

# Empirical determinants of consumers' uptake of electronic banking in selected states of Nigeria

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## Abstract

*Financial institutions have been adopting internet banking since the mid-90s, predominantly due to lower operating costs associated with electronic banking and pressure from non-banks interested in entering the electronic banking market. In addition, customers utilizing electronic banking facilities are increasing. This is due to the cost savings associated with transactions over the electronic platform. Internet banking enables speedy transactions, access, time and money savings through providing free paper, and complete and up-to-date transactions. The competitive landscape of financial institutions is shifting as internet banking is no longer a competitive advantage but a competitive necessity for banks all over the world. While previous research works dwelt on wide range of issues relating to electronic banking issues, unfortunately, there is little empirical research on the effect of electronic channels on consumer's buying behaviour and banking channel preferences in Nigeria as a developing economy. This study examined consumers' decision-making between electronic banking and non-electronic banking in Nigeria. The research uses the consumer decision making process to identify factors that consumers use when deciding between electronic banking and non-electronic banking services. These factors include but not limited to service quality dimensions, service product characteristics, perceived risk factors, user skill factors, and price factors. The demographic variables include age, gender, marital status, ethnic background, educational qualification, employment, and income. Findings revealed a correlation between most of the above listed factors as some of the reasons for the poor adoption of electronic banking services in Nigeria as a developing economy.*

**Keywords:** e-Banking, ICT, Service Quality, Risk factors, Trust

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## 1.0 Introduction and background of the study

The last three decades have witnessed an explosion of popular interest in new financial communication technologies. And the dawn of the new millennium brought with it a plethora of new technological innovations and applications which have impacted strongly on the academic fields and consumers' adoption of these new technologies have continued to generate a great deal of interest in the academic arena and the business world is not an exception. The financial industry, being one of the great recipients of this great innovation, is constantly responding to changes in customer preferences and needs. However, the increasing competitions from non-banks, changes in demographics and social trends, information technological advances, channel strategies, and government deregulations of the financial service sector

all have a great impact on the adoption and usage of electronic banking services.

Yap et al., [87] argued that the success or failure of many retail banks is dependent upon the capabilities of management to anticipate and react to such changes in the financial marketplace. Agwu [3] stressed that in the search for sustainable competitive advantages in the competitive and technological financial service industry, banks have recognized the importance to differentiate themselves from other financial institutions through distribution channels; and this has resulted Rose, et al., [73] in banks developing, and utilizing new alternative distribution channels to reach their customers. Furthermore, information technological developments in the banking industry have speed up communication and transactions for customers [62]. Agwu [3] pointed out that the information technology revolution in the

financial industry distribution channels began in the Automatic Teller Machines (ATM) and the ATM networks. This was followed by telephone banking, cable television banking in the 1980s, and the progress of Personal Computer (PC) banking in the late 1980s and in the early 1990s; however, these technological innovations only gained prominence in Nigeria between 2002 and 2007; and have since come to stay. Information technology enabled electronic channels to perform many banking functions that would traditionally be carried out over the counter. According to Laukkanen, [48], the rise of electronic payments media such as debit and credit cards has caused the value of checks paid in the all over the world to fall. Furthermore, paper checks are gradually being supplement with electronic images, permitting greater storage capacity, reducing costs and improving customer services [1].

The evolution of electronic banking, such as internet banking from e-commerce, has altered the nature of personal-customer banking relationships and has many advantages over traditional banking delivery channels. This includes an increased customer base, cost savings, mass customization and product innovation, marketing and communications, development of non-core businesses and the offering of services regardless of geographic area and time [3]. Internet banking is expected to become a widely adopted method for disseminating information and exchanges in the near future. Similar to its international counterparts, the adoption of electronic banking such as internet banking is growing in Nigeria. During the last quarter of 2007, there were approximately 8,502 regular internet users utilizing internet banking facilities to conduct their banking transactions (CBN 2009). This reflects a 9% increase from 7,800 users during the same quarter of 2006. It is predicted that the usage of internet banking in Nigeria will continue to grow in the near future, as customer support for internet banking is mounting. Internet users adversity to internet banking due mainly to the past bank failures has fallen from 87 percent in 2006 to 63 percent at the end of 2008, and of the various internet users whom have not yet adopted internet banking services, 4percent indicate they are willing to adopt this new banking channel [3]. In addition, the decreasing charges of internet service providers in Nigerian financial institutions are further enhancing the utilization of internet banking services especially within the towns and cities. The literature for this study

