modern banking operations. According to Mohammad (2010), in Nigeria the deployment of ATM by banks and its use by bank customers is just gaining ground and has burgeoned in recent times. This follows from the number of advantages offered by ATM as a means of servicing the populace.

**KINDS OF ATM SERVICES OFFERED**

According to CBN annual publication of 2014, the kinds of ATM services offered in Nigeria are:

**(i)**     **Verve Card:** This card was made for the Nigerian market and it is only acceptable in Nigeria. The Verve card allows you to conveniently pay for goods and services on all ATMs, as well as POS, Web, Mobile, Kiosk, PC POS, Voice and bank branches connected to the Interswitch network. With a Verve card, you can withdraw cash, pay Prepaid PHCN bills, buy Virtual Airtime Top-Up and transfer funds on the Quick teller platform easily.

**(ii)**    **Visa Card:** Originally founded as BankAmericard from Fresno, California in 1958, Visa card came of age after Bank of America's 18-year experiment with credit cards was rebranded to Visa in 1976. Now based in Foster City, California, a corporate restructure created Visa Inc. in 2007. Visa is popularly traded company on the New York Stock Exchange following an Initial

Public Offering traded in 2008, listed under the stock shorthand 'V'. This card is acceptable internationally. Visa Card is acceptable on most ATMs and for making POS payments. It is also now accepted on Interswitch powered websites like Quickteller, Jumia and Konga.

(iii) **Master Card:** MasterCard was established in 1966 with its product name the Master Charge: The Interbank Card by 1979 it was renamed MasterCard. Based in Purchase, New York with its global headquarters in O'Fallon, Missouri, and Master Card was previously structured as a cooperative owned by over 25 thousand financial institutions. This card is acceptable internationally just like the Visa card. It's also accepted locally on interswitch websites like Quickteller, Konga and Jumia as well as international sites like Amazon and Aliexpress.

(iv) **Visa Electron:** Visa Electron is a debit card available across most of the world, with the exception of Canada, Australia, Ireland and the United States. The card was introduced by Visa in 1985 and is a sister card to the Visa Debit card. The difference between Visa Electron and Visa Debit is that payments with Visa Electron require that all the funds be available at the time of transfer, i.e., Visa Electron card accounts may not normally be overdrawn. Visa Debit cards, on the other hand, typically allow transfers exceeding available funds up to a certain limit. Some online stores and all offline terminals (like on trains and aircraft) do not support Visa Electron because their systems cannot check for the availability of funds.

(v) **Cirrus:** Cirrus is a worldwide ATM network. It is a subsidiary of MasterCard and based in Purchase, New York. Founded in 1982, it links MasterCard and Maestro credit, debit and prepaid cards and Cirrus ATM cards to a global network of millions of ATMs. By default, MasterCard and Maestro cards are linked to the Cirrus network, but very often all three logotypes will be shown. Canadian, American, Venezuelan, Chilean and Saudi Arabian ATMs use this network alongside their local networks and many banks have adopted Cirrus as their international interbank network alongside either a local network, the rival Plus ATM network owned by Visa, or both. In countries such as India and Bangladesh, the Cirrus network also serves as a local interbank network as well as an international network.

(vi) **Maestro:** Maestro is a multi-national debit card service owned by Mastercard that was founded in 1992. Maestro cards are obtained from associate banks and can be linked to the card holder's current account, or they can be prepaid cards. The cardholder presents the card at the point of sale (POS) and this is swiped through the payment terminal by the assistant or the customer, inserted into a chip and PIN device or read by a contactless reader. The payment is authorized by the card issuer to ensure that the cardholder has sufficient funds in his/her account to make the purchase and the cardholder confirms the

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payment by either signing the sales receipt or entering their 4 to 6-digit PIN, except with contactless transactions below a specified amount for which no further verification is required. Maestro often requires on-line electronic authorization for every transaction, although Mastercard's rules permit the establishment of floor limits on Maestro EMV chip transactions only. Not only must the information stored in either the chip or the magnetic stripe be read, this has to be sent from the merchant to the issuing bank, the issuing bank then has to respond with authorization.

## CHALLENGES ENCOUNTERED BY CUSTOMERS

Customers with different ATM cards often times encounter different degrees of challenges which range from card theft to card trapping and other forms. The following are some of the challenges encountered by customers in a bid to use ATM for convenience;

(i)    **Card Theft:** Card theft is where the perpetrator physically obtains the consumer's card at or in the vicinity of an ATM. The most common method of card theft is Card Trapping. The most popular method of trapping a card at the ATM is known as Lebanese Loop (Davis, 1989). A Lebanese Loop is designed to be entered within the card entry slot of the ATM card reader in such a way as it does not prevent the consumer from entering their card, but it does prevent the ATM card reader from ejecting or returning the card to the consumer. The perpetrator can subsequently remove the trapped card once the consumer has departed from the ATM with the belief that the ATM has captured or swallowed their card. Another variant of card trapping is known as the Algerian V trap. Other methods of card theft include card swapping where the consumer's card is exchanged for a card of similar appearance. This distraction method is often executed at the time that the consumer's card is being returned or ejected to the consumer following a transaction at the ATM.

(ii)   **PIN Compromise:** PIN compromise methods range from the very technically sophisticated to the relatively easy technique known as shoulder surfing. Shoulder surfing involves the perpetrator standing close enough to the consumer to observe the numbers entered on the key pad. A more sophisticated method of observation or surveillance involves the use of a miniature camera which can either transmit the image of the PIN being entered or store the recording within the device. With the increase in the number of mobile phones with video capture capabilities, such phones are adapted to compromise PINs. Keyboard overlays are devices which are designed to look very like the genuine ATM key pad and are fixed on top of the genuine key pad. The Keyboard overlay will record the numbers entered on the key pad but also permit the genuine keyboard to accept the PIN being entered. Similarly, to the

use of cameras, the keyboard overlay may transmit the information to a remote receiver or store the information locally. Sophisticated ATM Infrastructure Hacking, Architecture Hacking, Network Hacking, Social Engineering, Phishing and various other methods are also used to compromise PIN codes (Akrani, 2011).

(iii) **Card Skimming:** Card skimming involves making a copy of the information encoded on the magnetic stripe of the card. There are various different types of skimming device designed to be used in different environments, from hand-held devices through door access skimmers to miniature card entry slot skimmers. Hand-held skimming devices are more commonly associated with card skimming in restaurants and other retail establishments. When used in the ATM environment the perpetrator will either use distraction techniques to temporarily obtain and copy the consumer's card or sometimes pick the pocket of the consumer. Some ATMs are installed in a controlled environment whereby the consumer is required to swipe a card at the door of the ATM location to gain access. Skimming devices may be attached to or used as a replacement for a genuine door access device. ATM card entry slot skimmers have various shapes and sizes and also vary in sophistication. (Davis, 1989). When installed correctly they allow normal operation of the ATM in that the consumer's card is entered and returned correctly, however the magnetic stripe is copied by the skimming device. One of the most effective ATM skimming devices is known as the Sofia skimmer. The skills of the perpetrators in modifying the packaging of skimming devices makes them very difficult for the untrained observer to detect.

(iv) **Cash Trapping:** Cash trapping is the term used to describe attacks where the consumer's cash is trapped and prevented from being presented or delivered to the consumer. The variety of trapping devices is significant, ranging from those which require insertion within the ATM's cash dispenser through false fronts to well-engineered electro-mechanical devices which simulate the removal of the cash by the consumer.

**CUSTOMER SATISFACTION**

Customer satisfaction is a difficult concept and it varies from customer to customer and product/service to product/service. Level of satisfaction is dependent on the choice of products or services against which customer can compare a company's products or services (Tajul, 2015). Customers are seen as important stakeholders in organizations and their satisfaction is of priority for management and the performance of the organization in general. In recognition of the above statement, Kanji and Moura (2002) notes that customer satisfaction is a multi-faceted concept with various dimensions and can be defined differently. Satisfaction is used to assess what the customer

derived from goods or services and to the extent to which it actually meets needs and expectations of the customer (Bitner & Zeithaml, 2003).  According to Jani and Heesup (2011), satisfaction can be defined in terms of emotional condition based on customer's dealings with GSM network providers over the years. Bitner and Zeithaml (2003) explains that satisfaction derived from services or goods entails customers' assessment of the good or service, if it has actually purported what ought to be and offered satisfaction on the total offering.

Westbrook and Oliver (1991) define customer satisfaction as a mental state which results from customers' comparison of expectations prior to a purchase with performance after a purchase. According to Saha and Zhao (2005) customer satisfaction is defined as a collection of outcome of perception, evaluation and psychological reactions to the consumption experience with a product/service. Oliver (1997) defines customer satisfaction, as the customer's fulfilled response. It is a judgment that a product or service feature, or the product or service itself, provides a pleasurable level of consumption-related fulfillment. Malcolm (2008) defines customer satisfaction as the state of mind that customers have about a company when their expectations have been met or exceeded over the lifetime of the product or service. Increased customer expectations have created a competitive climate whereby the quality of the relationship between the customer and bank has taken on a greater significance in some cases than the product itself (Musiime & Biyaki, 2010). Customer satisfaction can be defined as: the way customers assess the performance or experience of the products and services which the company has offered to them (Ping, Suki, & Suki, 2012). The concept of customer satisfaction occupies a central position in marketing and practice (Cardozo, 1965). Customer satisfaction is a person's feelings of pleasure or disappointment resulting from comparing a product's perceived performance or outcome in relation to his or her expectations (Musiime & Biyaki, 2010). Khirallah (2005) defines customer satisfaction as a customer's perception that his or her needs, wishes, expectations, or desires with regard to products and service have been fulfilled.  In this era of modern technology where business environment is highly competitive, every business is striving for more and more customers. Customer satisfaction has become a key ingredient to every business strategy. Athanassopoulos, (2000) found strong empirical evidence of innovation, convenience, price, and service quality as vital dimensions to customers' satisfaction.

As identified by Shankar, Smith and Rangaswamy (2003), there are two main ways of evaluating customer satisfaction and they include service encounter satisfaction and overall customer satisfaction. Increasingly, customer satisfaction has a way of impacting on companies' market share, which can result to increase in earnings. With the motive of profits, customer satisfaction is crucial to any corporate organization that wants to make meaningful achievement especially by ensuring

that their services or products give satisfaction to wide range of customers as much as possible so as to be market leaders as well as increase profit margin. Also, business organizations' goal and objective can be decisive if customer satisfaction is the focus of the organization. Customers' satisfaction can be evaluated in relation to personal feeling of either pleasure or disappointment resulting from the use of goods or services provided by an organization to an individual in relation to its expectations (Leisen & Vance, 2001). With the relevance of customers' personal feeling and attachment to service provided, organizations often attach great importance on how to give satisfaction to customer since is a means for retention of customers (Siew-Phaik, Ayankunle, Salim, & Downe, 2011).

Explaining the concept and relative importance of customer's satisfaction, Rahman, Redwanuzzaman, Hansan and Rahman (2014) observe that customer satisfaction entails steady customers demand for goods and services in the market, increase in loyal customers, increase in profit, growth opportunity and maintaining good image. Customer satisfaction provides reasonable amount of desire from product and service effectiveness and meeting of customers' expectation (Tulu 2015). Customers' satisfaction usually depicts an optimistic and emotional situation emanating from the assessment of every aspect of a party's working relationship with another (Boselie, 2002).The concept of customer satisfaction has in general become of particular importance because various researchers (Leisen & Vance, 2001; Taju, 2015; Musiime & Biyaki, 2010) have shown that it is an antecedent of customer retention and customer retention is possible only due to customer satisfaction that increases market share, corporate image and long term profitability of the firm (Jochen, 2003). The banking industry is highly competitive and the products of one bank can be substituted by the products of other banks easily. The only point of difference is price and quality. Therefore, customer satisfaction can be an effective tool for banks to gain a competitive advantage and to sustain their position in this highly competitive environment. Kumar and Gangal (2010) explain that in order to be competitive, banks have to retain as many customers as possible.

Customer satisfaction is different in case of products (tangible) and in case of services (intangible products). The above mentioned difference is due to their attributes and as such, customer satisfaction in services and production should be treated separately (Newton, 2010). Separate strategies must be developed and followed in order to satisfy customers in services as well as in production sector. For a successful service business, building strong relationship with customers is important for customer satisfaction through service quality (Agarwal, 2012). Consumer satisfaction can therefore be defined as an evaluative process that contrasts pre-purchase expectations with the actual perceptions of performance during and after consumption experience.

**RELATIONSHIP BETWEEN AUTOMATED TELLER MACHINE AND CUSTOMER SATISFACTION**

Several studies carried out have introduced ways to measure customer satisfaction with ATM services (Meuter, Ostrom, Roundtree & Bitner, 2000; Kyootai & Kailash, 2007). Kyootai and Kailash (2007) used convenience/accuracy, feedback/complaint management, efficiency, queue management, accessibility and customization to measure customer satisfaction with e-payment systems with reference to ATMs. Meuter et al. (2000) used access, ease of navigation, efficiency, flexibility, reliability, personalization, security, responsiveness, assurance, site aesthetics and price knowledge to measure satisfaction with ATM online payment.

**AUTOMATED TELLER MACHINE SECURITY AND CUSTOMERS' SATISFACTION**

The ATM is an innovative service security delivery mode that offers diversified financial services (Muhammad, 2010). Tulu (2015) notes that to ensure security, safety, privacy and accuracy, the banking authority gives to their customers a plastic ATM card with a magnetic strip that contains a unique card number and Personal Identification Number (PIN). Security is provided by the customer entering a personal identification number (PIN), (Adepoju & Alhassan, 2010).

Joseph and Stone (2003) indicate that easy access to location, user-friendly ATM and security of the ATM, are important factors that influence majority of bank customers' perception of ATM service quality. Shamsudddoha, Chowdhury and Ahsan (2005) showed that 24-hour service, accuracy, and convenient locations are the main predictors of customer satisfaction. The study also indicates lack of privacy in executing the transaction, fear of safety and complexity of the machine as the major cause of concern for the customers. Dilijonas, Krikscuiunen, Sakalauskas and Simutis (2009) states that adequate numbers of ATMs, convenient and secure location, and user-friendly system, speed, minimum errors, high uptime, cash backup, cost and service coverage are essential aspects of ATM service capable to influence customer satisfaction. Electronic banking acceptance is related to customer's assessment of security (Khan, 2010). Security issues that influence consumers' acceptance of e-banking services are authorized access, confidentiality, restriction on large volume transactions and sound devotion to security measures (Liao & Cheung, 2002). As regards transactions run through an open network which can entail substantial amount, security – particularly concerning appropriate authorization and confidentiality would verge on that part of reliability that is of critical importance (Roboff & Charles, 1998). Empirical studies show that security factors/concerns are positively allied to consumers' acceptance of e-banking services (Khan 2010; Liao & Cheung, 2002).

