

An Assessment of Bank Customers' Intention to Use Internet Banking: The Role of Service Quality

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Abstract – This study was aimed at assessing the behavioural intention to use internet banking among bank customers. The study adopted the survey research design based on quantitative approach. Data was collected from 406 bank customers in Bauchi and Gombe states, North-east Nigeria using the convenience sampling technique. Structured questionnaire was used as instrument for data collection and 403 responses were retrieved back and found fit for the analysis. The collected questionnaire was analysed using multiple regression. The result of the analysis revealed that performance expectancy, effort expectancy, social influence and reliability have significant positive effect on the behavioural intention to use internet banking service. The study therefore concluded that, banks that intend to increase the adoption rate of their internet banking platforms should focus more on making it easy for users/customers to use and the internet banking service should focused more on providing benefits to customers. In addition, marketing communications should not overlook the important role of role models and peers that influence intention decisions of customers.

Keywords – Behavioural Intention, Effort Expectancy, Internet Banking, Performance Expectancy, Reliability, Social Influence.

I. INTRODUCTION

The banking sector is one of the most important sectors of the economy that facilitates the conduct of financial transactions as well as brings stability to the economy. In the past, most banking operations were conducted using manual methods which usually resulted in longer transaction times, poor service delivery and human errors among other things. These methods were gradually replaced by innovations in the sector that were both incremental and radical in nature. Innovations and developments are increasingly becoming manifest in strong competitive markets. During the last two decades, banking industry has witnessed many innovations in products, processes and procedures. These innovations in banking have gained more prominence in context of economic significance and satisfaction of customers.

Internet banking service (IBS) is one such innovation in banking which has controlled two important parameters: time and distance [1]. Internet banking has been defined as a facility that allows customers of a financial institution to conduct financial transactions on a secured website operated by the institution, which can be a retail or virtual bank, credit union or building society [2]. The benefits of internet banking include enabling customers to send or transfer money, pay bills online, access online products, rates and services, make deposits and offer 24-hour customer assistance desk. As a result, Internet banking leads to customer satisfaction, bank profitability and performance.

The Nigerian economy is characterized by huge amount of money in circulation; thus majority of its transactions are cash based [3]. To reverse this trend, the Central Bank of

Nigeria (CBN) in 2019, reiterated its commitment to cashless policy by introducing charges on every bank cash transaction. The apex bank further launched Payment Service Banks (PSBs) to make banking services available to over 60 million financially excluded Nigerians by 2020. Prior to these initiatives, it was reported that, only 2% (about 2.4million) of Nigeria's over 140 million populations actively use the internet [4-5]. This suggests that the country performs dismally low in internet usage generally: and so performance in internet banking cannot be an exception. Nigeria arguably has the highest number of unbanked and underserved population compared to other countries across the globe [6]. The Central Bank of Nigeria [7] recognizes that internet banking service is still at the cradle stage of development in Nigeria. Odumeru [8] asserted that developing countries such as Nigeria are lagging behind in internet banking service operations, and customers' acceptance of internet banking has not yet reached the expected level. According to him, the service quality of internet banking in Nigeria is still low.

One of the fundamental issues affecting the implementation of internet banking among most financial institutions until today is about the acceptance of banking transaction among the users [9]. Customers exhibit behavioural intentions which can be positive or negative. Positive behavioural intentions include purchase intention and willingness to pay for premium price, and this has critical effects on brand and organizational performance. Negative intentions include complaint behaviour and avoidance of services provided. Service quality, internet bank security and trust influence behavioural intentions to use internet banking [10]. Generating a greater understanding of consumer behavioural responses continue to be primary concern for marketing researchers [11]. This is reflected in the frequency and rigor with which researchers have explored and modelled the antecedents of the behavioural intentions of consumers [12-13].

Performance expectancy, Effort expectancy, Social influence and E-service quality are factors that influence customers' behavioural intention towards acceptance of service products [13-14]. While extant literatures have examined in details the roles played by these factors in influencing users' adoption intention, little is known about the service quality reliability dimension. This is despite the fact that reliability dimension of service quality is an important determinant of customers' intention to use service products [15]. For example, in Nigeria, there is a high degree of customer complaints of poor internet connectivity, increasing threat by account hackers, high charges and

sometimes, poor service recovery efforts when customers have problems [16].