early 1970s, with the introduction of the credit cards, the featured numerous published research papers, articles and books addressing a wide range of issues relating to electronic banking [44] [48] [59] [62] [73]. However, there is little empirical research on the effect of electronic channels on consumer's buying behaviour [3] or banking channel preferences in Nigeria. Therefore, the purpose of this study is to examine consumers' decision-making between electronic banking and non-electronic banking in Nigeria as a developing economy. The research uses the consumer decision making process to identify factors that consumers use when deciding between electronic banking and non-electronic banking. These factors include service quality factors, individual factors, price factors, risk factors, service product factors, and user input factors.

## **2.0 Review of related literature**

### **2.1 Economic profile**

The Nigerian economy depends heavily on oil, though other mineral and agricultural deposits abound (CBN 2009). In the same vein, IMF report [40] placed Nigeria among the richest country in the world, the country is also ranked among the major exporters of petroleum products. Despite these opulence and wealth, majority of the populations live below the poverty line (UNDP 2010), this is because 28% new born babies die before the age of three, basic amenities such as schools, roads, electricity, pipe borne water, hospitals, etc, are in very short supply [21]. The root cause of these are often blamed on the more than 30 years of military rule, unfortunately the major cause of these problems, according to Akpan [5], are lack of economic blueprints by the military men and women. The result of which has led to a poor economy, lack of jobs, high crime rates, kidnappings and demand for ransoms by youths, cybercrimes, etc. As a result of these, the Nigerian global image was severely dented. Furthermore, Agwu [3] states that this was as a result of the new phase of crime nicknamed advance-fee-fraud captioned in section 41.9 in the criminal code, and an example was the celebrated and well publicized case, captioned: "*Nwude, wealthiest '419' Kingpin in the net*" in various tabloids (p. 23). Based on these and more, the international financial institutions views payments such as cheques, electronic payments, and other financial instruments, from Nigeria with caution and some are rejected outright. Soludo [77] noted that past and present governments have constituted different bodies to fight

these corruption from all fronts, the recent being the Economic and Financial Crimes Commission (EFCC). Though not much have been achieved by this and other bodies, however, government oppositions often point to it as a "political tool". The recent consolidation of the banks may be the right step in the right direction with a view to restoring confidence and trust in the Nigerian financial institutions [78] [19]/

## **2.2 Technological profile**

The deregulation of the telecommunication sector and the emergence of mobile phone providers have been lauded home and abroad as one of the greatest achievements of the immediate past administration of President Olusegun Obasanjo [3]. However, it was also noted by other researchers that the solid foundation required for the introduction of such an innovation was never in place especially within the school curriculums, as ICT was not widespread in schools and colleges and even the universities. Others include electricity, pliable roads, and jobs for the youths, etc.,[5]. The usage of mobile phones as opposed to landlines which most Nigerian are accustomed to, became a tall order, for those who has the means and wishes to purchase handsets. Agwu, [3] stressed that the basic infrastructures were also lacking, however, the supply of mobile phones was more than demand despite lack of knowledge on its usage, and the intention to possess same were mainly seen from social influences, hence the huge demand. Hand in hand with this is the epileptic electricity supply with which to charge these mobile handsets. The epileptic electricity supply initially dissuaded many from purchasing mobile phones. Chukwuemeka [21] stressed that Nigeria generates more than 3500 megawatts of electricity which is about 18% of 35000 megawatts needed for constant electricity supply for the entire nation. This low generation may have accounted for the constant power outages and the pressing need to possess a generating set by businesses and individuals. [5] stressed that more than 92% of public and private businesses in Nigeria have mostly resorted to the use of generators, a commodity that is rare in the developed countries. It has however become a norm for any business venture to own a generating set in order to be in business. It is a common site to find public and private businesses with different sizes and shapes of generating set; these include the Central Bank of Nigeria, government agencies, banks, and various business organizations. It is estimated that Nigeria as a