Most ATM services are vulnerable to risks or fraud (Siyanbola, 2013). Customers who have provided ATM credit/debit card pins or payment account details on online transactions can easily be targeted

for fraud. Their money can be stolen by internet fraudster. This is because data via online ATM transactions are sometimes transmitted in an un-secured way and despite introduction of secured transactions mechanisms, such as Secured Socket Layer, providing these details by online or mail or over the telephone entails security risks (Oladele, 2013). Many customers have lost money when using their ATM cards for online services. Potential customers often mention this risk as the key reason why they do not trust ATM transactions online and therefore do not make Internet purchases (Adewuyi, 2011).

According to the Central Bank of Nigeria Annual Report (2014) while the number of reported cases of fraud and forgery in the use of e-payment increased in 2012, there were 4,527 cases of fraud and forgery involving the sum of N14.8 billion and US$1.6 million, compared with 2,527 cases involving the sum of N29.5 billion at end-December 2011. However, the actual loss fell by 26.1% to N4.27 billion and US$0.4 million, from N5.78 billion at end-December 2011. The cases of fraud were perpetrated mostly by illegal funds transfer and fraudulent ATM withdrawals. The issue of ATM fraud in Nigeria remains significant because of low level of unique National Identity System implementation. Lack of mandatory national identity card makes it possible for one to dupe a bank or another person today and reappear in another area under another name (Oladele, 2013). Security of the machines and customers as well as availability of constant power supply is of importance moreso as ATMs proliferate in Nigeria. Other challenges facing ATMs/debit/card acceptance in Nigeria today include inadequate geographic spread of financial institutions particularly in small towns, inadequate infrastructure, absence of public awareness, deficiency of inter-operability among issuers/service providers. Other major challenges would include lack of technical expertise as well as experienced and knowledgeable personnel; there is also the problem of substantial financial resources required to deploy ATMs (Ovia, 2005).

According to Olasanmi (2010) the increase in the use of the ICT facilities such as computers and Internet in the perpetuation of criminal activities like spamming, credit card frauds, flashing, identity theft, denial-of-services, and many others add credibility to the opinion that ICT is promoting fraud in the banking sector. Mohammed and Dada (2014) observe that with the dawn of ATM in Nigeria, banks' customers now have access to financial transaction outside the banking hall such as public place without the need for a cashier or bank teller. ATM is designed to perform the most important functions of banks staff through magnetic-stripe plastic card known as the ATM card, which is usually issued by the financial institution. The card contains a unique card number and some security information such as serial number, an expiration date, etc. According to Adeniran (2014), among the developments in the banking services delivery is the introduction of Automated Teller Machine

(ATM) that intends to decongest the banking halls as customers now can go to any nearest ATM outfit to consummate their banking transactions.

Adeniran (2014) revealed that the impact of ATM services in terms of service security is positive and significant to customer satisfaction. Also, Olumide (2014) indicated that the ATM card can also be regarded as Plastic Money; it is not only safe but convenient. The ease of settlement of bills has made it acceptable and important throughout the country. Ogbuji, Onuaoha and Izogo (2012), showed that ATM should not be installed indiscriminately everywhere and that ATM has increased the rate of crime in Nigeria, although banks have tried to secure transactions made through ATMs. Mukasa (2003) observes that one of the biggest concerns about ATM is security. He says that this threat is both to the customer and the bank itself, customers need to be sure that their passwords are secure so that their information and transactions are safe. Development of a secure control is a big challenge for the service provider. Chinedu and Onuoha (2012) analysed the negative effect of the ATM as a channel for delivery banking services in Nigeria. Using a sample of 600 respondents, conveniently selected from two states of the federation. The data were analysed using Chi-square. The study found that the ATM system of delivery banking service not only contribute to the increasing rate of bank fraud, but equally lures Nigerians into profligate expenditures. They therefore recommended that banks should strive to increase their security layers to subvert the tricks of web scammers and limit the amount which customers may be allowed to withdraw at a time.

**AUTOMATED TELLER MACHINE NETWORK SERVICE DELIVERY AND CUSTOMERS' SATISFACTION**

Automated Teller Machine (ATM) is a service of technological development introduced to enhance quick service delivery as well as diversified financial services. The ATMs of a bank are connected to the accounting platform of the bank through ATM switches. Inter-bank ATM networks are created by setting up apex level switches to communicate between the ATM switches of different banks (Adewoye, 2013). According to Patricio, Fisk and Cunta (2003) customers will use different service delivery systems depending on their assessment of each channel and how it contributes to the overall service offering. Hence service satisfaction will not merely be based on isolated service encounters and experiences but rather on the overall feelings of satisfaction. With automated teller machines networks already in place in most of the urban areas, the drive is now towards the rural areas where the use of automated teller machines is still uncommon (Musiime & Biyaki, 2010). Effective service delivery in ATM system guarantees quality excellence and superior performance and provides autonomy to the customers (Lovelock, 2000). Yavas, Benkenstein and Stuhldreier (2004) argue that customer-focused ATM delivery system that fulfils their needs and maximize

operational performance is an essential dimension for bank to achieve and sustain competitive advantage.

Muhammad (2010) investigated the significant dimensions of ATM service quality and its effect on customer satisfaction in Pakistan. He used questionnaire to collect the data from a convenience sample of 500 customers of multinational and national banks. Regression 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. Adewoye (2013) observes that ATM is an innovative customer delivery service tool that offers diversified services such as cash withdrawals, funds transfer, payment of bills, etc. The use of ATMs as a customer network service delivery strategy has enabled bank customers to transact banking business using a coded ATM card, wherever an ATM facility is located, customers can access their accounts at any hour of the day.

Zikiri (2011) applied SERVEQUAL (Service Quality) model to mobile telecommunication in Macedonia, results reveal reliability as the most important factor for customer satisfaction with service quality. Empathy was found as the most important factor of customer expectation with service quality. Assurance stands second in satisfying customers. Empathy plays a vital role in customer satisfaction. Tangibility is the fourth factor in customer satisfaction. Customer satisfaction does have a positive effect on organization profitability as it leads to repeat purchase. Repeat purchase leads to brand loyalty and positive word of mouth.

Rahaman, Abdullah, and Rahman (2011) used SERVEQUAL model in banking sector in Bangladesh. They stated that there are many causes of service quality design failure and the most important one is the lack of understanding the needs and preferences of targeted customers. Dimensions of SERVEQUAL items like solving customer problems, timely services, and transaction in a safe way are fertile areas in customer satisfaction through service quality. Organizations need to take proper steps to ensure the clients satisfaction through efficient, speedy and reliable services, and giving assurance to fulfill the expected requirements. Service quality attributes have positive effect on customer satisfaction. Khalid, Mehmood, Abbas and Hussain (2011) found that, there is a positive relationship between service quality attributes and customer satisfaction similar to those of previous studies. Responsiveness shows the highest correlation with customer satisfaction. Reliability contributes the second and tangibles show the least but positive correlation with customer satisfaction. Moderate but positive correlation exists between customer satisfaction and empathy.

Ebiringa (2012) mentioned a list of factors considered by customers as important for their service satisfaction. Such factors include tangibility, reliability, convenience, assurance, accuracy, safety,

ease of use, and responsiveness. Heli (2006) studied the effects of the Automated Teller Machine (ATM) network market structure on the availability of cash withdrawal ATM services and cash usage. Using a unique data set on 20 countries including Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Japan, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, UK and USA for the period 1988–2003, he found that monopolization of the ATM network market structure is associated with a smaller number of ATMs and that the influence of the number of ATMs on cash in circulation is ambiguous.

**AUTOMATED TELLER MACHINE SERVICE CHARGES AND CUSTOMERS' SATISFACTION**

Komal (2009) indicates that bank ATMs facilitate the use of ATM cards of one bank at the ATM(s) of other banks for basic services like cash withdrawal and balance enquiry. In Nigeria, banks owning the ATMs charge a fee for providing the ATM facility to the customers of other banks. The ATM-deploying bank from the card-issuing banks recovers this fee referred to as 'interchange fee'. This interchange fee is now fixed across banks and costs sixty-five (65) naira after a third transaction and banks with larger ATM network treat interchange fee as an important stream of revenue. All commercial financial institutions in Nigeria are using this method/system aggressively and encouraging all their customers to take advantage of these services on the grounds of ease of process which in turn serves as an unannounced financial generation to the bank. Santiago and Francisco (2008) explored the interaction between Automated Teller Machines (ATMs) and Point of Sales (POS) devices as well as the effects of these interactions on the overall demand for currency in Australia. It was found that the growth of ATMs negatively affects POS adoption and service charges on ATM transactions have negative effect on customer satisfaction. Experience has shown that many commercial banks in Nigeria are still in the habit of charging high rates on transactions, especially when one transfers money through the use of electronic channels like ATMs from one's bank account to another bank account either within same bank or to another bank (Oladele, 2013). This has the potential to discourage customers from using Automated Teller Machines (ATMs) to transfer money. Also, charges are also placed on maintenance of ATM cards which is deducted automatically from customer's accounts on an annual basis.

**AUTOMATED TELLER MACHINE PERCEIVE EASE OF USE AND CUSTOMERS' SATISFACTION**

Through enhanced service offering, service-providing organizations can give superior value offers that can influence customer satisfaction by improving the customer's perceived ease of ATM usage and decreasing the sacrifice so that customer retention and improvement are achieved (Ravald & Grönroos, 2006). In a similar study Idris (2014), is of the view that Automated Teller Machine (ATM) among others was one of the services introduced by banks with the objective of providing customers

quick access to their finances, as well to reduce cost of such access. The research was on the perceived customer satisfaction towards introduction of automated teller machine (ATM) in Nigerian banks. The researcher used questionnaires and descriptive statistics to analyse the study. This covered perceived ease of use, perceived accessibility and perceived security in order to measure customer satisfaction in relation to ATM service quality. The result indicated that the customers with agreed responses on perceived ease of use and perceived accessibility has higher mean and standard deviation, while the perceived security responses have higher mean and standard deviation of disagreed responses.

Di Angeli, Coventry, and Johnson (2002) looked at technology adoption in different cultural contexts, analysing the relationship between Hoffstede's cultural value dimensions and ATM's adoption in urban India. They proposed that the underlying inhibitors to ATM adoption in India were not intrinsically different from those determined in Europe and North and South America. These inhibitors could be traced back to a few main factors, such as feelings of inadequacy, preference for human contact, lack of need and safety concerns. They believed that those who used ATM did so because they had a need for it, perceived it was easy to use, felt safe using it, and had positive attitude towards technology in general.

**AUTOMATED TELLER MACHINE AVAILABILITY OF FUNDS AND CUSTOMERS' SATISFACTION**

Cash as evidence of successful transactions in ATM usage remains a fundamental issue to Automated Teller Machines users. Before the invention of ATMs, withdrawing funds, account inquiries, and transferring funds between accounts all required face-to-face interaction between the customer and a bank teller. But the machine has long replaced that and made banking a convenient and efficient experience (Madueme, 2005). In an archival research by Batiz-Lazo and Barrie (2005) on the impact of the introduction of Automated Teller Machines (ATM) in British retail banking, it was argued that during the 1990s, Information Technology in banking (as measured by ATM) led to increased funds available for withdrawal by the ATM, improvement in printing and issuing of receipts and payment vouchers/tellers coupled with increased output (number of transactions) that resulted in greater efficiency. They concluded that the introduction of ATM was profitable for banks as well as customers. Their study indicated that banks' adoption of ATM was in overall, beneficial for banks and also, cash should be made readily available to all bank ATM users in order to increase the efficiency and effectiveness in its use by the customers, which will in turn give customers satisfaction. However, most ATMs in Nigeria now have a huge problem with dispensing cash to customers as at when they need it urgently, as you find cases of most ATMs informing customers

that their banks ATMs are temporarily unable to dispense cash. This has a high potential to discourage customers from using the ATM machines.

**EMPIRICAL STUDIES**

Banks have invested heavily in ATM services in the hope of attracting and satisfying their needs and also the needs of their customers. In line with this, several empirical studies have been conducted on automated teller machine in relation to customer satisfaction in different dimensions.

Okoro (2014) examined the impact of automated teller machine (ATM), point of sales (POS), Mobile and Internet service values on the intermediation efficiency of the Nigerian economy using multiple regression technique on time series data of 2006 – 2011. The study reports the following findings: that there is significant relationship between ATM, POS, Internet service values and the intermediation efficiency of the Nigerian economy. However, the study also reveals that there is no significant relationship between Mobile service value and intermediation efficiency of the Nigerian economy within the period under study. The study concludes that the ATM, POS and Internet services are the major instruments used by the customers of the deposit money banks in Nigeria, and recommends that the banks should encourage the use of ATM in Nigeria.

Jegede (2014) investigated the effects of ATM on the performance of Nigerian banks using responses from questionnaire from a convenience sample of 125 employees of five selected banks in Lagos State with Inter-switch network. The results indicate that less than the benefits, the deployment of ATMs terminals have averagely improved the performance of Nigerian banks because of the alarming rate of ATM fraud. The study concludes that banks should strive to increase their ATM security layers to subvert the tricks of web scammers.

Taju (2015) conducted a study with the purpose of identifying the factors which affects customers' satisfaction level on ATM services in Bangladesh in terms of speed, 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 survey was conducted and 200 copies of a structured questionnaire were distributed to the banks' customers. Various statistical analytical tools and tests, such as, descriptive analysis, Z-test, and ANOVA test were conducted to test the hypothesis and collected data. The study finds that security/safety/privacy of ATM is ranked number one and represents maximum satisfaction of ATM users.

Adeleye (2008) also carried out a study and the purpose of the paper was to measure customer satisfaction as regards to ATM facilities. The research was carried through survey design which questioned respondents on ATM facilities. The population of study mainly constituted of

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customers of United Bank for Africa within Lagos. The sample in this study consisted of 200 respondents who are users of ATM. The data collected was analysed by use of multiple logistic regression analysis and Pearson correlation. The findings revealed that necessary input to the bank management to increase customers' satisfaction through improving ATM delivery. Chinedu and Onuoha (2012) carried out analysis of the negative effects of the automated teller machine (ATM) as a channel for delivering banking services electronically in Nigeria, using a sample of 600 respondents conveniently selected from two states of the federation (Lagos and Anambra), and analysing the hypotheses formulated with chi-square, and found that results were consistent with the propositions made. Against these backdrops, it was recommended that banks should strive to increase their security layers to subvert the tricks of web scammers, limit the amount which customers may be allowed to withdraw at a time and provide electronic alerts to customers' phone for all transactions carried out on their bank accounts through ATMs, cooperate instead of competing in stemming the ATM fraud menace and educate customers on the need to safeguard their PINs.