Previous empirical studies on internet banking acceptance were mostly conducted in countries like the USA, the UK, Spain and Malaysia, with few empirical studies on the subject conducted in developing countries like Nigeria [17]. Given the difference in orientation, economy, social conditions and cultural values among consumers across the nations, it is presumed that the behavioural responses of consumers in developing countries like Nigeria will be different from those of other developed countries like the USA, UK and China [18]. Despite the fact that the extensive replication, applications and integration of UTAUT have enabled many researchers to understand technology adoption, there is still a need for a systematic investigation and theorizing of the salient factors that apply to a context-based consumer technology use [19]. In light of the few and limited studies on the determinants of customers' behavioural intention to use internet banking in Nigeria, reliability of technology-based services as it affects customers behavioural intention to use internet banking services of commercial banks in developing countries such as Nigeria, this study attempts to fill the observed gap.

II. LITERATURE REVIEW

2.1. Concept of Internet Banking

Internet banking can be defined as a facility that allows customers of a financial institution to conduct financial transaction on a secured website operated by the institution, which can be a retail or virtual bank, credit union or building society [20]. It involves conducting financial transactions over a secured website. This platform facilitates business activities for those that have embraced it. It can also be defined as a facility provided by banking and financial institution that enables the user to execute bank related transactions through Internet [16]. Internet Banking Services is the customers' ability to access their bank accounts and complete all their banking transactions through bank websites without the need for a physical presence in physical places of the bank.

Nigeria as a country has joined the League of Nations embracing the technology, however, the adoption is low [8, 16]. Most Banks in Nigeria have deployed it in their mainstream operation but the acceptability by customers has not been clearly verified. The Central Bank of Nigeria on the other hand as the apex financial institution in the Country has also champion a cashless economy, which has led to a renewed interest in this wonderful but security- threatened technology.

2.1.1. Performance Expectancy (PE)

Performance Expectancy is defined in terms of utilities extracted by using technology-based service like internet banking such as saving time, money and effort, convenience of payment, fast response and service effectiveness [13, 21]. In other words, PE measures the degree to which an individual believes that using the technology based services like internet banking will help him or her attain gain in performing bank tasks. Previous studies found performance expectancy to have positive relationship with customers' behavioural intention [13, 22; 23-27]. It is logical for one to assume that Nigerian internet banking customers expect to attain gain in performing internet banking tasks.

2.1.2. Effort Expectancy (EE)

Effort Expectancy is the degree of ease associated with customers' use of technology [13]. It is synonymous to perceived ease of use which has been noted to positively influence the behavioural intention to use technology [28]. Previous empirical evidences suggest that EE is an important determinant of behavioural intention to use an information system. For example, [24]; [23], [22], and [29] found that EE has a significant positive influence on behavioural intention. This implies that with an easy and less effort required to use an IS system, users will be motivated to use the system otherwise they will not. In the context of this study, it is expected that if the users find internet banking services easy to use, then they are more likely to use and adopt it. On the contrary, if the users find the services to be difficult to use, then they are less likely to adopt it.

2.1.3. Social Influence (SI)

Social Influence is defined as 'a person's perception that most people who are important to him think he should or should not perform the behavior in question' [30]. In other words, SI refers to the social pressure coming from external environment which surrounds the individual and may affect their perception and behaviours of engaging in a certain action such as the opinions of friends, relatives and superiors. Much of the empirical research in information system found SI to be an important antecedent of behavioural intention [22, 31-34] and in Internet Banking [35-37]. With the way people's life are moulded round role models, public figures, sportsmen and celebrities, an encouragement by such important figures to use the system can motivate users to adopt the use of an information system [38]. Nigerian society is multicultural in nature, diverse in many areas of life. It is necessary to investigate the impact of this diversity in influencing the behavioural intention to accept internet banking services.

2.1.4. Reliability

Reliability is the ability to perform the promised service dependably and accurately [39]. It means that the organization must deliver what it promises its customers. Dorian [40] has described some of the important attributes of reliability. One of these attribute is competence and another one is efficiency. Customers want to do business with companies that keep their promises, particularly those concerning core service attributes. All banks need to be aware of customers' expectations of reliability. Management has to work as a team with staff, to improve the level of service that their staff offers to their customers. There is a strong relationship between customers' reliability on service provided and customers' behavioural intention towards acceptance of the service [41]. Reliability features of technology based products are essential to consumers' use of such electronic channel [42]. The more reliable and secured consumer perceive internet banking to be; the more likely they will be to use it. Lee [43] found that reliability and ease of operations influence customer perception of internet banking.