nation spends about N1.95 trillion on generators per annum. The current unsavory news emanating from government quarters was the idea of Ghana, a neighboring country, selling electricity to Nigeria from 2015 as a result of a drop in the megawatts as stated above. This is a draw-back for a country that should be self-sufficient – however, this was further blamed on poor maintenance of the infrastructures [21]. Cost and maintenance of computers and its accessories, according to Agwu, [1] tops the list of reasons for lack of interest on new innovations such as the purchase of computers (desk and laptops). Furthermore, as a result of the level of income as well as levels of education in many parts of Nigeria, many see the investment on computers and its accessories as white elephant projects as a result of their lack of ability to maintain same with the epileptic nature of electricity supply and other factors.

## **2.3 Information technology and the Global Market**

The globe has more or less become a village; this is as a result of the internet and in fact the World Wide Web (www) whose impact has been felt by all sectors as well as all aspects of human endeavours. The ripple effect of globalization an offshoot of the internet and World Wide Web has breathed a new life into the way individuals and businesses communicate [43]; it has also amalgamated various cultures as well as brought high level but stiff economic competition among various players in the global business arena. The banks and other financial institutions has leveraged the explosive powers of this super-high way and most banks now use it as the main vehicle of marketing, selling as well purchasing [44]. The era of brick-and-mortar and high costs attached to its establishment are now gradually giving way to simple and lower cost form of business transactions simply over the internet and the world-wide-web mostly in the developed countries, and now creeping into the developing countries/

## **2.4 Perceived Risk Factors**

Consumers perceive greater risks when buying services than tangible goods [23] [89] perceived services as riskier than goods because services are intangible, non-standardized, and often sold without guarantees or warranties. Consumers can rarely return a service to the service provider since they have already consumed it, and some services are so technical or specialized that consumers possess neither the knowledge nor the experience to evaluate whether they are satisfied, even

after they have consumed the service [89]. Perceived risk is considered an important risk attribute that impacts on the consumer decision-making process when buying a product or consuming some services [59] [28]. Electronic banking is a technology-enabled channel and consumers' perceive the use of electronic banking as a risky decision because technology-enabled services exhibit pervasive technological, unfamiliar and ambiguous stimuli [28]. Therefore, when consumers decide to use electronic banking, they are exposed to uncertainties such as the availability, the compatibility, and the performance of the complementary electronic banking channels [24] [39] [54] empirically support that the use of electronic banking involves risk. Ho and Ng [[39] suggested that consumers perceived an existence of risk was present with the use of electronic banking. Similarly, Lockett and Littler [54] identified risk as an important characteristic of electronic banking. These include financial risk, performance risk, physical risk, social risk and psychological risk. Financial risk represents the financial loss in using electronic banking, as consumers may perceive that reversing a transaction, stopping a payment after discovering a mistake, or a refund may not be possible. Performance risk in electronic banking is less satisfying than non-electronic banking, as consumer may perceive that electronic banking cannot be used to complete a transaction when needed due to the denial of access to their account. Physical risk in electronic banking refers to potential injury when personal information is accessed by a third party. Social risk refers to the older generation who may disapprove of the use of electronic banking due to their perception that non-electronic banking is personal and friendly. Psychological risk represents consumer perceptions that the use of electronic banking would lower their self-images, or have a negative effect on their perceived image from other consumers. Time risk in electronic banking implies that it takes more time to complete a banking transaction than a non-electronic banking transaction. Thus the following relationship is hypothesized: Higher perceived risk is negatively related to consumers' positive choice of electronic banking.