Odusina (2014) investigated ATM Usage and Customers' Satisfaction in Nigeria. The study employed questionnaire. A total of 200 respondents answered the questionnaire cutting across the three banks, the chi-square statistical tool was used to analyze the data and the results showed a positive and significant relationship between ATM Usage and Customers' Satisfaction. Lasisi and Abubakar (2014) studied the satisfaction of customers as regards ATM services. The research was a cross-sectional survey design which questioned respondents on ATM services. The sample consisted of 100 respondents who are users of ATM. The data collected was analysed by use of multiple logistic regression analysis. The findings revealed that, the impact of ATM services in terms of their perceived ease of use, transaction cost and service security is positive and significant to customer satisfaction. Ali and Emenike (2016) evaluated the impact ATM on the banking service delivery in Nigeria by using descriptive and regression analyses on the value of ATM transactions and customer deposit series for the sample period from January 2009 to December 2013. The regression results indicate that ATM transactions positively and significantly impacts private sector demand deposits in Nigeria but not private sector savings deposits and private sector time deposits.

Mwatsika (2016) carried out assessment of the performance of automated teller machines (ATMs) in Malawi. A total of 353 ATM card users rated the performance of ATM banking in 25 service quality attributes and further rated their perceived satisfaction with ATM banking. The regression analyses of the performance of the 25 ATM banking attributes and customers' satisfaction revealed 12 key attributes that influence customers' satisfaction with ATM banking and these were: ATM fees

charged, ATMs not out of order, cleanliness of ATMs and ATM stations, accuracy of ATM transactions, ease of access to ATMs, readable slips, convenient location, employee accessibility to solve ATM problems, privacy at ATM stations, employee speed in solving ATM issues, ease of application process for ATM cards and cash availability in ATMs. Farouk, Maude, Okpanachi, Samuel and Moses (2015) study, focused on the relationship between investment on Automated Teller Machines and customer's satisfaction using selected Banks in Nigeria. The study made use of secondary data obtained from annual reports and financial statement of sampled banks quoted in the Nigerian Stock Exchange for the period 2001-2010. Data were analyzed through the Ordinary Least Square regression model using the Statistical Package for Social Sciences. Finding was that investment in Automated Teller Machines, related software and hardware had a significant impact on banks' customer satisfaction as measured by Total Deposit.

Ogunlowore and Oladele (2014) examined the impact of electronic banking on satisfaction of corporate bank customers in Nigeria. It was suggested that critical infrastructure like power; security and telecommunication should be strengthened to ensure the application of electronic banking in Nigeria and optimum satisfaction on the part of customers. Foreign direct investment will increase and productive capacity will be doubled. This will improve standard of living of citizenry and further engender economic growth and development. Mohammed and Dada (2014) examined the impact of Automated Teller Machines (ATMs) on customers' satisfaction in Ilorin metropolis, the capital City of Kwara State, Nigeria. It employed structured questionnaires and analyzed its data using descriptive and inferential statistical technique. The result is that there is a significant relationship between ATM usage and customers' satisfaction.

Okeke, Ezeh and Ugochukwu (2015) investigated the relationship between service quality dimensions and customer satisfaction with online/e-banking services of Nigerian banks. The study was based on a sample of 400 respondents out of which 258 responded to the questionnaire. The analysis was conducted with Multiple Linear Regression analysis (MLR) and the results show that five out of the seven variables of price, security, perceived risk, responsiveness and assurance are significant in enhancing customer satisfaction with online services of Nigerian banks. Onyedimekwu and Oruan (2013) empirically evaluated customer's use of electronic banking systems in Nigeria. The survey instrument employed involved design and administration of 240 questionnaires within Omoku town in Rivers state. The result showed that among all e-Banking systems, ATM has the highest level of usage and has significant influence on customer satisfaction. Adeniran (2014) examined Automated Teller Machine (ATM) in relation to customer satisfaction. The research made use of a cross-sectional survey design and structured questionnaire was employed. The findings

were that, the impact of ATM services in terms of their perceived ease of use, transaction cost and service security, was positive and significant influence on customer satisfaction.  Idris (2014) investigated the perceived customer satisfaction towards introduction of automated teller machine (ATM) in Nigerian banks. The study used questionnaires and descriptive statistics to analyse. The result indicated that ATM perceived ease of use has significant effect on customer satisfaction.

**THEORETICAL FRAMEWORK**

This study is built on the following theories explained below

**THE TECHNOLOGY ACCEPTANCE MODEL**

The technology acceptance model (TAM) was developed by Fred Davis in 1989 (Davis, 1989). The rationale behind the theory was that users' acceptance or adoption of technological innovations that predicted their opinion about ease of use and usefulness of the system. The perceived ease of use describes the degree to which a person believes that utilizing a particular system would be unimpeded of effort, while the perceived usefulness explains the user's perceptions of the expected benefits gained from using a particular system such as automated teller machine (Davis, 1989).

Some literature has used the technology acceptance model (TAM) theoretical framework for evaluating the acceptance of new technologies (Legris, 2013). The technology acceptance model (TAM) is a data systems theory that fashions how users come to accept and use technology. Customer satisfaction in use of e-payment system like automated teller machine in a country like Nigeria will encourage economic growth and development (Eze & Nwankwo, 2013). In Nigeria, recent findings indicated that perceived benefits, effort expectancy, social influence, trust, awareness, and demographic variables, affected individuals' intention to introduce credit. It was initially through the implementation of a credit or e-payment systems (Gholami, 2010). Similarly, extended technology acceptance model established that perceived ease of use and perceived usefulness were not only antecedents of a credit system or e-payment and banking acceptance in Nigeria, they were factors that are also necessary for promoting continued usage of such innovations among business owners or organizations and the Nigerian populace (Ayo, 2011).

**DIFFUSION OF INNOVATIONS THEORY**

Diffusion of Innovations theory is a hypothesis that attempts to justify how, why, and at what rate new ideas and technology diffuse through cultures (Eze & Nwankwo, 2013). Oluyinka, Shamsuddin and Wahab (2013) stated that diffusion is the process by which an innovation is transmitted through particular medium over time among the members of a social system. This proves that consumer's years ago accepted a cashless economy and that it aided business activities as well as encouraged economic growth in Nigeria.

The main challenge of innovation-developing process is the lack of technological support services and lack of adequate infrastructure (Hill, 2007). However, Oyeyinka and Gehi (2007) argued that innovation could be radical or incremental. Radical innovations refer to new products that result from advances in knowledge or technology. Four important factors influence the 'Diffusion of Innovations theory. They are technology conditions, socio-cultural conditions, socio-economic conditions and government policy and support (Oyeyinka & Gehi, 2007). Wole and Louisa (2009), tested the attributes of the theory of diffusion of innovation empirically, using Automatic Teller Machines (ATMs) as the target innovation. This study which was situated in Jos, Plateau state, Nigeria examined 600 respondents and found that attitudinal dispositions significantly influence the use of ATM. Lee and Lee (2000) investigated the diffusion of various electronic banking technologies, such as ATMs, debit cards, smart cards, direct deposit, and direct payment, along with the characteristics of adopters and non-adopters based on the DOI theory. They used the 1995 Survey of Consumer Finances and discovered that more educated, affluent and younger consumers who were likely to communicate with professional information providers tended to adopt electronic banking technologies more readily than their counterparts. Despite this, the specific factors that described adopters and non-adopters varied across different types of banking technologies.

## SERVICE QUALITY THEORY

Storbacka, Strandvik and Grönroos (2006) propounded the Service Quality theory.  This theory tries to explain that customer satisfaction is when customer first experiences the product or service in terms of quality expectations compared to the actual performance benefited. Ravald and Grönroos, (2006) observes that if the new experience of the customer exceeds previous anticipation, as such customer satisfaction is likely to increase. Therefore, network service delivery, perceived ease of use, service charges, pay receipt are expected to depicts inconsistency between a customer's anticipations for a service offering and the customer's opinions on the service enjoyed. According to Ravald and Grönroos (2006), comparism of perceived and actual service received bring about service quality measure an attitude measure as far as satisfaction is concerned. The theory signified that with automated teller machine usage, bank network service delivery, and necessary implications, enhancing customer satisfaction could be assessed or achieved.

## MARKETING MYOPIA THEORY

This theory known as marketing myopia theory was first propounded by Theodore Levitt in 2004 (Theodore, 2004). The theory suggested that marketers are to critically examine the market and familiarize the firm and products so rather than hoping on one's firm, so as to satisfy the market. The main thrust of this theory was that the need of the market is expected to come first. According to

the marketing myopia theory, to cater to market, a business organization not only needs to be technically oriented towards developing product but it also needs to be customer-oriented. Priority needed to be given to identified needs of the customer and what further improvements can the banks bring to sustain customer attentiveness or how it can familiarize to the fluctuating business market setting.

**CONCEPTUAL FRAMEWORK**

This study builds on another which identified and developed a model on the diffusion of innovations by customers of deposit money banks in Nigeria on the use of ATMs and factors affecting the satisfaction/dissatisfaction derived from their use (Oyeyinka & Gehi, 2007). These factors include perceived time saved, perceived risk/security, perceived service delivery, perceived time spent, perceived transaction cost/charges, perceived convenience, perceived ease of use/complexities and perceived usefulness of the automated teller machine services. This study focuses specifically on perceived security, perceived network service delivery, perceived service charge, perceived ease of use and the availability of funds delivered by the ATMs. Based on the above variables, we constructed a model for this study that would be tested with the appropriate statistical method. The model is presented below

**DETERMINANTS OF CUSTOMER SATISFACTION WITH ATM SERVICES**
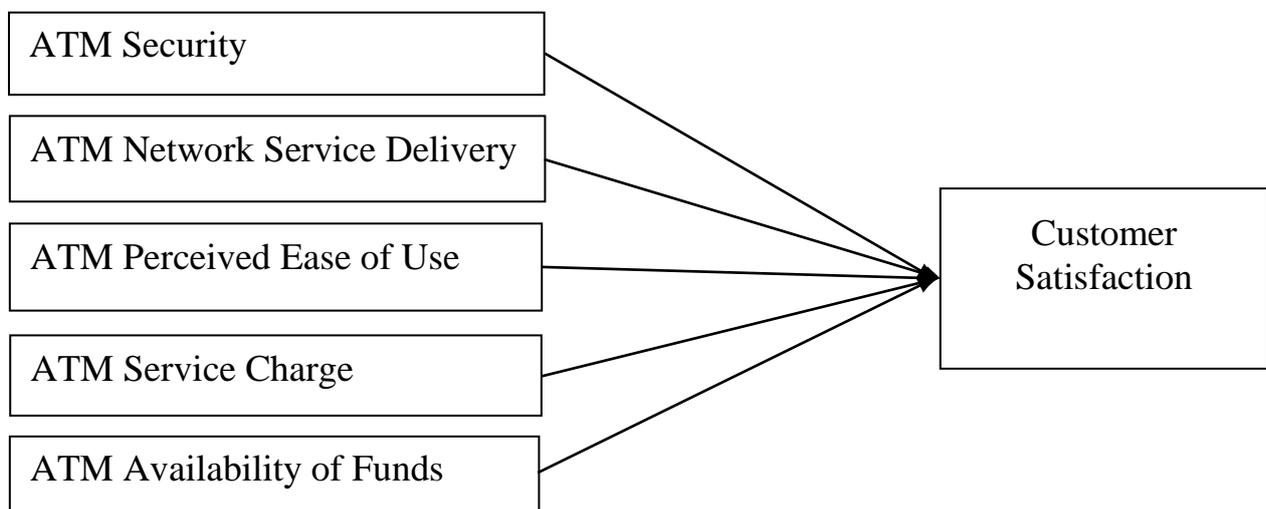


**Source:** *Authour's Schematic Framework* (2017)

**Figure 2:1 *Schematic Analytical Framework* (2017)**

The analytical framework in Fig 2.1 above depicts the schematic representation of the causal relations with the dependent variable (customer satisfaction) and the independent variables which include Security, Network Service Delivery, Charges, Ease of Use, and availability of funds. It is

proposed in this study that customers' satisfaction with the ATM services is dependent on the above independent variables.

**METHODOLOGY**

This study employed quantitative type of research design. Due to wide spread geographical coverage of banks automated teller machines (ATM) across Nigeria, focus was on deposit money banks in Benin City. The choice of Benin City was because of the wide geographical coverage of all deposit money banks that operates ATMs in all nooks and crannies of Benin City, Nigeria.. Customers of selected banks in Benin City were examined in the use of ATM security, network service delivery, service charges, perceive ease of use and availability of funds as it influences customer satisfaction. In effect, research design is the blue print on which the study methodology is carried out (Shaibu, 2005).

The population of the study was the customers of deposit money banks in Benin City that use ATM cards.  A total of eighteen (18) banks quoted in the Nigerian Stock Exchange that operates in Benin City formed the population of study. From the available data of CBN annual report of 2016, a total of one million six hundred and ninety thousand four hundred and fifty-four (1,690, 454) customers of the quoted banks with verification numbers operating in Benin City with ATM constitute the population of the study. These banks include First Bank, Union Bank, Eco Bank, GT Bank, Access Bank, Unity Bank, WEMA Bank, First City Monument Bank, Diamond bank, Stanbic IBTC, Sterling Bank, United Bank for Africa, Fidelity Bank, Zenith Bank, Key Stone Bank, Skye Bank, Main Stream Bank and Enterprise Bank.

The sample for this study was taken from its population size of one million, six hundred and ninety thousand four hundred and fifty-four (1,690,454) customers of the various banks that operate ATMs. A total of four hundred (400) customers of commercial banks formed the sample size. The sample size was arrived at by the use of number estimation formula by Yamane (1967).

The need for the use of the formula was to scientifically arrive at an appropriate and sizeable sample of customers that use automated teller machine (ATM). For the purpose of arriving at a more realistic, accurate and clear result, multi-stage sampling technique was adopted in this study. That is, more than one sampling method was used. First, we used stratified random sampling technique in categorizing the banks into the new generation and the old generation, and then picked three (3) banks each from both categories. The banks that were used in the new generation category were:

1.  Guarantee Trust Bank – 71 questionnaires were distributed

2.  Zenith Bank – 62 questionnaires were distributed

3.  Fidelity Bank – 69 questionnaires were distributed

The banks that were used in the old generation category were:

1.  First Bank – 80 questionnaires were distributed

2.  Union Bank – 68 questionnaires were distributed

3.  United Bank for Africa (UBA) – 60 questionnaires were distributed

Also, random sampling technique was employed in picking two (2) branches each from these selected six banks. Systematic sampling method was also used in distributing the questionnaire in such a way that it was administered to every other person situated at the bank's ATM outlets. The questionnaire was administered with the help of two other persons who served as research assistants.