III. THEORETICAL REVIEW

The Unified Theory of Acceptance and Use of Technology (UTAUT) developed by Venkatesh, Morris, Davis, and Davis' [31] served as the theoretical lense of the study. There are generally numerous competing models in field of information technology acceptance research with each of them having different determinants of behavioural intention to adopt an information system. Venkatesh et al. [44] synthesized eight prominent models and theories to develop the UTAUT. These prominent theories and models were: (a) the theory of reasoned action; TRA (b) the technology acceptance model; TAM (c) the motivational model; (d) the theory of planned behavior; TPB (e) a combined model using the technology acceptance model and the theory of planned behavior; (f) the PC utilization model; (g) the innovation diffusion theory; IDT and (h) social cognitive theory SCT. The quantitative study resulted in the development and empirically validated UTAUT, bringing together the eight predominant models into one theoretical framework.

The theory consists of four core determinants and four moderators of behavioral intention and use behaviour (see figure 1). The core determinants are: (a) performance expectancy; (b) social influence; (c) facilitating conditions; and (d) effort expectancy. The four moderators are: (a) age; (b) experience; (c) gender; and (d) voluntariness of use [45]. The UTAUT was dubbed a useful tool for managers to

evaluate the probability of success in implementing new technologies, to understand core determinants of acceptance and be proactive at intervening with appropriate action plans

targeting users deemed less likely to adopt and use new technology systems [31]. In 2012, Venkatesh joined Thong and Xu in a study to further extend the UTAUT [19].

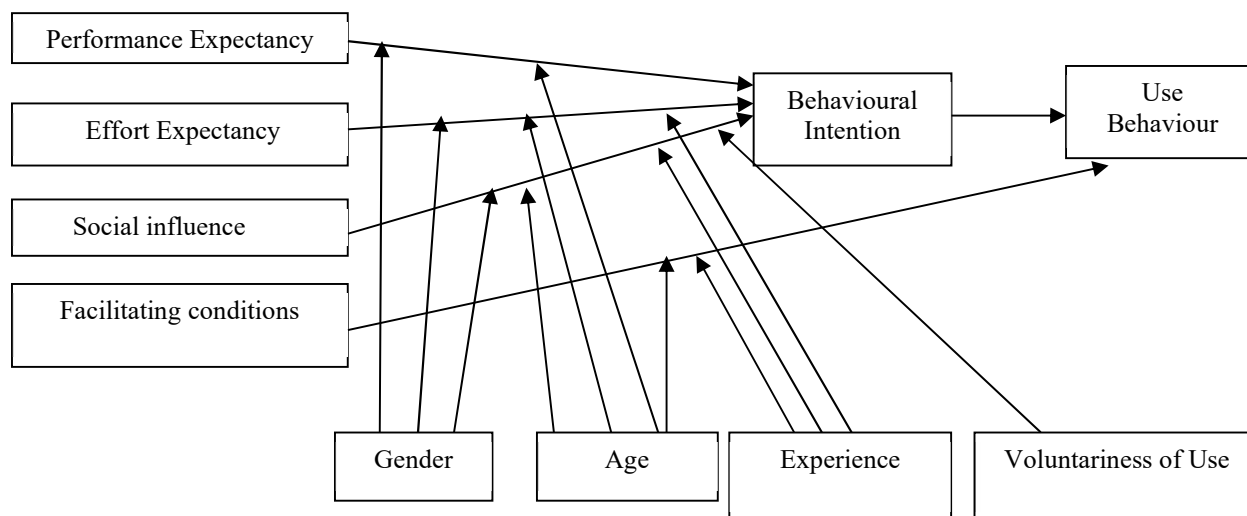


Figure 1: Unified Theory of Acceptance and Use of Technology (UTAUT)

Source: Adopted from Venkatesh *et al*, [31].

Research Framework and Hypothesis Development

This study used the UTAUT framework to develop a research framework by introducing e-service quality variables of reliability to the UTAUT model of [31].