### **2.5 User Input Factors**

Previous studies have identified that user input factors are a function of control, enjoyment and intention to use [62]. Control could be described as the amount of effort and involvement required by consumers in electronic banking. Enjoyment is the perceived

playfulness and intrinsic value that consumers experience from the utilization of electronic banking. The intention to use is described as the level of resistance to change, which is associated with consumers' intention to change from non-electronic banking to electronic banking. Mantel [58] concluded that the control attribute was one of the most important aspects that customers were concerned with when they used electronic banking. Similarly, Liao and Cheung [52] identified that user control, such as the amount of control or contribution involved in electronic banking transactions, was a significant determinant for consumers' decision to use electronic banking. Similarly, Bateson [10](1985) identified that consumers chose to use a technology-based channels in the delivery of a service, not because of the monetary incentives, but because they perceived a stronger sense of control as a result of a self-service option [10]. Control in electronic banking relates to the consumers' perceived involvement, or sense of control, if they utilize electronic banking [58]. Gerrard and Cunningham [35] identified that consumers who were more financially innovative had a higher probability of adopting electronic banking than less financially innovative consumers. Similarly, Sathye [75] found that even when consumers were aware of the availability of electronic banking, some consumers might still not utilize this type of banking due to consumers' low intention to use electronic banking. Empirical evidence from Sathye's [75]. Gerrard and Cunningham's [35] studies suggested consumers' intention to use electronic banking was positively influenced the use of electronic banking.

### **2.6 Price Factors and Product Characteristics**

The service product characteristics of electronic banking includes but not limited to consumers' perception of a standard and consistence service, the time saving feature of electronic banking, and the absence of personal interactions, have been empirically found to influence consumers' use of electronic banking [70] [44]. The Wallis Report [86] indicated that for consumers to use technologies, the price to use technologies needed to be reasonable when compared to alternatives. Sathye, [75] stressed that perceived relative economic advantages will motivate consumers to use electronic banking. For example, consumers using electronic banking could lower the fixed and variable costs that are associated with the banking process, due to

reductions in personal error and labour cost savings. Sathye [75] argued that, in the context of internet banking, two kinds of price were accounted for; the normal costs associated with internet activities, and the bank costs and charges. A study conducted by Polatoglu and Ekin's [70] identified that users of electronic banking were significantly satisfied with the cost saving factor through electronic banking. Other researchers such as Karjaluoto, Mattila and Pentto, [43] Gerrard and Cunningham, [35], and others, have also suggested that consumers perceive electronic banking as inexpensive and that it does not offer any extra cost benefits. Despite these conflicting findings, Sathye [75] identified that the costs associated with electronic banking, such as the cost of electronic banking activities and bank charges, had a negative effect on electronic banking adoption. This study further looked at the relationship between price as a factor and its determinant as a factor for consumer uptake of electronic banking.

### **2.7 Individual Resources and Service Quality Factors**

Consumer resources also influence the use of electronic banking. Mols [61], Sathye [75] and Karjaluoto, Mattila, and Pentto's [43] studies showed that some consumers lacked access to a personal computer (PC) and this prohibited the adoption of electronic banking. Studies have also shown that consumer resources including computer proficiency influence the consumers' employment of electronic banking. Sathye [75] demonstrated that consumers described incomprehensibility as a reason for not using electronic banking. Similarly, Karjaluoto, Mattila, and Pentto's [45] empirical results suggested that non-electronic banking users considered electronic banking as difficult to use because they found computers difficult to operate. Agwu (2012) found that consumers who were non-adopters of electronic banking could be differentiated by their lower computation proficiency and computer skills. Jun and Cai [41] in their study, identified bank customers' perceptions of service quality dimensions using quantitative techniques. These were based on three quality perspectives; banking service product quality, customer service quality and online systems quality. Bank service product quality was primarily related to product variety and the diverse features of the service products. Customer service quality was related to the differences between customers' expectations of service provider's performance and their evaluation of the services they received. Online system quality was