**MODEL SPECIFICATION**

Customer satisfaction with the use of ATM is a function of security, network service delivery, perceive ease of use, service charge and availability of funds. For the purpose of this study, our model is specified in functional form as:

CS = $f$ (ATMS, ATMNSD, ATMPEU, ATMSC, ATMAF) ………………………………… (3.1)

Therefore, in explicit representation, it is

CS = $\beta_0 + \beta_1 ATMS_i + \beta_2 ATMNSD_i + \beta_3 ATMPEU_i + \beta_4 ATMSC_i + \beta_5 ATMAF_i + e_i$……….......... (3.2)

Where:

CS = Customer Satisfaction

$\beta_0$ = Constant

$\beta_1$ to $\beta_5$ Coefficients of the independent variables

ATMS = Automated Teller Machine Security

ATMNSD= Automated Teller Machine Network Service Delivery

ATMPEU= Automated Teller Machine Perceived Ease of Use

ATMSC= Automated Teller Machine Service Charge

ATMAF= Automated Teller Machine Availability of Funds

e= Error term.

Our A priori expectation is stated as: $\beta_1 > 0$, $\beta_2 > 0$, $\beta_3 > 0$, $\beta_4 > 0$ and $\beta_5 > 0$; meaning that:

$\beta_1 > 0$; increase in automated teller machine security will lead to increase in customer satisfaction

$\beta_2 > 0$; increase in automated teller machine network service delivery will lead to increase in customer satisfaction

$\beta_3 > 0$; increase in automated teller machine perceived ease of use will lead to increase in customer satisfaction

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$\beta_4>0$; increase automated teller machine service charges will lead to increase in customer satisfaction

$\beta_5>0$; increase in automated teller machine availability of funds will lead to increase in customer satisfaction.

**Table 1: Operationalization and Measurement of Variables**

| S/N | Variables | Notation, Measurement and Sources | Apriori sign. |
|---|---|---|---|
| 1 | CS – Dependent Variable | Customer satisfaction with ATM usage is operationally defined as the degree to which customers are satisfied with the overall quality of service received from ATM usage. It is measured using the  five point Likert ranging from Strongly Agree to Strongly Disagree (5 point ordinal scale measurement) | |
| 2 | ATMS – Independent Variable | Automated teller machine security is defined in this study as the extent to which customers perceive ATM as safe, secured and confidential and enhances privacy in performing its services. It is measured using the  five point Likert ranging from Strongly Agree to Strongly Disagree (5 point ordinal scale measurement) | + |
| 3 | ATMNSD – Independent Variable | Automated teller machine network service delivery is defined in this study as the extent to which ATMs enhance quick, quality and effective service delivery in its usage. It is measured using the  five point Likert ranging from Strongly Agree to Strongly Disagree (5 point ordinal scale measurement) | + |
| 4 | ATMPEU – Independent Variable | Automated teller machine perceived ease of use is defined in this study as the extent to which customers find it very simple to operate the ATMs. It is measured using the  five-point Likert ranging from Strongly Agree to Strongly Disagree (5 point ordinal scale measurement) | + |
| 5 | ATMSC – Independent Variable | Automated teller machine service charges is defined in this study as the extent to which ATM users perceive the rates and fees deducted from their bank accounts upon usage of ATM services. It is measured using the  five point Likert ranging from Strongly Agree to Strongly Disagree (5 point ordinal scale measurement) | + |
| 6 | ATMAF – Independent Variable | Automated teller machine availability of funds is defined in this study as the extent to which cash is available for dispensing by the ATM for its users when they need it. It is measured using the five point Likert ranging from Strongly Agree to Strongly Disagree (5 point ordinal scale measurement) | + |

Source: Field Survey *(2017)*

**DATA PRESENTATION AND ANALYSES**

The data collected from respondents through the use of structured questionnaire were analyzed using descriptive statistics such as simple percentage, frequency distribution, and mean. Also, inferential statistics such as principal component (factor) analysis, and multiple regression analyses were used to estimate the relationship between the dependent variable (customer satisfaction) and the independent variables (security, network service delivery, perceived ease of use, service charges and availability of funds) and also, test the related hypothesis. Specifically, ANOVA was used to test the influence of age and educational process on customer satisfaction of ATM usage. Independent t-test was used to test the influence of gender on customer satisfaction of ATM usage. All tests of significance were carried out at 5% level of significance. In addition, Statistical Package for Social Sciences (SPSS) version 23.0 was used to implement the data analyses.

**Security of Automated Teller Machine users in Deposit Money banks in Benin City.**      This section deals with issues relating to the security of ATM users in the deposit money banks. The results are presented in Table 2.

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**Table 2: Descriptive Analysis of Security of Automated Teller Machine Users**

| S/N | Statement | Strongly Agree | Agree | Not Sure | Disagree | Strongly Disagree | Mean |
|---|---|---|---|---|---|---|---|
| 4 | ATM exposes my financial information to unauthorized persons. | 0 (0%) | 18 (5.7%) | 15 (4.8%) | 184 (59.2%) | 94 (30.3%) | 1.86 |
| 5 | ATM makes it safer for me to withdraw cash. | 141 (45.3%) | 47 (15.1%) | 15 (4.8%) | 61 (19.6%) | 47 (15.1%) | 3.71 |
| 6 | Using ATM to withdraw cash makes me physically secure | 32 (10.3%) | 93 (29.9%) | 61 (19.6%) | 62 (19.9%) | 63 (20.3%) | 2.90 |
| 7 | Financially, transactions performed through ATM are safe. | 79 (25.4%) | 109 (35%) | 61 (19.6%) | 46 (14.8%) | 16 (5.1%) | 3.61 |
| 8 | ATM transactions disclose my financial status to unauthorized persons. | 0 (0%) | 16 (5.1%) | 31 (10%) | 154 (49.4%) | 110 (35.4%) | 1.85 |
| 9 | Performing transactions with my ATM on the internet is safe. | 64 (20.6%) | 48 (15.4%) | 46 (14.8%) | 122 (39.2%) | 31 (10%) | 2.97 |
| Mean index | | | | | | | 2.82 |

*Source: Field Survey (2017).*

Results in table 2 above are that 184 (59.2%) representing majority of the respondents disagree that ATM exposes their financial information to unauthorised persons, which shows a high level of satisfaction with ATM security, followed by 94 (30.3%) who disagree, 15 (4.8%) persons who were not sure, and 18 (5.7%) of them who agree. No respondent strongly agree. This finding is confirmed by the mean value of 1.86 which shows that ATM does not expose the financial information of its customers.

Furthermore, table 2 indicated that 141(45.3%) representing majority of the respondents strongly agree that using ATM makes it safer for them to withdraw cash, followed by 61 (19.6%) who disagree; 47 (15.1%) agree and 47 (15.1%) also strongly disagree, while 15 (4.8%) were not sure. The result of the finding is that ATM makes it safer for bank customers to withdraw cash. This is confirmed by the mean value of 3.71.the table also shows that 32 (10.3%) of the respondents strongly agree that using ATM to withdraw cash makes them physically secure, 93 (29.9%) of them agree; 62 (19.9%) disagree, and 63 (20.3%) of them strongly disagree while 61 (19.6%) were not

sure. Equal number of respondents, 126 (40.2%), agree as the number that disagree. As indicated in table 2, 79 (25.4%) of the respondents strongly agree that financial transactions performed through the ATM are safe while 109 (35%) of them agree, thus making a total of 188 (60.4%) that either strongly agree or agree. Furthermore, 16 (5.1%) of them strongly disagree while 46 (14.8%) of them disagree, thus making a total of 62 (19.9%) of them that disagree or strongly disagree; while 61 (19.6%) of them were not sure. Thus, majority of the respondents are in agreement that financial transactions performed through the ATM are safe. This is confirmed by the mean index of 3.61.

Table 2 revealed that 0 (0%) of the respondents strongly agree that ATM transaction disclose their financial status to unauthorized persons while 16 (5.1%) of them agree, thus making a total of 16 (5.1%) that either strongly agree or agree. Furthermore, 110 (35.4%) of them strongly disagree while 154 (49.5%) of them disagree, thus making a total of 264 (84.9%) of them that disagree or strongly disagree; while 31 (10%) of them were not sure. Thus, majority of the respondents believe that ATM transactions do not disclose their financial status to unauthorized persons. This finding is supported by the mean index of 1.85.Table 2 also showed that 64 (20.6%) of the respondents strongly agree that performing transactions with ATM on the Internet is safe while 48 (15.4%) of them agree, thus making a total of 112 (36%) that either strongly agree or agree. Furthermore, 31 (10%) of them strongly disagree while 122 (39.2.4%) of them disagree, thus making a total of 153 (49.2%) of them that disagree or strongly disagree; while 61 (19.6%) of them were not sure. Thus, the finding is that ATM transactions performed on the Internet are safe. This is confirmed by the mean index of 2.97.

**AUTOMATED TELLER MACHINE NETWORK SERVICE DELIVERY**

This section deals with issues relating to the efficiency of ATM network service delivery in the deposit money banks. The results are presented in Table 3 below.

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**Table 3 Efficiency of Automated Teller Machine Network Service Delivery**

| S/N | Statement | Strongly Agree | Agree | Not Sure | Disagree | Strongly Disagree | Mean |
|-----|-----------|----------------|-------|----------|----------|-------------------|------|
| 10 | ATM network service makes it easy for me to perform bank transactions whenever I like. | 172 (55.3%) | 60 (19.3%) | 3 (1%) | 61 (19.6%) | 15 (4.8%) | 4.01 |
| 11 | I can easily access most of the ATM online services without network failure. | 31 (10%) | 92 (29.6%) | 11 (3.5%) | 100 (32.2%) | 77 (24.8%) | 2.69 |
| 12 | ATM network services are very good and reliable. | 15 (4.8%) | 140 (45%) | 10 (3.2%) | 110 (35.4%) | 36 (11.6%) | 2.96 |
| 13 | When I urgently need access to my funds with ATM, the services are always available. | 0 (0%) | 94 (30.2%) | 31 (10%) | 155 (49.8%) | 31 (10%) | 2.61 |
| 14 | Recharging my cell phone with my ATM is usually easy because of no network failure. | 32 (10.3%) | 93 (29.9%) | 47 (15.1%) | 92 (29.6%) | 47 (15.1%) | 2.91 |
| 15 | The speed of operating ATM is usually fast when there is good network. | 233 (74.9%) | 78 (25.1%) | 0 (0%) | 0 (0%) | 0 (0%) | 4.75 |
| | Mean index | | | | | | 2.65 |

*Source: Field Survey (2017).*

Results in table 3 show that 172 (55.4%) of the respondents strongly agree that ATM network service makes it easy for them to perform bank transactions whenever they like while 60 (20%) of them agree, thus making a total of 232 (75.4%) that either strongly agree or agree. Furthermore, 15 (4.8%) of them strongly disagree while 61 (19.6%) of them disagree, thus making a total of 76 (24.4%) of them that disagree or strongly disagree. 3 (1%) of the respondents were not sure. Thus, the finding here is that majority of the respondents are of the opinion that ATM network service makes it easy for them to perform bank transactions whenever they like. This is strongly supported by the mean value of 4.01.

As showed in table 3 above, 31 (10%) of the respondents strongly agree that they can easily access most of the ATM online services without network failure while 92 (29.6%) of them agree, thus making a total of 123 (39.6%) that either agree or strongly agree. Furthermore, 100 (32.2%) of them strongly disagree while 77 (24.8%) of them disagree, thus making a total of 177 (57%) of them that disagree or strongly disagree. 11 (3.2%) of the respondents were not sure. This finding is supported

by the mean value of 2.69, and the result is that the respondents cannot easily access most of the ATM online services without network failure.

Also, table 3 indicated that 15 (4.8%) of the respondents strongly agree that ATM network services are very good and reliable while 140 (45%) of them agree, thus making a total of 155 (49.8%) that either agree or strongly agree. Furthermore, 36 (11.6%) of them strongly disagree while 110 (35.4%) of them disagree, thus making a total of 146 (50.2%) of them that disagree or strongly disagree. 10 (3.2%) of them were not sure. Thus, majority of the respondents believed that ATM network services are not very good and reliable. This finding is in line with the mean value of 2.96.Furthermore, 0 (0%) of the respondents strongly agree that when they urgently need access to their funds with ATM, the services are always available, while 94 (30.2%) of them agree, thus making a total of 94 (30.2%) that either agree or strongly agree. Also, 31 (10%) of them strongly disagree while 155 (49.8%) of them disagree, thus making a total of 186 (59.8%) of them that disagree or strongly disagree; while 31 (10%) of them were not sure. Thus, majority of the respondents do not believe that when they urgently need access to their funds with ATM, the services are always available. This finding is supported by the mean value of 2.61.

As shown in table 3, 32 (10.3%) of the respondents strongly agree that recharging my cell phone with my ATM is usually easy because of no network failure, while 93 (29.9%) of them agree, thus making a total of 125 (40.2%) that either agree or strongly agree. Furthermore, 47 (15.1%) of them strongly disagree while 92 (29.6%) of them disagree, thus making a total of 139 (44.7%) of them that disagree or strongly disagree, while 47 (15.1%) of them were not sure. The mean value of 2.91 confirmed this finding. Based on this finding, bank customers using ATM do not believe that recharging their cell phones with ATM is usually easy because of network failure.

Finally, table 3 revealed that 233 (74.9%) of the respondents strongly agree that the speed of operating ATM is usually fast where there is good network while 78 (25.1%) of them agree, thus making a total of 311 (100%) that either agree or strongly agree. None of the respondents disagree or strongly disagree. The finding here is that the speed of operating the ATM is usually fast where there is good network. This is in line with the mean value of 4.75

**PERCEIVED EASE OF USE OF AUTOMATED TELLER MACHINE BY CUSTOMERS**

This section deals with issues concerning the perceived ease of use of ATM by the deposit money bank customers. The results are presented in Table 4 below

**Table 4 Perceived Ease of Use of Automated Teller Machine by Customers**

| S/N | Statement | Strongly Agree | Agree | Not Sure | Disagree | Strongly Disagree | Mean |
|---|---|---|---|---|---|---|---|
| 16 | Using ATM requires a lot of mental effort. | 10 (3.2%) | 46 (14.8%) | 6 (1.9%) | 138 (44.4%) | 111 (35.7%) | 2.05 |
| 17 | For me, ATM is easy to use. | 250 (80.4%) | 35 (11.3%) | 10 (3.2%) | 16 (5.1%) | 0 (0%) | 4.67 |
| 18 | I find it difficult to understand the inscriptions on the ATM. | 10 (3.2%) | 5 (1.6%) | 0 (0%) | 140 (45%) | 156 (50.2%) | 1.63 |
| 19 | I consider ATM to be user friendly and flexible. | 173 (55.6%) | 77 (24.8%) | 31 (10%) | 15 (4.8%) | 15 (4.8%) | 4.22 |
| 20 | To me, using ATM has reduced the psychological stress i experience when I go to the banking halls. | 250 (80.4%) | 31 (10%) | 0 (0%) | 30 (9.6%) | 0 (0%) | 4.61 |
| | Mean index | | | | | | M |

*Source: Field Survey (2017).*

Results in table 4 show that 10 (3.2%) of the respondents strongly agree that using ATM requires a lot of mental effort while 46 (14.8%) of them agree, thus making a total of 56 (18%) that either agree or strongly agree. Furthermore, 111 (35.7%) of them strongly disagree while 138 (44.4%) of them disagree, thus making a total of 249 (80.1%) of them that disagree or strongly disagree. 6 (1.9%) of the respondents were not sure. Thus, majority of the respondents either disagree or strongly disagree that using ATM requires a lot of mental effort. This is supported by the mean value of 2.05.