Determinants of B.I

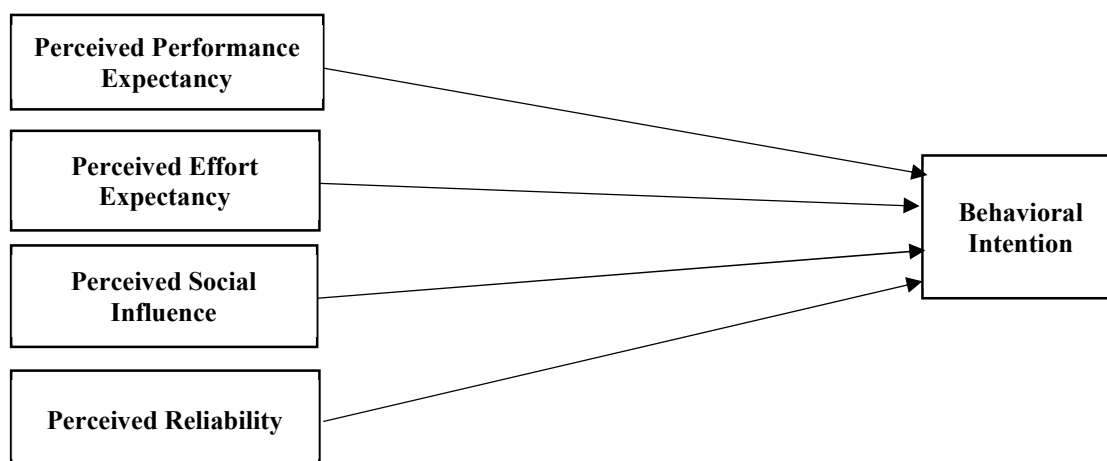


Figure 2: Framework of the Study

Source: Adopted from Venkatesh *et al*. [31] with modification.

Based on the research framework and the reviews of previous empirical studies, the following hypotheses were formulated to guide the study:

H₁: Performance expectancy has significant effect on the behavioural intention to use internet banking services in Nigeria.

- H₂: Effort expectancy has a significant effect on the behavioural intention to use internet banking services in Nigeria.
- H₃: Social influence has a significant effect on the behavioural intention to use internet banking services in Nigeria
- H₄: Reliability has a significant effect on the behavioural intention to use internet banking service in Nigeria.

IV. METHODOLOGY

The study adopted the cross-sectional survey research design which is quantitative nature. This research design was adopted with the aim of establishing relationships between variables [46]. The population of the study was made up of the 256,340 (two hundred and fifty six thousand, three hundred and forty) customers who are enrolled in the internet banking platform from the seventeen banks operating in Bauchi and Gombe states. Based on the Krejcie and Morgan [47] table for sample size determination, the sample size of 384 (three hundred and eighty –four) was determined. However, this is the minimum sample size required for the study and since there was no guarantee that there will be 100% response rate because of human behaviour and other factors, the sample size was increased by 30% to account for non-response bias/attrition [48] . Thus, 406 customers were used for the study. The convenience sampling technique was used in this study because a sampling frame could not be obtained from the banks. This is because most banks consider such information as secret and are not willing to reveal to any outsider.

A structured questionnaire was developed and administered to the bank customers. The survey instrument was designed to include a two-part questionnaire, including demographic and latent constructs items. The first part of the questionnaire incorporated demographic questions comprising age, gender and occupation of the respondents. Therefore, the second part of the questionnaire includes six latent constructs. The questionnaire items used in this study were adapted from previous studies that measured the same variables. The study however, modified some items to suit the research context and the environment [49]. For service quality an electronic service quality (E-S-Q) instrument that has been extensively used to measure the quality of service delivered by internet banking, ATM, Websites and other online services developed by [50-52] were used. While for the UTAUT variables (Performance expectancy, Effort expectancy and Social influence), the instrument developed by [19, 26, 33-34, 38, 53] were used. For behavioural

intention, the instrument developed by [52], and [54] were used. These instruments are relevant to the study and have been tested for reliability.

The research instrument was administered to the target respondents using the personal method of questionnaire administration, with the help of some research assistants for collecting research data. These assistants were given allowances and gift items to motivate them for the desired commitment to ensure accurate data gathering. The Customer Relation Officers of the bank were used for the data collection since they have daily contacts with the customers of the bank. Convenience (Accidental) sampling techniques were used for distributing questionnaires to the respondents. The aim was to get some basic information quickly and cost efficiently [49].