associated with the quality that the customer perceived when they were the end-users of an information system. The authors also identified seventeen underlying dimensions of electronic banking service quality including; product variety/diversity features, reliability, responsiveness, competence, courtesy, credibility, access, communication, understanding the customer, collaboration, continuous improvement, contents, accuracy, ease of use, timelines, aesthetics, and security. In the case of the responsiveness dimension, Karjaluoto, Mattila and Pentto [45] demonstrated that electronic banking users believed that electronic banking responded faster to their needs than other traditional modes of banking, for example, the speed of bill payment via the internet. In addition, Polatoglu and Ekin [70] identified instant feedback, quick transactions and easy access, as important attributes in electronic banking. Furthermore, Liao and Cheung [52] and Gerrard and Cunningham [35] found that the transaction speed (the perceived speed of response from electronic banking) and the fast access to electronic banking accounts were important attributes for consumers that used electronic banking. Thus the following relationship is hypothesized: A higher level of performance on the service quality dimensions is positively related to consumers' positive choice of electronic banking. Moreover, Parasuraman, Zeithaml and Berry [65] stressed that SERVQUAL as a measurement instrument five dimensions identified and these have been used extensively in various financial institutions. This singular service quality instrument has become a boardroom instrument in assessing most financial service quality.

### **2.8 The erosion of customers' confidence on the Nigerian banking system**

[ina and Ayo \[\(2010\)\]](#) asserts that after the deregulation of the banking sector in early 1990s, the way was paved for all non-professionals to infiltrate the banking sector, however, the weakness of the regulatory institutions led to the oversight of so many issues. Unfortunately, the CBN and other regulatory bodies, have not, despite its different departments, being able to stem the tide of financial malpractices perpetrated by commercial banks top management staffs [([Ezeoha 2006, 2006a, Olalekan 2011](#)); these could be blamed on the high level of political influences by government officials and some super-rich individuals and organizations that are well connected. The banking culture in Nigeria has become

one which is riddled with distrust and fear (Olalekan 2011). The lack of trust on the Nigerian banking system by more than 60% of the populace is a resultant effect of the constant distress, collapse, merger and acquisition of so many banks in which many have lost all their life savings (Chiemeké, Okpara [63]. And the daily news on the electronic and print media with respect to frauds within and outside the banks have further added to the reasons for the poor banking culture in Nigeria [63]. It is the confidence bestowed on banks that makes customers to surrender their hard-earned money and valuables to the banks for safe-keeping. The various bank failures have its negative effect on customers and thus the banking industry's efforts to mobilize deposits are jeopardized as a result of the confidence crises (Somayo 2008). This has resulted in people keeping money at home or utilizing them to buy goods or putting the money on short term investments, thereby creating socio-economic instability in the country, which further slows down the economic growth of the nation (Olalekan 2011). Although the Nigerian government has shown some attention to bank failures due to local and international concerns, but the issue has become so severe that every family or extended families have one tale of the other to tell about money lost as a result of bank collapse and the ripple effect, like a scar, is still fresh on the minds of many business man and woman, especially the age group between 30 – 60, [5]. Somayo [79] further states that the weaknesses and failures of so many banks resulting in merger and acquisitions pose the biggest threat to the stability and viability of the Nigerian financial system and the economy at large. Based on the above analysis, the Nigerian population may have lost confidence on the ability of banks to perform their vital roles as agents of economic growth. And this has accounted for more money in circulation being in the hands of individuals, but not in the banks. Many small businesses, individuals and corporate organization [ (Ezeoha 2006) have little or no confidence in the banking industry. Furthermore, most are only interested in the banks because of the promise of loans and most of these loans are never repaid (Adesina and Ayo 2010). The problem has been that the get rich syndrome has become a national tragedy, and pushes even bank managers to collude with well-known business men and women to take out chunks of loans with high interests but end up not repaying, and most business men and women often take out huge loans with the intention of purely defrauding the banks. Summarily,