Table 4 also pointed that 250 (80.4%) of the respondents strongly agree that ATM is easy to use while 35 (11.3%) of them agree, thus making a total of 285 (91.7%) that either agree or strongly agree. Also 16 (5.1%) of them disagree while 10 (3.2%) of them were not sure. The mean value of 4.67 also confirmed this finding and the result is that majority of the respondents believe that ATM is easy to use. Table 4 further revealed that 10 (3.2%) of the respondents strongly agree that they find it difficult to understand the inscriptions on the ATM, 5 (1.6%) of them agree, making a total of 15 (4.8%) that agree or strongly agree. 140 (45%) of them disagree and 156 (50.2%) of them strongly disagree. Thus majority of them disagree or strongly disagree that they find it difficult to understand the inscriptions on the ATM. This finding is strongly affirmed by the mean value of 1.63.

As revealed by table 4 above, 173 (55.6.3%) of the respondents strongly agree that they consider ATM to be user friendly and flexible, while 77 (24.8%) of them agree; thus making a total of 250 (80.4%) that either agree or strongly agree. Furthermore, 15 (4.8%) of them strongly disagree while

another 15 (4.8%) of them disagree, thus making a total of 30 (9.6%) of them that disagree or strongly disagree, while 31 (10%) of them were not sure. The finding here is that majority of the respondents believe that ATM is user friendly and flexible. This finding is supported by the mean value of 4.22.As showed in table 4, 250 (80.4%) of the respondents strongly agree that using ATM has reduced the psychological stress they experienced when they go to banking halls, while 31 (10%) of them agree, thus making a total of 281 (90.4%) that either agree or strongly agree. Furthermore, 30 (9.6%) of them disagree. The mean value of 4.61 strongly supported this finding that using ATM has reduced the psychological stress experienced by customers when they go to banking halls.

**AUTOMATED TELLER MACHINE SERVICE CHARGES BY DEPOSIT MONEY BANKS**

This section deals with issues concerning the service charges by the deposit money banks on customers for their use of ATM. The results are presented in Table 5 below.

**Table 5 Automated Teller Machine service charges by Deposit Money Banks**

| S/N | Statement | Strongly Agree | Agree | Not Sure | Disagree | Strongly Disagree | Mean |
|---|---|---|---|---|---|---|---|
| 21 | Fee charged for funds transfer is very satisfactory. | 16 (5.1%) | 124 (39.9%) | 3 (1%) | 60 (19.3%) | 108 (34.7%) | 2.61 |
| 22 | Financially, using ATM is cost effective for me. | 32 (10.3%) | 124 (39.9%) | 32 (10.3%) | 77 (24.8%) | 31 (10%) | 2.22 |
| 23 | ATM maintenance fee is reasonable. | 32 (10.3%) | 139 (44.7%) | 0 (0%) | 46 (14.8%) | 94 (30.2%) | 2.90 |
| 24 | I do not see the need for charges for ATM maintenance. | 32 (10.3%) | 77 (24.8%) | 77 (24.8%) | 62 (19.9%) | 63 (20.3%) | 2.85 |
| 25 | I am comfortable with the fee charged after third interbank withdrawal on ATM. | 63 (20.3%) | 70 (22.5%) | 8 (2.5%) | 139 (44.7%) | 31 (10%) | 2.98 |
| 26 | Most banks do not keep to government stipulated charges on ATM transactions. | 94 (30.2%) | 76 (24.4%) | 109 (35%) | 16 (5.1%) | 16 (5.1%) | 3.70 |
| Mean index | | | | | | | 2.87 |

*Source: Field Survey (2017).*

Results in table 5 show that 16 (5.1%) of the respondents strongly agree that fee charged for funds transfer is very satisfactory, while 124 (39.9%) of them agree, thus making a total of 140 (45%) that either agree or strongly agree. Furthermore, 108 (34.7%) of them strongly disagree while 60 (20%) of them disagree, thus making a total of 168 (54.7%) of them that disagree or strongly disagree. 3 (1%)

of them were not sure. Thus, majority of the respondents either disagree or strongly disagree that fee charged for funds transfer is very satisfactory. This is supported by the mean value of 2.61.

Table 5 also indicated that 32 (10.3%) of the respondents strongly agree that financially, using ATM is cost effective for them, 124 (39.9%) of them agree, thus making a total of 156 (50.2%) that either agree or strongly agree. Furthermore, 31 (10.7%) of them strongly disagree while 77 (24.8%) of them disagree, thus making a total of 108 (34.8%) of them that disagree or strongly disagree. The result of the finding is that customers of banks using ATM are in agreement that financially, using ATM is cost effective for them. This is in line with the mean value of 2.22.As stated in table 5 above, 32 (10.3%) of the respondents strongly agree that ATM maintenance fee is reasonable, 139 (44.7%) of them agree, thus making a total of 171 (55%) that either agree or strongly agree. Furthermore, 94 (30.2%) of them strongly disagree while 46 (14.8%) of them disagree, thus making a total of 140 (45%) of them that disagree or strongly disagree. This finding is supported by the mean score of 2.90 and this shows that majority of the respondents agree that ATM maintenance fee is reasonable.

Table 5 also showed that 32 (10.3%) of the respondents strongly agree that they do not see the need for charges for ATM maintenance, 77 (24.8%) of them agree, thus making a total of 109 (35.1%) that either agree or strongly agree. Furthermore, 63 (20.3%) of them strongly disagree while 62 (19.9%) of them disagree, thus making a total of 125 (40.2%) of them that disagree or strongly disagree. Also, 77 (24.8%) of them were not sure. Thus, majority of the respondents either agree or strongly agree they do not see the need for charges for ATM maintenance. This is supported by the mean value of 2.85.

It was also revealed in table 4.5 that 63 (20.3%) of the respondents strongly agree that they are comfortable with the fee charged after third interbank withdrawal on ATM., 70 (22.5%) of them agree, thus making a total of 133 (42.8%) that either agree or strongly agree. Furthermore, 139 (44.7%) of them strongly disagree while 31 (10%) of them disagree, thus making a total of 170 (54.7%) of them that disagree or strongly disagree. 8 (2.5%) 0f them where not sure. This means that majority of the respondents are not comfortable with the fee charged after third interbank withdrawal on the ATM. This finding is confirmed by the mean value of 2.98.

Table 5 clearly indicate that 94 (30.2%) of the respondents strongly agree that most banks do not keep to government stipulated charges on ATM transactions, 76 (24.4%) of them agree, thus making a total of 170 (54.6%) that either agree or strongly agree. Furthermore, 16 (5.1%) of them strongly disagree while another 16 (5.1%) of them disagree, thus making a total of 32 (10.2%) of them that disagree or strongly disagree; while 109 (35%) were not sure. Thus, majority of the respondents

either agree or strongly agree that most banks do not keep to government stipulated charges on ATM transactions. This is confirmed by the mean value of 3.70.

**AVAILABILITY OF CASH IN AUTOMATED TELLER MACHINES**

This section deals with issues relating to funds available at the Automated Teller Machines at all times for customers. The results are presented in Table 6 below.

**Table 6 Availability of cash in Automated Teller Machines**

| S/N | Statement | Strongly Agree | Agree | Not Sure | Disagree | Strongly Disagree | Mean |
|---|---|---|---|---|---|---|---|
| 27 | The ATM is always able to dispense cash as at when it is needed. | 28 (9%) | 64 (20.6%) | 4 (1.2%) | 184 (59.2%) | 31 (10%) | 2.59 |
| 28 | There is never restrictions on the amount of money an ATM can dispense at every transaction. | 16 (5.1%) | 0 (0%) | 0 (0%) | 154 (49.5%) | 141 (45.3%) | 1.70 |
| 29 | All banks ATM dispense cash anytime of the day to customers. | 47 (15.1%) | 31 (10%) | 16 (5.1%) | 77 (24.8%) | 140 (45%) | 2.25 |
| Mean index | | | | | | | 2.18 |

*Source: Field Survey (2017).*

Results in table 6 show that 28 (9%) of the respondents strongly agree that the ATM is always able to dispense cash as at when it is needed, 64 (20.6%) of them agree, thus making a total of 92 (29.6%) that either agree or strongly agree. Furthermore, 31 (10%) of them strongly disagree while another 184 (59.2%) of them disagree, thus making a total of 215 (69.2%) of them that disagree or strongly disagree. 4 (1.2%) of the respondents were not sure. This means that majority of the respondents believe that the ATM is always able to dispense cash as at when it is needed.Table 6 further showed that 16 (5.1%) of the respondents strongly agree that there is never restriction on the amount of money an ATM can dispense at every transaction, 141 (45.3%) of them strongly disagree while 154 (49.5%) of them disagree, thus making a total of 295 (94.8%) of them that disagree or strongly disagree. Thus, majority of the respondents either disagree or strongly disagree that there is never restriction on the amount of money an ATM can dispense at every transaction. This is in line with the mean value of 1.70.

Finally, table 6 revealed that 47 (15.1%) of the respondents strongly agree that all banks' ATM dispense cash any time of the day to customers, 31 (10%) of them agree, thus making a total of 78 (25.1%) that either agree or strongly agree. Furthermore, 140 (45%) of them strongly disagree while another 77 (24.8%) of them disagree, thus making a total of 217 (69.8%) of them that disagree or

strongly disagree; while 16 (5.1%) were not sure. Thus, majority of the respondents either disagree or strongly disagree. This is supported by the mean value of 2.25.

**CUSTOMER SATISFACTION OF AUTOMATED TELLER MACHINE USAGE**

This section explains the level of satisfaction derived by of Automated Teller Machines in Deposit Money Banks. The results are presented in Table 7 below

**Table 7 Customer Satisfaction of Automated Teller Machine Usage**

| S/N | Statement | Strongly Agree | Agree | Not Sure | Disagree | Strongly Disagree | Mean |
|-----|-----------|----------------|-------|----------|----------|-------------------|------|
| 30 | The quality of service I receive through the use of ATM is satisfactory. | 63 (20.3%) | 180 (57.9%) | 31 (10%) | 31 (10%) | 6 (1.9%) | 3.85 |
| 31 | Having considered the overall experience in the use of ATM, I am satisfied with the services I derive from its use. | 110 (35.4%) | 150 (48.2%) | 40 (12.9%) | 4 (1.2%) | 7 (2.3%) | 3.17 |
| 32 | I am willing to continue the use of ATM | 160 (51.4%) | 130 (41.8%) | 12 (3.9%) | 0 (0%) | 9 (2.9%) | 4.39 |
| 33 | I am satisfied with the opportunity ATM has given me to make payments without cash. | 171 (55%) | 110 (35.4%) | 10 (3.2%) | 18 (5.8%) | 2 (0.6%) | 4.38 |
| 34 | I strongly recommend the use of ATM to others. | 169 (54.3%) | 130 (41.8%) | 3 (1%) | 2 (0.6%) | 7 (2.3%) | 4.45 |
| | Mean index | | | | | | 4.05 |

*Source: Field Survey (2017).*

Results in table 7 show that 63 (20.3%) of the respondents strongly agree that the quality of service they receive through the use of ATM is satisfactory, 180 (57.9%) of them agree, thus making a total of 243 (78.2%) that either agree or strongly agree. Furthermore, 31 (10%) of them disagree, while another 6 (1.9) of them strongly disagree. 31 (10%) were not sure. This finding is supported by the mean score of 3.85 and this means that majority of the respondents are in agreement that the quality of service they receive through the use of ATM is satisfactory.

As stated in table 7, 110 (35.4%) of the respondents strongly agree that having considered the overall experience encountered in the use of ATM, they are satisfied with the service they derive from its use, 150 (48.2%) of them agree. 4 (1.2%) of the respondents disagree, while 7 (2.3%) of

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them strongly disagree, making a total of 11 (3.5%) of them that either disagree or strongly disagree. 40 (12.9%) of them were not sure. The mean score of 3.17 confirmed the finding which means that majority of the respondents are in agreement that having considered the overall experience encountered in the use of ATM, they are satisfied with the service they derive from its use. Table 7 also showed that 160 (51.4%) of the respondents strongly agree that they are very willing to continue the use of ATM and 130 (41.8%) of them agree. Also, 9 (2.9%) of the respondents strongly disagree, while 12 (3.9%) of them where not sure. The finding is confirmed by the mean score of 4.39 which means that majority of the respondents are very willing to continue the use of ATM.

Table 7 also revealed that 171 (55%) of the respondents strongly agree that they are satisfied with the opportunity ATM has given them to make payments without cash, 110 (35.4%) of them agree. Furthermore, 18 (5.8%) of the respondents disagree, while 2 (0.6%) of them strongly disagree. 10 (3.2%) were not sure. Thus, majority of the respondents either agree or strongly agree that they are satisfied with the opportunity ATM has given them to make payments without cash and this is in line with the mean value of 4.38.

Table 7 further showed that 169 (54.3%) of the respondents strongly agree that they strongly recommend the use of ATM to others and 130 (41.8%) of them agree. 2 (0.6%) of the respondents disagree, while 7 (2.3%) of them strongly disagree. 3 (1%) of the respondents were not sure. The mean score of 4.45 confirmed this finding and it means that majority of the respondents are strongly willing to recommend the use of ATM to others.

**INFERENTIAL TESTS**

Factor analysis was performed for each of the constructs of ATM usage (security, network service delivery, ease of use, service charges and availability of funds) as well as for customer satisfaction. The results of the correlation matrix for security shows that factor analysis is appropriate since majority of the correlations are significant. This is represented in table 8 below.