Validity and Reliability of Instrument

The validity of the research instrument was determined using the face and content validity. To ascertain this, the researcher presented two copies of the questionnaire to two experts from the Faculty of Management Science, Abubakar Tafawa Balewa University, Bauchi and one other expert from the banking industry. The experts were also presented with copies of the research purpose, research questions and research hypotheses as a guide. They were requested to assess the suitability of the language, the comprehensiveness, adequacy and relevance of the items in addressing the research questions, bearing in mind the purpose of the study. Their comments, suggestions and correction were accommodated and used to modify the instrument.

The internal consistency or reliability of the refined scale was assessed by Cronbach's alpha. In general, reliability coefficients of 0.70 are considered satisfactory [55]. The items reliability presented in table 1 range between .871 and .941 which are all above the recommended threshold thereby suggesting good internal consistency.

Table 1: Reliability Co-efficient

Construct	Number of Items	Cronbach Alpha
Performance Expectancy	6	0.895
Effort Expectancy	7	0.892
Social Influence	6	0.895
Reliability	6	0.871
Behavioural Intention	10	0.941

V. RESULT AND DISCUSSION

The data were collected from customers of commercial banks in Bauchi and Gombe states of Nigeria. A total number of 423 questionnaires were administered to the customers of 17 commercial banks in Bauchi and Gombe states. From this number, a total of 403 questionnaires representing 95.3 percent of the total questionnaires administered were retrieved and found valid for analysis. The returned questionnaires were then coded and data were entered in IBM SPSS Statistic version 25. The data was cleaned; missing values, outliers and normality were assessed. There are two approaches to handling missing data: delete or retain cases/variables with missing variable. In this study, few cases have missing data in them and since they did not contain high levels of missing data, no cases were dropped [56]. Means values were used to estimate the missing values in line with suggestion by Tabachnick and Fidell [56]. This mean imputation is conducted by applying the SPSS procedure with a 'Replace with mean' option which calculates the mean value for the variable and gives the missing case the value [57].

Furthermore, Boxplot command was used to assess univariate outliers – outliers that have an extreme score on a single variable. A number of univariate outliers were identified using the explore function of SPSS and they were all retained because the outliers were not as a result of miscalculation or data error. Denis [58] suggested that it would dishonest data analysis, even worst, dishonest science to delete outliers from one's data unless the researcher can justify it based on his/her substantive knowledge of the area under study that such data point could not have reasonably been expected to have arisen from the population he/she is studying.

Furthermore, screening continuous variables for normality is a crucial phase in a multivariate analysis. Normality of variables is assessed by either statistical or graphical methods. Two components of normality are skewness and kurtosis. The skewness values of all the items and that of kurtosis are within the normality cut-off point of ± 2.58 [59-60]. Thus, it can be concluded that evidence of normality of data exist.

Hypotheses Testing

Multiple regression analysis was used in testing the hypotheses of the study. The analysis was done using SPSS statistical package. Before assessing the hypothesized relationships, the underlying assumptions of multiple regression analysis – linearity, multicollinearity homocedasticity, normality and independence of errors – were tested to ensure that there were no serious violations of

these assumptions. Standardised residuals were plotted against the regression standardised predicted values to check for linearity and equality of variances. The results showed no signals of violation (see Figure 4). In addition, the histograms and normal probability plots of the residuals showed the data were normally distributed (Figure 3 and Figure 4).

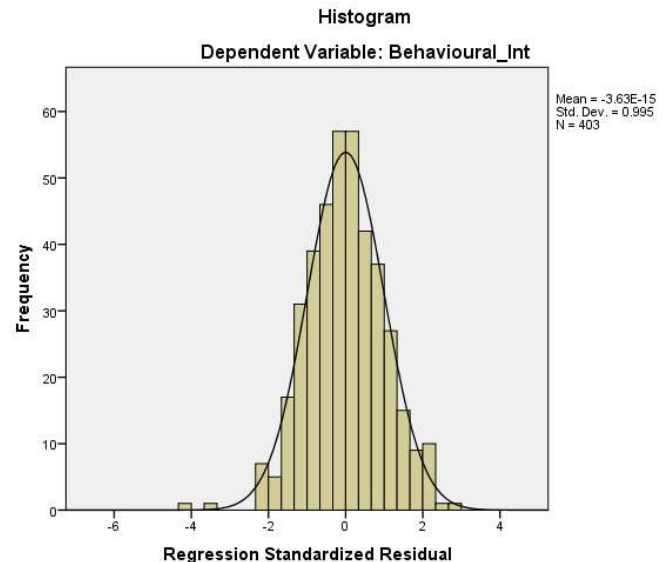


Figure 3: Histogram (for Normality)