Adesina and Ayo (2010) and Olalekan (2011) argued that there are evidences of poor banking culture in Nigeria, and this is as a result of lack of trust and confidence as a result of past bank failures in which so many customers lost all their savings – the memory still lingers, however, the lack of patronage of the banks is also a problem with the usage of the technology provided by the banks. Olalekan (2011) further stressed that the patronage of Nigerian banks and its services have nose-dived in recent years as a result of distresses and loss of live savings by the bank customers in the not too distant past as well as the 2008 global bank crisis. Customers' trust and confidence are central to this research as it is a pillar to financial transactions, based on this therefore, this study will further investigate the level of customers' trusts and confidence in the adoption of internet banking services in Nigeria.

## **2.9 Electronic banking adoption among older and younger generations**

In addition, Agwu [3] findings showed that the younger the consumers, as it is in Nigeria, the more comfortable they were in using electronic banking. Similarly, Karjaluo, et al., [44] demonstrated that electronic banking users were younger than non-electronic banking users. These findings imply that older consumers are less likely to favor electronic banking. As for the impact of marital status on the assessment of electronic banking, Stavins [80] identified that married consumers were more like to use electronic banking. Katz and Aspden's [42] findings showed that males were more likely to use electronic banking than females. Similarly, Karjaluo, et al., [44] found that electronic banking users were dominated by males. Using the findings from these studies, it can be proposed that male gender positively impacts on the choice of electronic banking. In terms of the consumers' ethnic background in electronic banking, Katz and Aspden [42] found evidence that consumers' ethnic backgrounds were an influential factor in using electronic banking. Stavins [80] identified white-collar consumers as being most likely to use electronic banking. It can be postulated that occupation status (namely white-collar) is positively related to the choice of electronic banking. Al-Ashban and Burney [6] and Stavins [80] studies showed that as consumers increased their educational qualification level, their adoption of electronic banking would increase as well. Chan [20] established that income was the single most important variable that influenced a

consumer's use of a credit card. Empirical findings of income positively influencing adoption of electronic banking can be found in Al-Ashban and Burney's, Stavins's [80] and Karjaluoto's [43] studies. For example, Agwu [3] studied the relationship between consumers' area of residence and the use of electronic banking. The author suggested that consumers who reside in different residence areas have heterogeneous tastes and preferences in relation to electronic banking. This research seeks to determine which age group has the greatest tendency to use electronic banking since different age groups reflect differences in mix and types of banking services used by the respondents. This research would also like to determine if gender plays a part in differentiating respondents who are electronic banking user and those who are not. It would also like to determine whether more educated respondents would likely be electronic banking users. Lastly, it seeks to determine which income group would be most likely to be electronic banking users. Additionally, income was divided into low, medium and high; age group was divided into young (between 16 to 30 years old), medium (31 to 50 years old) and old (above 56 years old); employment level was divided into blue-collar works, white-collar worker, casual worker (including unemployed, students and housekeepers) and retirees and ethnic group was divided into the major tribes comprising of Hausa, Ibo, Yoruba and others. For example, Agwu [3] study showed that the adoption rates of ATM were higher among younger users in all towns and cities in Nigeria.

### 3.0 Methods

As this research pivots round consumers and the decisions they make, the understanding of how customers make choices is important for this study. It is also important for organizational managers to put in place the necessary strategies, product designs, and business investment decisions. Recent advances in theory and empirical methods have resulted in an improvement in understanding human choice behavior and the ability to analyze and predict choice behavior. The dependent variable is based on the question asked in the quantitative survey: "Do you use the internet banking channel?" Furthermore, the demographic characteristics such as age, gender, marital status, education, ethnic group, area of residence, and income were hypothesized to influence the respondent's decision to use electronic banking.