**Table 8 Correlation Matrix (Security)**

|     | Q4    | Q5     | Q6    | Q7    | Q8    | Q9  |
|-----|-------|--------|-------|-------|-------|-----|
| Q4  | 1.00  |        |       |       |       |     |
| Q5  | -0.15 | 1.0    |       |       |       |     |
| Q6  | -0.19 | 0.71   | 1.0   |       |       |     |
| Q7  | -0.55 | -0.15  | 0.18  | 1.0   |       |     |
| Q8  | 0.92  | -0.015 | 0.13  | -0.50 | 1.0   |     |
| Q9  | -0.17 | 0.72   | -0.35 | 0.02  | - 0.11 | 1.0 |
| Q4  |       |        |       |       |       |     |
| Q5  | 0.37  |        |       |       |       |     |
| Q6  | 0.00  | 0.00   |       |       |       |     |
| Q7  | 0.00  | 0.40   | 0.00  |       |       |     |
| Q8  | 0.00  | 0.00   | 0.011 | 0.00  |       |     |
| Q9  | 0.00  | 0.00   | 0.00  | 0.359 | 0.030 |     |

*Source: Field Survey (2017).*

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Results of the Bartlett's test for sphericity reveals an asymptotic significant p < 0.001, thus indicating that the correlation matrix is significantly different from an identity matrix; Also, the Kaiser-Meyer-Olkin Measure of Sampling adequacy (MSA) is approximately 0.432, barely acceptable and thus significant. The significance of the KMO indicates that the responses given in the sample are adequate. The two values indicate that the variables in the model can be reduced. Two principal components were extracted from the six constructs that were used to measure security. The rotated component matrix shows that Q1, Q4 and Q5 are heavily loaded on factor 1 while Q2, Q3 and Q5 are heavily loaded on factor 2.

Table 9 below shows that for network service delivery, the results of the correlation matrix shows that factor analysis is appropriate since majority of the correlations are significant.

**Table 9 Correlation Matrix (Network Service Delivery)**

|      | Q4    | Q5    | Q6    | Q7    | Q8     | Q9   |
|------|-------|-------|-------|-------|--------|------|
| Q10  | 1.00  |       |       |       |        |      |
| Q11  | 0.24  | 1.0   |       |       |        |      |
| Q12  | 0.26  | 0.86  | 1.0   |       |        |      |
| Q13  | 0.25  | 0.65  | 0.58  | 1.0   |        |      |
| Q14  | 0.12  | 0.44  | 0.37  | 0.40  | 1.0    |      |
| Q15  | 0.51  | - 0.08| 0.12  | 0.12  | - 0.14 | 1.00 |
| Q10  |       |       |       |       |        |      |
| Q11  | 0.00  |       |       |       |        |      |
| Q12  | 0.00  | 0.00  |       |       |        |      |
| Q13  | 0.00  | 0.00  | 0.00  |       |        |      |
| Q14  | 0.015 | 0.00  | 0.00  | 0.00  |        |      |
| Q15  | 0.00  | -0.08 | 0.14  | 0.15  | 0.00   |      |

*Source: Field Survey (2017).*

Results of the Bartlett's test for sphericity reveals an asymptotic significant p < 0.001, thus indicating that the correlation matrix is significantly different from an identity matrix; Also, the Kaiser-Meyer-Olkin Measure of Sampling adequacy (MSA) is approximately 0.623, acceptable and thus significant. The significance of the KMO indicates that the responses given in the sample are adequate. The two values indicate that the variables in the model can be reduced. Two principal components were extracted from the six constructs that were used to measure network service delivery. The rotated component matrix shows that Q8, Q9, Q10 and Q11 are heavily loaded on factor 1 while Q1 and Q12 are heavily loaded on factor 2 as shown in table 9 above.

For ease of use, the results of the correlation matrix shows that factor analysis is appropriate since majority of the correlations are significant as shown in table 4.10 below.

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**Table.10 Correlation Matrix (*Ease of Use*)**

|  | Q4 | Q5 | Q6 | Q7 | Q8 | Q9 |
|---|---|---|---|---|---|---|
| Q16 | 1.00 |  |  |  |  |  |
| Q17 | -0.33 | 1.0 |  |  |  |  |
| Q18 | -0.058 | 0.09 | 1.0 |  |  |  |
| Q19 | -0.345 | 0.08 | -0.38 | 1.0 |  |  |
| Q20 | -0.133 | 0.36 | 0.07 | 0.52 | 1.0 |  |
| Q16 |  |  |  |  |  |  |
| Q17 | 0.00 |  |  |  |  |  |
| Q18 | 0.16 | 0.056 |  |  |  |  |
| Q19 | 0.00 | 0.078 | 0.00 |  |  |  |
| Q20 | 0.00 | 0.00 | 0.121 | 0.00 |  |  |

*Source: Field Survey (2017).*

Results of the Bartlett's test for sphericity reveals an asymptotic significant $p < 0.001$, thus indicating that the correlation matrix is significantly different from an identity matrix; Also, the Kaiser-Meyer-Olkin Measure of Sampling adequacy (MSA) is approximately 0.498, barely acceptable and thus significant. The significance of the KMO indicates that the responses given in the sample are adequate. The two values indicate that the variables in the model can be reduced. Two principal components were extracted from the six constructs that were used to measure network service delivery. The rotated component matrix shows that Q13, Q14, Q17 are heavily loaded on factor 1 while Q15 and Q16 are heavily loaded on factor 2 (See table 16 in appendix 11).

Using the same reasoning, the constructs of service charges were found to have significant correlation with $P < 001$ for Bartlett' test for sphericity and  Kaiser-Meyer-Olkin Measure of Sampling adequacy of 0.56. The correlation matrix for service charges is as presented in the table below.

**Table 11 Correlation Matrix (*Service Charges*)**

|  | Q18 | Q19 | Q20 | Q21 | Q22 | Q23 |
|---|---|---|---|---|---|---|
| Q21 | 1.00 |  |  |  |  |  |
| Q22 | 0.732 | 1.0 |  |  |  |  |
| Q23 | 0.513 | 0.326 | 1.0 |  |  |  |
| Q24 | 0.197 | 0.120 | 0.062 | 1.0 |  |  |
| Q25 | -0.040 | - 0.120 | -0.172 | - 0.472 | 1.00. |  |
| Q26 | -0.550 | -0.136 | -0.045 | -0.221 | -0.024 | 1.000 |
| Q21 |  |  |  |  |  |  |
| Q22 | 0.00 |  |  |  |  |  |
| Q23 | 0.00 | 0.000 |  |  |  |  |
| Q24 | 0.00 | 0.019 | 0.145 |  |  |  |
| Q25 | 0.247 | 0.019 | 0.001 | 0.00 |  |  |
| Q26 | 0.00 | 0.000 | 0.221 | 0.000 | 0.341 |  |

*Source: Field Survey (2017).*

Three factors were extracted; Q18, Q19 and Q23 were significant on factor 1. Q21 and Q22 were

significant on factor 2 while Q20 was significant on factor 3. Furthermore, the constructs of availability of funds show that the Bartlett' test for sphericity and Kaiser-Meyer-Olkin measure of sampling adequacy were significant and two principal components (factors) were extracted; with Q25 and Q26 heavily loaded on factor 1 while Q24 was heavily loaded on factor 2 (See tables 18-23 in appendix 11).The correlation matrix for availability of funds is presented below.

**Table 12 Correlation Matrix (*Availability of funds*)**

|     | Q24    | Q25   | Q26   |
| --- | ------ | ----- | ----- |
| Q27 | 1.00   |       |       |
| Q28 | 0.072  | 1.00  |       |
| Q29 | -0.197 | 0.219 | 1.000 |
| Q27 |        |       |       |
| Q28 | 0.102  |       |       |
| Q29 | 0.000  | 0.000 |       |

Source: Field Survey (2017).

The constructs of customer satisfaction show that only one component was extracted from the five constructs that were used to measure customer satisfaction (see tables 30–32 in appendix 11**).**The correlation matrix for customer satisfaction is also presented in table 13 below.

**Table 13 Correlation Matrix (*Customer satisfaction*)**

|     | Q27   | Q28   | Q29   | Q30   | Q31  |
| --- | ----- | ----- | ----- | ----- | ---- |
| Q30 | 1.00  |       |       |       |      |
| Q31 | 0.483 | 1.00  |       |       |      |
| Q32 | 0.386 | 0.571 | 1.0   |       |      |
| Q33 | 0.184 | 0.472 | 0.780 | 1.0   |      |
| Q34 | 0.386 | 0.571 | 1.000 | 0.760 | 1.00 |
| Q30 |       |       |       |       |      |
| Q31 | 0.00  |       |       |       |      |
| Q32 | 0.16  | 0.056 |       |       |      |
| Q33 | 0.00  | 0.078 | 0.00  |       |      |
| Q34 | 0.00  | 0.00  | 0.121 | 0.00  |      |

Source: Field Survey (2017).

Following the extraction of factors, the results of the factor analysis (principal components of the constructs) were used as explanatory variables in least square analysis with customer satisfaction serving as the dependent variable. The results of the least square show that the adjusted R square is 0.722, thus implying that 72.2% of the variation in customer satisfaction is explained by the five principal factors which consist of security, network service delivery, ease of use, service charges and availability of funds. This is illustrated in the table below.

**Table 14 Model Summary**

| Model | R | R-Square | Adjusted R Square | Std. error of the estimate | Durbin-Watson |
|---|---|---|---|---|---|
| 1. | 0.856 | 0.732 | 0.722 | 0.5397 | 2.064 |

*Source: Field Survey (2017).*

a.   Extracted Factor scores

b.   customer Satisfaction (Regression factor score 6)

The ANOVA table below shows that the calculated F statistic has an asymptotic significant probability (P < 0.001), which is significant at one per cent level; thus implying that the overall significance of the regression model is good.

**Table 15     ANOVA table**

| Model | Sum of Squares | df. | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Regression | 226.027 | 11 | 20.548 | 70.535 | 0.00 |
| Residual | 82.733 | 284 | 0.291 | | |
| Total | 308.760 | 295 | | | |

*Source: Field Survey (2017).*

a.   Dependent variable – Customer Satisfaction

b.   Predictors (constant), Factor scores 1, 2, 3, 4 and 5

Lastly, the results in table 4.16, the table of coefficients, show that the calculated t and the associated significant probabilities were:  -5.712 (P < 0.001), -13.594 (P < 0.046), -7.703 (P < 0.001), 9.627 (P < 0.046), -2.558 (P = 0.011), 3.236 (P = 0.001), -8.105 (P < 0.001), 0.403 (P = 0.687), 10.218 (P < 0.001), 10.259 (P < 0.001) and 8.615 (P < 0.001) for Factors 1(1), 1(2), 2(1), 2(2), 3(1), 3(2), 4(1), 4(2), 4(3), 5(1) and 5(2) respectively.

**Table 16 Coefficients**

| Model | Unstandardized Coefficients | | | t. | Sig. |
|---|---|---|---|---|---|
| | B | Std. Error | Beta | | |
| Constant | -0.065- | 0.032 | | -2.022 | 0.044 |
| Factor Score 1(1) | 0.303 | 0.053 | -0.300 | -5.712 | 0.000 |
| Factor Score 1(2) | -0.639 | 0.047 | -0.632 | -13.594 | 0.000 |
| Factor Score 2 (1) | -0.480 | 0.068 | -0.468 | -7.073 | 0.000 |
| Factor Score 2(2) | 0.665 | 0.069 | 0.664 | 9.627 | 0.000 |
| Factor Score 3(1) | -0.172 | 0.067 | -0.170 | -2.558 | 0.011 |
| Factor Score 3(2) | 0.140 | 0.043 | 0.140 | 3.236 | 0.001 |
| Factor Score 4(1) | -0.468 | 0.058 | -0.458 | -8.105 | 0.000 |
| Factor Score 4(2) | 0.025 | 0.063 | 0.025 | 0.403 | 0.687 |
| Factor Score 4(3) | 0.614 | 0.060 | 0.600 | 10.218 | 0.000 |
| Factor Score 5(1) | 0.406 | 0.040 | 0.395 | 10.259 | 0.000 |
| Factor Score 5(2) | 0.854 | 0.097 | 0.835 | 8.615 | 0.000 |

*Source: Field Survey (2017).*

a.   Dependent variable – Customer Satisfaction

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b.   Predictors (constant), Factor scores 1, 2, 3, 4 and 5

The implication is that factors 1 (1), 1 (2), 2 (1), 2 (2), 3(1), 3(2) 4(1), 4 (3), 5 (1) and 5 (2) are significant predictors of customer satisfaction one per cent level, factor 3 (1) is significant at the 5% level while factor 4(2) is not significant. Thus, security, network service delivery, ease of use, ease of service and availability of funds are significant factors that explain customers' satisfaction with ATM services. The negative coefficients and t values for factors 1(1), 1(2), 2(1), 3(1), and 4(1) show that respondents' perception is inversely proportional to the construct used. That is, although the factors are significant, the respondents do not agree with the way the constructs were stated; for example, "ATM exposes my financial information to unauthorized persons", a negative coefficient indicates that customers do not agree that ATM exposes my financial information to unauthorized persons.

**Hypothesis one**: ATM security has no significant influence on customers' satisfaction in deposit money banks in Benin City.

**Hypothesis two**: ATM network service has no significant influence on customers' satisfaction in deposit money banks in Benin City.

**Hypothesis three**: ATM service charges have no significant influence on customers' satisfaction in deposit money banks in Benin City.

**Hypothesis four**: ATM perceived ease of use has no significant influence on customers' satisfaction in deposit money banks in Benin City.

**Hypothesis five**: ATM security has no significant influence on customers' satisfaction in deposit money banks in Benin City.

This is illustrated in table 17 below:

**Table 17 Coefficients**

| Model | Unstandardized Coefficients | | | t. | Sig. |
|---|---|---|---|---|---|
| | B | Std. Error | Beta | | |
| Constant | -0.021 | 0.051 | | -0.401 | 0.689 |
| ATM security | -0.564 | 0.082 | -0.439 | -6.912 | 0.000 |
| ATM, service delivery | 0.347 | 0.083 | 0.242 | 4.162 | 0.000 |
| ATM perceived ease of use ATM | 0.162 | 0.078 | 0.114 | 2.072 | 0.039 |
| service charge | 0.233 | 0.119 | 0.131 | 1.951 | 0.052 |
| ATM availability of funds. | 0.237 | 0.080 | 0.165 | 2.976 | 0.003 |

*Source: Field Survey (2017).*

c.   Dependent variable – Customer Satisfaction

d.   Predictors (constant) - ATM security, ATM, service delivery, ATM perceived ease of use, ATM service charge and ATM availability of funds.