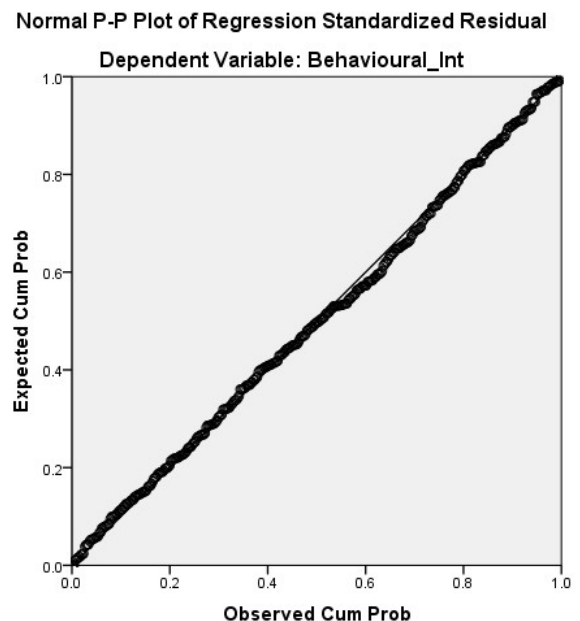


Figure 4: Normal P-P Plot

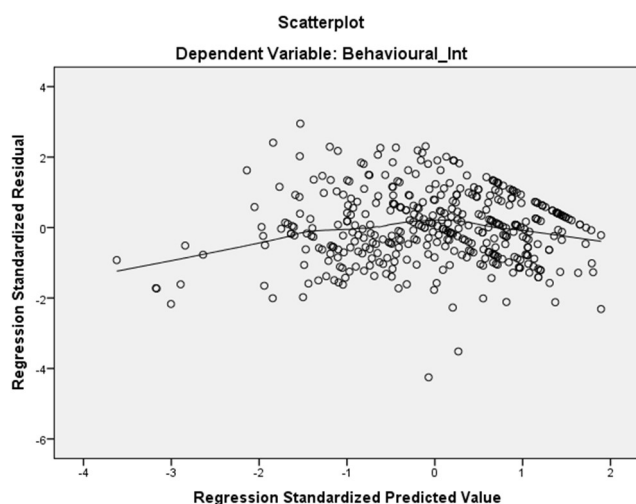


Figure 5: Scatterplot

The study also went further to assess the assumption of multicollinearity by assessing the Variance Inflation Factor (VIF)/tolerance values of the constructs. Accordingly, the predictor constructs were used to run ordinary least squares (OLS) regression which provides a collinearity statistic such as variance inflation factor (VIF) and tolerance values. The VIF above 5.00 for any of the predictor constructs indicates that there is a problem of multicollinearity in the model [61]. In this study, the VIF for all the predictor constructs range between 1.543 and 2.139 which are well below the threshold of 5.00 thus, suggesting that multicollinearity was not an issue.

The study further diagnosed the presence of autocorrelation in latent variable scores using Durbin-Watson test available in SPSS by performing OLS regression. This test resulted with the Durbin-Watson statistic of 2.041 which indicated lack of autocorrelation problem. While the value for Durbin Watson lies between 0 and 4, a value closer to 2 is considered acceptable [62].

From table 2, it can also be seen that 61.8% of the variation in the dependent variable (behavioural intention to adopt internet banking) is been explained by the independent variables (performance expectancy, effort expectancy, social influence, and service quality reliability). This implies that the independent variables are predictors that explained 61.8% of the variance in behavioural intention to adopt internet banking. Table 2 also shows an F-value of 160.838 which is significant at 0.000. This is an indication that the regression model of the study is relatively significant in explaining the variance in fraud prevention.