### 3.1 Data analysis

Data for this analysis was obtained through a survey method. The instrument used were set of questionnaires. These was sent to 450 household in five states of Nigeria cutting across, the West, East and Northern states. The questionnaire gathered information on consumers' decisions to use electronic banking versus non-electronic banking. Six Assistant Lecturers in three universities in the above mentioned areas were engages to assist in the questionnaire administration and collation and this took place over six weeks. The questions were phrased in the form of statements scored on a 5-point Likert-type scale, where 1 = "strongly disagree," 3 = "neither disagree nor agree," and 5 = "strongly agree." A total of 579 useable surveys responses were returned resulting in a useable response rate of 72.36%. From the total of 529 useable questionnaires, 51.49% of the respondents were electronic banking users, while 48.51% of respondents considered themselves as non-electronic banking users. The sample respondents comprised of 36.46% females and 63.54% males. Furthermore, 59.09% of the respondents were married at the time of the survey. The majority of the survey respondents were between 20 to 44 years (41.03%) and 45 to 53 years (21.66%) and 37.58% of the respondents resided in the suburban areas. The three main ethnic groups made up the major respondents of 88.09% and the median education level of the respondents was determined to be at the tertiary level and the median annual household income for the sample respondents was between =N=600,000 to =N=10,000,000 per annum. Furthermore, the distributions of non-electronic banking users are similar to the distributions of the electronic banking users in terms of marital status, gender, ethnic background and area of residence. However, the distributions of age group, occupation, annual income, and educational qualification for the non-electronic banking respondents are different from the electronic banking respondents. The non-electronic banking users are older than the electronic banking users, with the median age groups between 54 and above. In addition, a higher proportion of retired respondents dominate the non-electronic banking group when compared with the electronic banking group. The majority of the non-electronic banking users' annual incomes are slightly lower than the electronic banking respondents. The educational qualification levels of non-electronic banking

respondents are same with the electronic banking respondents.

### 3.2 Analysis

The items used to measure each construct were tested for reliability by using a Cronbach's Alpha value of 0.60 as the cut-off point. A value of 0.60 or more indicates satisfactory internal consistency reliability in exploratory studies (Creswell 2009). The scores of the items (questions) representing each construct were totaled, and a mean score was calculated for each construct. Using these means, together with the demographic characteristics the logit equation was estimated. Empirical estimates of the logit model via maximum likelihood assure large sample properties of consistency, efficiency, normality of the parameter estimates and validity of the t-test of significance. In general, the model fitted the data quite well. The chi-square test strongly rejected the hypothesis of no explanatory power and the model correctly predicted 92% of the observations. The estimated coefficients indicate that service quality dimensions (reliability, assurance and responsiveness) and user input factors (control, enjoyment and intent to use) have a positive impact on consumers' likelihood to use electronic banking. This implies the level of service quality in electronic, the independence and freedom associated with electronic banking and the enjoyment that could be derived from electronic banking will favourably influence consumers' decision in using electronic banking. Perceived risk factors (financial risk, performance risk, physical risk, social risk and psychological risk) were found as hypothesized, to negatively affect the probability to use electronic banking. Research tells us a consumer who is risk adverse perceives electronic banking as a financial risk when it is not possible to reverse a mistakenly entered transaction or stopping a payment. Furthermore, the threat of personal information accessed by a third party negatively influences a consumer's likelihood to use electronic banking. This supports the finding of Ho and Ng, [62], Lockett and Laukkanen, et al., [56] [48]. The demographic variables (age, employment, education, income and residence) were also significant in explaining the respondents' probability in using internet banking services in Nigeria. For example, the negative coefficient of the age group above 54 years showed that senior consumers were less likely to use electronic banking. Senior consumers are more risk adverse and prefer a personal banking relationship to