The average values of the factors in each construct category were computed to act as single

constructs for each principle components and to capture the explanatory variables (ATM security, ATM, service delivery, ATM perceived ease of use, ATM service charge and ATM availability of funds). The results of the least square show that the adjusted R square is 0.275, thus implying that 27.5% of the variation in customer satisfaction is explained by ATM security, ATM, service delivery, ATM perceived ease of use, ATM service charge and ATM availability of funds. The calculated value of the Durbin-Watson statistic is 2.196 as presented in the table below.

**Table 18 Model Summary**

| Model | R | R-Square | Adjusted R Square | Std. error of the estimate | Durbin-Watson |
|---|---|---|---|---|---|
| 1. | 0.524 | 0.273 | 0.263 | 0.8786 | 2.196 |

*Source: Field Survey (2017).*

a. Predictors: ATM security, ATM, service delivery, ATM perceived ease of use, ATM service charge and ATM availability of funds.

b. Dependent Variable: customer Satisfaction (Regression factor score 6)This value is within the permissible interval of du, 4-du, thus implying that the stochastic error terms are not serially correlated. The ANOVA table shows that the calculated F statistic is 22.00 and has an asymptotic significant probability, $P < 0.001$, which is significant at one per cent level; thus implying that the overall significance of the regression model is good (see table 33 in appendix 11). The show that the calculated t and the associated significant probabilities were: -0.401 (0.689), -6.912 ($P < 0.001$), 4.162 ($P < 0.001$), 2.072 (0.039), 1.951 (0.052) and 2.976 (0.003) for constant, ATM security, ATM, service delivery, ATM perceived ease of use, ATM service charge and ATM availability of funds. Thus, Hypothesis three is rejected since p value is lot less than 0.05. We do not reject Hypotheses one, two, four and five. The implication is that ATM security, ATM, service delivery, ATM perceived ease of use and ATM availability of funds have significant implications on customer service delivery. Only service charge proved to be insignificant.

The model of the study is

$CS = \beta_0 + \beta_1 ATMS_i + \beta_2 ATMNSD_i + \beta_3 ATMPEU_i + \beta_4 ATMSC_i + \beta_5 ATMAF_i + e$

From table 53, $\beta_0 = -0.021$, $\beta_1 = -0.439$, $\beta_2 = 0.242$, $\beta_3 = 0.114$, $\beta_4 = 0.131$, and $\beta_5 = 0.165$.

Thus, the model is:

$CS = -0.22 - 0.44 ATMS_i + 0.24 ATMNSD_i + 0.11 ATMPEU_i + 0.13 ATMSC_i + 0.17 ATMAF_i$

Results of the ANOVA test for differences in respondents' perception by educational qualification yielded a calculated F value of 2.146 with an asymptotic significant probability of 0.118, thus indicating that the test was not significant at the five per cent (5%) level. Thus, respondents'

perception was not related to educational qualification. Generally, respondents' perception was not related to any of the demographic variables.

**DISCUSSION OF FINDINGS**

The study found that the degree of customer satisfaction with the use of ATM was high because majority of the customers indicated very high satisfaction with its use. The results of the study show that customers' satisfaction is significantly influenced by ATM security, ATM, service delivery, ATM perceived ease of use, ATM service charge and ATM availability of funds. This is evident from the increased adoption of ATM in the Nigerian banking sector which reduces the level of manual procedures. Most Nigerian deposit money banks rely on Automated Teller Machines amongst other e-payments methods to gain total customers satisfaction and organizational competitiveness. This result is in line with the works of Komal (2009) study on the impact of ATM on customer satisfaction in Nigerian banks. It discovered that ATM has tremendously improved the services of banks to their customers in Nigeria.

The negative coefficient of ATM security is an indication that respondents do not see ATM transactions as secure. In fact the results indicate that respondents see ATM transactions as insecure. This is consistent with Jegede (2014) and Chinedu and Onuoha (2012) who states that back should strive to increase their security layers to subvert the tricks of web scammers and the likes, but inconsistent with Oladele (2013) and Okeke, Ezeh and Ugochukwu (2015) who both agree that security is not the reason for customers dissatisfaction of ATM services. The results are also consistent with Farouk, Maude, Okpanachi, Samuel and Moses (2015) who focused their study on relationship between investment and customer satisfaction of ATM, Mohammed and Dada (2014), Onyedimekwu and Oruan (2013) and Idris, (2014) whose general position is that ATM services enhance customers' satisfaction. Some of the specific findings are also consistent with previous empirical findings such as perceived ease of use, transaction cost (Adeniran, 2014 and Okeke, Ezeh & Ugochukwu, 2015.) perceived ease of use (Adeniran, 2014 and Mwatsika, 2016), the point of departure of this study from previous studies is the authentication of constructs through the extraction of principal components of the originally included constructs. The use of factor analysis to extract the principal constructs perceived to be instrumental in the measurement of ATM service delivery is a unique characteristic of this study.

In addition, this study found that the greatest challenge facing the usage of Automated Teller Machines is frequent network failure followed by system/machine inability to dispense cash to customers as at when they need them. This is in agreement with the study done by Adeleye (2008) who believes that all necessary input to the bank management to increase customer satisfaction

should be done through improving ATM network service delivery. Also, the study discovered that machine failure which could be in terms of account debit without dispensing cash or withholding of ATM card, Long queue, possibility of fraud and extra cost to access internet connection for online ATM transactions also constitute serious problem as perceived by more than 80% of the respondents. This is consistent with the findings of Siyanbola (2013) which states that ATM services are vulnerable to risk or fraud but however inconsistent with the findings of Zikiri (2011) who posits that fraudulent activities associated with ATM are minor and do not form basis of satisfaction for its users. Finally, this study also found that the level of customer satisfaction with ATM usage is higher than the level of dissatisfaction experienced by customers in the use of Automated teller Machines. This is in agreement with previous studies done by Jegede (2014) and Chinedu and Onuoha (2012).

**CONCLUSION**

Business operates in a dynamic environment and so are some of the context specific rules that guide the behaviour of employees in the local and international settings. To this end, this study has made useful contribution to knowledge by updating knowledge in the area of automated teller machine usage and customer satisfaction. The findings of the study, being recent, represent customers' current perception about the predictors (ATM security, ATM network service, ATM service charges, ATM perceived ease of use, and ATM availability of funds). Secondly, despite the availability of reasonable empirical evidence on the research problem, this study's adoption of principal component analysis in extracting the constructs that eventually served as the explanatory variables to customer satisfaction is novel, and is thus a major contribution to knowledge in marketing and management research.

Moreover, with the findings and contributions of the study to knowledge, there are some methodological imperfections that should guide future studies in obtaining a near perfect inference from their studies. Firstly, despite stratifying the population of the respondents into old generation and new generation banks, it is uncertain whether the random sampling conducted on the customers was completely random, owing to the fact that all the customers were not present at the bank premises on the days of the fieldwork. The fact that the sampling was performed on only the customers who came to the banks for transactions on the said day appear to introduce some bias into the study, especially when it is known that some customers visit the banks for ATM transactions very early in the morning or at dusk. Owing to the exclusion of these categories of people, it cannot be confidently said that complete randomisation, which is required for a sample to be representative of the population, was achieved. Future studies should try to tackle this limitation

headlong; the use of online data collection technique may be employed to support the face-to-face method in order to sufficiently minimize this shortcoming.

Secondly, the study made use of questionnaires to elicit responses from the respondents. As self-reporting instruments, the tendency that some of the respondents may have volunteered not-too-accurate responses to some of the questions cannot be ruled out. To this end, future studies should attempt to tackle this shortcoming through the adoption of data triangulation to act as a check on the outcome of the data elicited from the respondents through the face-to-face fieldwork.

**RECOMMENDATIONS**

The following recommendations are suggested:

**i)**      Strategic managers in the banks and policy makers in government should formulate policies to check the activities of ATM fraudsters and scammers with a view to enhancing customers' confidence in the system and thus encourage them to embrace ATMs. This will have the overall effect of facilitating banking transaction and ultimately, business transaction. No doubt, efforts are already being made in this direction, such as the limit on the amount of cash that can be withdrawn on any given day; but much more can still be done to boost customers' confidence;

**ii)**     A more effective and efficient network service should be delivered to ATM customers by deposit money banks as they enhance customers' convenience and great pleasure to banking services.

**iii)**    Strategic managers in the banking sector should make it a point of duty to continually enlighten their customers on how to use the ATM without encountering difficulty which could discourage customers and lead to dissatisfaction.

**iv)**     Care should be exercised in the allocation of charges on the ATM services by deposit money banks and they should all try to stick to the government stipulated charges on ATM services as failure to do so can discourage customers and lead to dissatisfaction.

**v)**      Lastly, since ATM usage enhances customer satisfaction, strategic managers should put appropriate strategies in place to ensure that the machines are in perfect condition to avoid the problem of machine failure and inability to dispense cash as at when the customers are in need of it.

As a result of the dynamic nature of the business environment, banks employees especially the ones in the ICT department should be exposed to constant and up to date training to help them cope with current and future changes and challenges in the sector so as to build their capacity to promptly resolve and correct any issue that can lead to customer dissatisfaction in ATM services.

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**APPENDICES**

**QUESTIONNAIRE**

**DEPARTMENT OF BUSINESS ADMINISTRATION, FACULTY OF MANAGEMENT SCIENCES**

**UNIVERSITY OF BENIN, BENIN CITY**

**PART 1**

**Section A: Personal Data**

Please thick [  ] or indicate as applicable.

**1.** Gender:   Male [   ] Female  [   ]

**2.** Age: Less than 20 years [   ] 20-40 [   ] 41-60 [   ] 61 years and above [   ]

**3.** Highest educational qualification: No Formal Education [   ] First School Leaving Certificate [   ]

SSCE [   ] ND/NCE [   ] HND/OND [   ] B.Sc. [   ] Post- Graduate [   ]

**PART 11**

**Please indicate the extent to which you agree with the following statements below. Tick using the following scale:** *Strongly Agree (SA), Agree (A), Not Sure (NS), Disagree (D), and strongly Disagree (SD).*

| S/N | Statement | SA 5 | A 4 | NS 3 | D 2 | SD 1 |
|---|---|---|---|---|---|---|
| **Section B – *Security*** | | | | | | |
| 4. | ATM exposes my financial information to unauthorized persons | | | | | |
| 5. | Using ATM makes it safer for me to withdraw cash | | | | | |
| 6. | Using ATM to withdraw cash makes me physically secure | | | | | |
| 7. | Financial transactions performed through ATM are safe. | | | | | |
| 8. | ATM transactions disclose my financial status to unauthorized persons | | | | | |
| 9. | Performing transactions with ATM on the internet is safe. | | | | | |
| **Section C - *Network Service Delivery*** | | | | | | |
| 10. | ATM network service makes it easy for me to perform bank transactions whenever I like. | | | | | |
| 11. | I can easily access most of the ATM online services without network failure. | | | | | |
| 12. | ATM network services are very good and reliable. | | | | | |
| 13. | When I urgently need access to my funds with ATM, the services are always available | | | | | |
| 14. | Recharging my cell phone with my ATM is usually easy because of no network failure. | | | | | |
| 15. | The speed of operating ATM is usually fast where there is good network. | | | | | |
| **Section D - *Ease of Use*** | | | | | | |

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| 16. | Using ATM requires a lot of mental effort. | | | | | |
| 17. | For me, ATM is easy to use. | | | | | |
| 18. | I find it difficult to understand the inscriptions on the ATM. | | | | | |
| 19. | I consider ATM to be user friendly and flexible. | | | | | |
| 20. | To me, using ATM has reduced the psychological stress I experienced when I go to banking halls. | | | | | |
| **Section E - *Service Charges*** | | | | | | |
| 21. | Fee charged for funds transfer is very satisfactory. | | | | | |
| 22. | Financially, using ATM is cost effective for me | | | | | |
| 23. | ATM maintenance fee is reasonable. | | | | | |
| 24. | I do not see the need for charges for ATM maintenance. | | | | | |
| 25. | I am comfortable with the fee charged after third interbank withdrawal on ATM. | | | | | |
| 26. | Most banks do not keep to government stipulated charges on ATM transactions. | | | | | |
| **Section F – *Availability of funds*** | | | | | | |
| 27. | The ATM is always able to dispense cash as at when it is needed. | | | | | |
| 28. | There is never restriction on the amount of money an ATM can dispense at every transaction. | | | | | |
| 29. | All banks ATM dispense cash any time of the day to customers. | | | | | |
| **Section G - *Customer satisfaction*** | | | | | | |
| 30. | The quality of service I receive through the use of ATM is satisfactory. | | | | | |
| 31. | Having considered the overall experience encountered in the use of ATM, I am satisfied with the service I derive from its use. | | | | | |
| 32. | I am very willing to continue the use of ATM. | | | | | |
| 33. | I am satisfied with the opportunity ATM has given me to make payments without cash | | | | | |
| 34. | I strongly recommend the use of ATM to others | | | | | |

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**Inferencial Statistics**

**Table 1KMO and Bartlett's Test (Security)**

| Kaiser-Meyer-Olkin Measure of Sampling adequacy | | 0.432 |
|---|---|---|
| Bartlett's Test of Sphericity: | Approximate Chi Square | 1391.34 |
| | d.f. | 15 |
| | sig. | 0.00 |

**Table 2 Communalities (Security)**

| | Initial | Extraction |
|---|---|---|
| Q4 | 1 | 0.909 |
| Q5 | 1 | 0.898 |
| Q6 | 1 | 0.675 |
| Q7 | 1 | 0.552 |
| Q8 | 1 | 0.882 |
| Q9 | 1 | 0.691 |

**Table 3Total Variance Explained (Security)**

| Component | Initial Eingen values | | | Extraction sums of squared loadings | | | Rotation sums of squared loadings | | |
|---|---|---|---|---|---|---|---|---|---|
| | Total | % of variance | Cumulative % | Total | % of variance | Cumulative % | Total | % of Variance | Cumulative % |
| 4 | 2.439 | 40.647 | 40.647 | 2.439 | 40.647 | 40.647 | 2.341 | 39.018 | 39.018 |
| 5 | 2.168 | 36.129 | 76.777 | 2.168 | 36.129 | 36.129 | 2.266 | 37.659 | 76.777 |
| 6 | 0.807 | 13.457 | 90.234 | | | | | | |
| 7 | 0.429 | 7.153 | 97.387 | | | | | | |
| 8 | 0.094 | 1.574 | 98.961 | | | | | | |
| 9 | 0.062 | 1.039 | 100.000 | | | | | | |