Table 2: Multiple Regression Analysis Result:

Constructs	Unstd. Est.	Std. Est.	t-value	p-value	VIF
Performance Expectancy	.196	.226	5.507	.000	1.748
Effort Expectancy	.404	.418	9.222	.000	2.139
Social Influence	.163	.176	4.541	.000	1.571
Reliability	.106	.127	3.303	.001	1.543
F-Statistics	160.838				
F-Sig.	.000				
R	.786				
R-Squared	.618				
Adjusted R-Squared	.614				
Durbin-Watson	2.041				

Table 2 revealed that hypotheses 1, 2, 3 and 4 were supported at the 1% level of significance. Specifically, the study revealed that performance expectancy has a significant positive effect on behavioural intention to use internet banking which is consistent with the previous studies by [13], [24], and [27] who found that performance expectancy has the highest co-efficient path weight among other constructs in its impact on customers' behavioural intention. However, these findings contradict with the findings of [64-65] who found that performance expectancy, has no direct effect on consumer behavioural intention.

The study also found a significant positive effect of effort expectancy on behavioural intention to use internet banking which is in agreement with the result obtained by [13]; [24]; [27] [29], and [33], who had found effort expectancy as a strong determinant of consumers' behavioural intention. Similarly, the positive significant effect of social influence on behavioural intention was supported by the work of [31-32], [34], [36-37], and [66]. However, unlike the finding of this study, [24], and [63] found no relationship between the two variables.

Finally, the test result of the fourth hypothesis show internet banking reliability to have significant positive effect on behavioural intention. This result is in congruence with the result obtained by [67] and [68].

VI. CONCLUSION

This study was aimed at determining the factors affecting behavioural intention to use internet banking service. The study was motivated by the fact that despite the growing importance of internet banking services in facilitating financial transactions, adoption rate has been low in

developing countries like Nigeria. The study was grounded in the UTAUT theory which is one of the most frequently used theories in information system research. The result of the study revealed that performance expectancy, effort expectancy, social influence and reliability have significant positive impact of customers' behavioural intention to use internet banking. The study therefore concludes that bank managers must understand customers' need/wants and deliver services that will match or exceed the actual experience with the needs in order to facilitate exchange. The internet banking service quality variable of reliability has a significant relationship with customers' behavioural intention which implies that Nigerian banks need to pay attention to reliability features of their internet banking services to sustain customers' relationship and loyalty.

RECOMMENDATIONS

The following recommendations are made based on the findings and conclusions drawn from the findings of the study:

1. Banks should work with information technology experts and customers in developing internet banking services that will directly meet the needs of the customers of convenience so as to motivate more of customers to use the services.
2. Information technology vendors should make concerted efforts in making internet banking platforms to be easy to use and operate.
3. To increase the social influence of important others on the potential customers of internet banking services, bank managers need to proactively manage social influence that may be exerted on individuals by organising forums for sharing best use practices, instituting champions who are enthused about new technologies and can generate positive word-of-mouth, and planning counter-measures for any negative feedback.
4. On Internet bank reliability, internet banking service providers should have a good knowledge regarding customer behaviour and ensure they consistently provide the services needed by the bank customers.

LIMITATIONS OF THE STUDY AND FUTURE RESEARCH DIRECTIONS

This study like most other studies is not without limitations. First, it was difficult to obtain the sample frame of the study because banks consider such information as confidential information. As such, this constitutes a methodological limitation faced in this research. The inability

to get the sampling frame resulted in the use of convenience sampling which is open to more bias than other probability sampling technique. Future research should therefore, employ probability sampling techniques so as to control for bias. Unlike banks where the names of customers are not normally released due to confidentiality, other service organisations such as educational institutions would be more likely to provide their customers' (students or staff) names. Alternatively, research should take institutional customers as respondents (organisational level of analysis). It is expected that in this case, getting a sampling frame would not be a problem.

Secondly, this study was based on a cross-sectional strategy where data was collected in one period of time. This does not allow for a more in-depth study of behavioural intention to use internet banking. As such future research can consider using a longitudinal approach in which data collection will cover a long period of time. Furthermore, although this study did not aim to compare the customers from different regions in Nigeria, there could be some differences among the customers from different geographical locations. However, given that bank customers are homogenous and that the resources available are limited, focusing on one geographical region is an appropriate and economical option. Due to the differences on ground of geographical location, it is recommended that future researchers on other sectors different from banking sector should conduct a national survey and compare the consumer behavioural responses among different geographical regions in Nigeria.

The indications are that other variables could also moderate or mediate the variable explored in this study. Hence, it is recommended that future research should investigate the mediating and moderating influence of other variables with regards to the variables employed in this analysis. For future research, additional internet service quality dimensions should be investigated such as interactivity and website services ability. In addition, perceived risk and trust constructs should be incorporated as determinants of behavioural intention.

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