non-personal electronic banking. Customers with low educational qualifications may be less likely to use internet banking due to their low income status. Furthermore, electronic banking transaction could be costly and seen as a misfit for this age group who primarily depend on pension. As expected, very high income respondents were less likely to use electronic banking as they may prefer to deal with the bank staff directly when doing complex transactions and handling large sums of money instead of using electronic banking. The significant and positive coefficient for white-collar employment suggests this employment level has a positive impact on the respondents' probability in using electronic banking. Furthermore, the estimated coefficient casual is also positive and significant implying that a respondent who is either unemployed or a student or a house person has a strong probability in using electronic banking. This may be attributed to a low ownership of motorized transport associated with this group. Gender and married status do not have an impact on a consumer's decision to use electronic banking. In addition, a positive relationship was found between the respondents who reside in a rural area and electronic banking, but mainly the ATMs. This relationship may be interpreted as distance, a significant determinant for using electronic banking. Additional information can be obtained through analysis of the marginal effects calculated as the partial derivatives of the non-linear probability function, evaluated at each variable's sample mean (Greene, 1990). For example, in the case of estimation of the parameter on employment level, the probability that the respondent is an electronic banking user, *ceteris paribus*, is approximately 8.93% lower than if respondent is not a white collar worker. If the perceived risk is decreased by one unit then the probability of a respondent using electronic banking will increase by 18.47%. A unit increase in user input factor will result in an estimated 9.21% increase in consumers' probability in using electronic banking.

### 4.0 Conclusions

The findings of this study confirms the positive relationship between the service quality and user input factor dimensions and electronic banking, and they are consistent with Karjaluo, Mattila and Pento's [45], Laukkanen, et al., [48]; Yap, et al., [87] findings. The negative relationship between the perceived risk factors and electronic banking also support Ho and Ng's [39], and Agwu [3] findings. Furthermore,



various relationships between electronic banking and demographic characteristics are identified in this study. For example, the results of this research support Barnett's [9] and Karjaluoto's [43] findings that consumers in the older age group are negatively disposed towards to electronic banking. Furthermore, the estimated coefficient "Young" was not significant and contradict our hypothesized sign. This is because the medium age group is the base line on the analysis. Thus the probability that a young respondent will use electronic banking is slightly lower than the medium age group. The positive relationship between consumers in white-collar occupations and electronic banking use is also identified in this study, and it parallels Stavins' [80] findings. In addition, the findings support Stavins' [80] results that the consumers' different residence areas have different impacts on electronic banking use. There is a positive relationship between low income consumers and electronic banking even though it is statistically insignificant. It can be argued that the costs associated with electronic banking are currently more affordable than when electronic banking was first launched in 2001 in Nigeria. Therefore, even low income consumers are not inhibited in their access to electronic banking within the Nigerian financial landscape, and in fact, it may be a lower-cost channel for these consumers due to reduced travel costs of mobile phones, access costs, and maintenance. Al-Ashban and Burney (2001) suggested that the increased availability of electronic banking and the

decreasing costs associated with electronic banking could result in an increase in the utilization of electronic banking. In contrast, high income consumers are less likely to use electronic banking due to security reasons.

### **5.0 Managerial implications**

This findings of this study revealed that the internet banking users of different ages are burdened with various problems within the Nigerian landscape. Most bank customers do not use internet banking due mainly to the various risks.

And unfortunately no one reaches out to them as obtained in the developed countries such as the United Kingdom where banks directly market every segments of the society well as design special products for them. In most instances, these problem are often over looked or not given adequate attention by bank mangers. In addition, this lack of attention, based on the outcome of this research shows that various bank customers go in and out of bank branches with little or no knowledge of banking products and services, its advantages and its usages, example is the internet banking services. Therefore the importance of the need to create detailed awareness of this very important channel cannot be over-emphasized. Considering the importance of this low-cost product, it is important that this all important channel is given the right promotion and given its right of place

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