Extraction Method: Principal Component Analysis

**Table 4 Component Matrix (Security)**

| Component | |
|---|---|
| 1 | 2 |

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| | | |
|---|---|---|
| Q4 | -0.826 | 0.475 |
| Q5 | 0.557 | 0.767 |
| Q6 | 0.470 | 0.674 |
| Q7 | 0.585 | -0.457 |
| Q8 | -0.737 | 0.582 |
| Q9 | 0.582 | 0.584 |

**Table 5 Rotated Component Matrix (Security)**

| | Component | |
|---|---|---|
| | 1 | 2 |
| Q4 | 0.946 | -0.116 |
| Q5 | 0.015 | 0.948 |
| Q6 | 0.029 | 0.821 |
| Q7 | -0.743 | -0.014 |
| Q8 | 0.939 | 0.022 |
| Q9 | -0.108 | 0.825 |

Extraction Method: Principal Component Analysis

3 components extracted

Rotation Method: Varimax with Kaiser Normalization

Rotation converged in 5 iterations

**Table 6 Component transformation Matrix (Security)**

| Component | 1 | 2 |
|---|---|---|
| 1 | 0.800 | -0.601 |
| 2 | 0.601 | 0.800 |
| 3 | -0.173 | 0.241 |

Extraction Method: Principal Component Analysis

3 components extracted

Rotation Method: Varimax with Kaiser Normalization

Rotation converged in 3 iterations

**Table 7 Communalities (Network Service Delivery)**

| | initial | Extraction |
|---|---|---|
| Q10 | 1 | 0.742 |
| Q11 | 1 | 0.846 |
| Q12 | 1 | 0.797 |
| Q13 | 1 | 0.672 |
| Q14 | 1 | 0.440 |
| Q15 | 1 | 0.828 |

**Table 8Total Variance Explained (Network Service Delivery)**

| Component | Initial Eingen values | | | Extraction sums of squared loadings | | | Rotation sums of squared loadings | | |
|---|---|---|---|---|---|---|---|---|---|
| | Total | % of variance | Cumulative % | Total | % of variance | Cumulative % | Total | % of Variance | Cumulative % |

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| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 2.808 | 46.805 | 46.805 | 2.808 | 46.805 | 46.805 | 2.751 | 45.853 | 45.853 |
| 2 | 1.506 | 25.104 | 71.909 | 1.506 | 25.104 | 71.909 | 1.586 | 28.056 | 71.909 |
| 3 | 0.705 | 11.752 | 83.661 | | | | | | |
| 4 | 0.528 | 8.804 | 92.462 | | | | | | |
| 5 | 0.345 | 5.754 | 98.210 | | | | | | |
| 6 | 0.107 | 1.790 | 100.000 | | | | | | |

Extraction Method: Principal Component Analysis

**Table 9 Component Matrix (Network Service Delivery)**

| | Component | |
|---|---|---|
| | 1 | 2 |
| Q10 | 0.408 | 0.759 |
| Q11 | 0.912 | -0.119 |
| Q12 | 0.886 | 0.049 |
| Q13 | 0.807 | -0.147 |
| Q14 | 0.811 | 0.257 |
| Q15 | 0.034 | 0.909 |

**Table 10 Rotated Component Matrix (Network Service Delivery)**

| Component | |
|---|---|
| 1 | 2 |

| | | |
|---|---|---|
| Q10 | 0.240 | 0.827 |
| Q11 | 0.917 | 0.074 |
| Q12 | 0.856 | 0.234 |
| Q13 | 0.820 | 0.025 |
| Q14 | 0.662 | -0.123 |
| Q15 | -0.157 | 0.896 |

Extraction Method: Principal Component Analysis

3 components extracted

Rotation Method: Varimax with Kaiser Normalization

Rotation converged in 5 iterations

**Table 11 Component transformation Matrix (Network Service Delivery)**

| Component | 1 | 2 |
|---|---|---|
| 1 | 0.978 | 0.209 |
| 2 | 0.209 | 0.978 |

Extraction Method: Principal Component Analysis

3 components extracted

Rotation Method: Varimax with Kaiser Normalization

Rotation converged in 3 iterations

**Table 12 KMO and Bartlett's Test (*Ease of Use*)**

| | |
|---|---|
| Kaiser-Meyer-Olkin Measure of Sampling adequacy | 0.498 |
| Bartlett's Test of Sphericity:   Approximate Chi Square | 329.31 |
| d.f. | 10 |
| sig. | 0.00 |

**Table 13 Communalities (*Ease of Use*)**

| | initial | Extraction |
|---|---|---|
| Q16 | 1 | 0.56 |
| Q17 | 1 | 0.842 |
| Q18 | 1 | 0.817 |
| Q19 | 1 | 0.773 |
| Q20 | 1 | 0.653 |

**Table 14 Total Variance Explained (*Ease of Use*)**

| Component | Initial Eingen values | | | Extraction sums of squared loadings | | | Rotation sums of squared loadings | | |
|---|---|---|---|---|---|---|---|---|---|
| | Total | % of variance | Cumulative % | Total | % of variance | Cumulative % | Total | % of Variance | Cumulative % |

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| 1 | 2.024 | 40.482 | 40.482 | 2.024 | 40.482 | 40.482 | 1.865 | 37.299 | 37.299 |
| 2 | 1.199 | 23.974 | 54.456 | 1.199 | 23.974 | 64.456 | 1.358 | 27.157 | 64.456 |
| 3 | 0.862 | 17.239 | 81.695 | | | | | | |
| 4 | 0.672 | 13.437 | 95.132 | | | | | | |
| 5 | 0.243 | 4.868 | 100.00 | | | | | | |

Extraction Method: Principal Component Analysis

**Table 15 Component Matrix (*Ease of Use*)**

| | Component | |
| | 1 | 2 |
|-----|--------|--------|
| Q16 | -0.678 | -0.316 |
| Q17 | 0.570 | 0.318 |
| Q18 | -0.240 | 0.871 |
| Q19 | 0.755 | -0.451 |
| Q20 | 0.782 | 0.203 |

**Table 16 Rotated Component Matrix (*Ease of Use*)**

| | Component | |
| | 1 | 2 |
|--|--|--|

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| | | |
|-----|--------|--------|
| Q16 | -0.748 | -0.014 |
| Q17 | 0.647 | 0.027 |
| Q18 | 0.167 | 0.888 |
| Q19 | 0.480 | -0.736 |
| Q20 | 0.792 | -0.161 |

Extraction Method: Principal Component Analysis

3 components extracted

Rotation Method: Varimax with Kaiser Normalization

Rotation converged in 5 iterations

**Table 17 Component transformation Matrix (*Ease of Use*)**

| Component | 1 | 2 |
|-----------|-------|--------|
| 1 | 0.898 | -0.439 |
| 2 | 0.439 | 0.898 |

Extraction Method: Principal Component Analysis

3 components extracted

Rotation Method: Varimax with Kaiser Normalization

Rotation converged in 3 iterations

**Table 18 KMO and Bartlett's Test (*Ease of Use*)**

| Kaiser-Meyer-Olkin Measure of Sampling adequacy | | 0.556 |
|---|---|---|
| Bartlett's Test of Sphericity: | Approximate Chi Square | 576.119 |
| | d.f. | 15 |
| | sig. | 0.000 |

**Table 19 Communalities (*Service Charges*)**

| | initial | Extraction |
|-----|---------|------------|
| Q21 | 1 | 0.881 |
| Q22 | 1 | 0.717 |
| Q23 | 1 | 0.861 |
| Q24 | 1 | 0.790 |
| Q25 | 1 | 0.797 |
| Q26 | 1 | 0.820 |

**Table 20 Total Variance Explained (*Service Charges*)**

| Component | Initial Eingenvalues | | | Extraction sums of squared loadings | | | Rotation sums of squared loadings | | |
|-----------|-------|-----------------|--------------|-------|-----------------|--------------|-------|-----------------|--------------|
| | Total | % of variance | Cumulative % | Total | % of variance | Cumulative % | Total | % of Variance | Cumulative % |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 2.476 | 41.274 | 41.274 | 2.476 | 41.274 | 41.274 | 2.029 | 33.823 | 33.823 |
| 2 | 1.378 | 22.961 | 64.235 | 1.378 | 22.961 | 64.235 | 1.473 | 24.543 | 24.543 |
| 3 | 1.012 | 16.864 | 81.099 | 1.012 | 16.864 | 81.099 | 1.364 | 22.733 | 81.099 |
| 4 | 0.537 | 8.952 | 90.050 | | | | | | |
| 5 | 0.417 | 6.948 | 96.999 | | | | | | |
| 6 | 0.180 | 3.001 | 100.000 | | | | | | |

Extraction Method: Principal Component Analysis

**Table 21 Component Matrix (*Service Charges*)**

| | Component | | |
|---|---|---|---|
| | 1 | 2 | 3 |
| Q21 | 0.907 | 0.236 | 0.051 |
| Q22 | 0.822 | 0.203 | 0.005 |
| Q23 | 0.565 | 0.016 | 0.736 |
| Q24 | 0.397 | 0.736 | -0.301 |
| Q25 | -0.274 | 0.836 | -0.152 |
| Q26 | -0.652 | -0.201 | 0.595 |

**Table 22 Rotated Component Matrix (*Service Charges*)**

| | Component | | |
|---|---|---|---|
| | 1 | 2 | 3 |

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| | | | |
|---|---|---|---|
| Q21 | 0.792 | 0.044 | 0.501 |
| Q22 | 0.734 | 0.054 | 0.418 |
| Q23 | 0.114 | 0.075 | 0.918 |
| Q24 | 0.238 | 0.850 | -0.108 |
| Q25 | 0.112 | -0.858 | -0.222 |
| Q26 | -0.883 | -0.070 | 0.187 |

Extraction Method: Principal Component Analysis

3 components extracted

Rotation Method: Varimax with Kaiser Normalization

Rotation converged in 5 iterations

**Table 23 Component transformation Matrix (*Service Charges*)**

| Component | 1 | 2 | 3 |
|---|---|---|---|
| 1 | 0.819 | 0.301 | 0.490 |
| 2 | 0.315 | -0.948 | 0.055 |
| 3 | -0.480 | -0.109 | 0.870 |

Extraction Method: Principal Component Analysis

3 components extracted

Rotation Method: Varimax with Kaiser Normalization

Rotation converged in 3 iterations

**Table 24 KMO and Bartlett's Test (*Ease of Use*)**

| | |
|---|---|
| Kaiser-Meyer-Olkin Measure of Sampling adequacy | 0.435 |
| Bartlett's Test of Sphericity:   Approximate Chi Square | 31.847 |
| d.f. | 3 |
| sig. | 0.000 |

**Table 25 Communalities (*Availability of funds*)**

| | initial | Extraction |
|---|---|---|
| Q27 | 1 | 0.881 |
| Q28 | 1 | 0.717 |
| Q29 | 1 | 0.861 |

**Table 26 Total Variance Explained (*Availability of funds*)**

| Component | Initial Eingen values | | | Extraction sums of squared loadings | | | Rotation sums of squared loadings | | |
|---|---|---|---|---|---|---|---|---|---|
| | Total | % of variance | Cumulative % | Total | % of variance | Cumulative % | Total | % of Variance | Cumulative % |

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| 1 | 1.261 | 42.030 | 42.030 | 1.261 | 42.030 | 41.030 | 1.188 | 39.612 | 38.612 |
| 2 | 1.072 | 35.727 | 77.756 | 1.072 | 35.727 | 77.756 | 1.144 | 38.144 | 77.756 |
| 3 | 0.667 | 22.244 | 100.000 | | | | | | |

Extraction Method: Principal Component Analysis

**Table 27 Component Matrix (*Availability of funds*)**

|  | Component | |
| --- | --- | --- |
|  | 1 | 2 |
| Q27 | -0.477 | 0.773 |
| Q28 | 0.562 | 0.688 |
| Q29 | 0.840 | -0.029 |

**Table 28 Rotated Component Matrix (*Availability of funds*)**

|  | Component | |
| --- | --- | --- |
|  | 1 | 2 |

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| | | |
|---|---|---|
| Q27 | 0.104 | 0.902 |
| Q28 | 0.875 | 0.186 |
| Q29 | 0.642 | -0.543 |

Extraction Method: Principal Component Analysis

3 components extracted

Rotation Method: Varimax with Kaiser Normalization

Rotation converged in 5 iterations

**Table 29 Component transformation Matrix (*Availability of funds*)**

| Component | 1 | 2 |
|---|---|---|
| 1 | 0.785 | -0.619 |
| 2 | 0.619 | 0.785 |

Extraction Method: Principal Component Analysis

3 components extracted

Rotation Method: Varimax with Kaiser Normalization

Rotation converged in 3 iterations

**Table 30 Communalities (*Customer satisfaction*)**

| | initial | Extraction |
|---|---|---|
| Q30 | 1 | 0.288 |
| Q31 | 1 | 0.557 |
| Q32 | 1 | 0.903 |
| Q33 | 1 | 0.668 |
| Q34 | 1 | 0.903 |

**Table 31Total Variance Explained (*Customer satisfaction*)**

| Component | Initial Eingen values | | | Extraction sums of squared loadings | | |
|---|---|---|---|---|---|---|
| | Total | % of variance | Cumulative % | Total | % of variance | Cumulative % |
| 1 | 3.320 | 66.395 | 66.395 | 3.320 | 66.395 | 66.395 |
| 2 | 0.937 | 18.738 | 85.133 | | | |
| 3 | 0.484 | 9.279 | 94.412 | | | |
| 4 | 0.237 | 5.588 | 100.00 | | | |
| 5 | 1.4E-017 | 2.8E16 | 100.00 | | | |

Extraction Method: Principal Component Analysis

**Table 32 Component Matrix (*Customer satisfaction*)**

| | Component |
|---|---|
| | 1 |

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| | |
|---|---|
| Q30 | 0.536 |
| Q31 | 0.746 |
| Q32 | 0.951 |
| Q33 | 0.817 |
| Q34 | 0.951 |

Rotated Component Matrix (*Customer satisfaction*)

Only one component was extracted, therefore, the solution cannot be rotated

**Table 33        ANOVA table**

| Model | Sum of Squares | df. | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Regression | 84.908 | 5 | 16.982 | 22.00 | 0.00 |
| Residual | 223.851 | 290 | 0.772 | | |
| Total | 308.760 | 295 | | | |

c.   Dependent variable – Customer Satisfaction

d.   Predictors (constant), ATM security, ATM, service delivery, ATM perceived ease of use, ATM service charge and ATM availability of funds.

**Table 34 Respondents' Perception versus Educational Qualification**

| | Sum of Squares | Df | Mean Square | F | Sig |
|---|---|---|---|---|---|
| Between Group Means | 9.005 | 2 | 4.503 | 2.146 | 0.118 |
| Within Group Means | 1548.091 | 737 | 2.096 | | |
| Total | 1555.096 | 739 | | | |