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Service Quality Dimensions and Customer Satisfaction with Online Services of Nigerian Banks

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Abstract

This study concerns the relationship between service quality dimensions and customer satisfaction with online/ebanking services of Nigerian banks. Seven service dimensions were included in the study and they are: reliability, assurance, responsiveness, perceived risk, tangibility, security, and price. The study was based on a sample 400 respondents out of which 258 responded to the questionnaire. The seven service quality variables and the dependent variable were all measured with a number of items each using seven-point Likert

scale. The analysis was conducted with Multiple Linear Regression analysis (MLR) and the results show that five out of the seven variables: price, security, perceived risk, responsiveness and assurance are significant in enhancing customer satisfaction with online services of Nigerian banks. The other two variables: reliability and tangibility are not significant and require further exploration. The study provides necessary input for bank management to increase customers' involvement through improving service quality; lowering risk; and enhancing security of operations. Policy implications were highlighted

Keywords: **Online banking; Central bank; Security; Risk; Convenience; Tangibles; E-payment; Reforms**

INTRODUCTION

The rapid growth in information and communication technology (ICT) has led to the development of modern approaches of distributing goods and services. In an increasingly globalising world, internet banking services have been gaining ground; offering finance establishments fresh prospects in addition to enhancing rivalry around the international banking marketplace [1]. In the banking industry, the application of ICT has led to the development of alternative channels/methods for distributing banking services [2]. These alternative methods include the point of sale (POS) terminals, automated teller machines (ATMs), telephone/internet banking among others [3]. Thus, personal computer (PC) banking, on-line banking, electronic banking, and Internet Banking (IB) are alternative expression and refer to the provision of banking services via the internet straight to clients' private addresses or homes [4]. Daniel [5] terms e-banking as the delivery of data or services by a bank to its clients through the internet.

E-banking consists of numerous classes of banking operations in which bank customers can seek information and engage in retail banking services like inter-account transfers, balance reporting, bill payment, and so on through cable system exclusive of the consumer leaving his/her organizations or homes [5,6]. These services/ alternative methods are meant to provide 24/7 services to banking customers, bring about reduced cost of operations to both banks and their customers, and ensure efficient and effective banking operations to all concerned [7]. As customers embrace electronic forms of payments, banks become exposed to greater competition from non-bank financial services providers [8]. In line with this development, the Central Bank of Nigeria (CBN) in 2003 issued comprehensive guidelines for the operation of e-banking [9]; while interoperability of shared ATMs/ POS was established in 2004 [10]. Also in 2006 the Federal government of Nigeria through the apex bank initiated a new

payment system strategy 2020, which is part of the overall financial sector strategy 2020 [11]. These are meant to make the Nigerian payments system effective, efficient, technology-driven and in line with emerging global trends [10]. Consequently, the association among service quality dimensions and customer satisfaction through electronic/online banking deserve an empirical study [7].

In spite of the obvious advantages, the rate of adoption of e-banking/ alternative channels of distribution by the Nigerian banking customers as shown by KPMG's [12] survey remains very low. The survey revealed that the ATM is the quickest flourishing channel in Nigeria as almost eight-in-ten customers use ATM. However, the rate of adoption of other e-banking channels is still very low. Merely 7% of the participants use internet banking. Others are: POS – 6%; telephone banking – 5%; and mobile payments – 2% [12]. The survey further reports that those who use ATMs use it mostly for withdrawals.

Services deteriorate once frontline staff who render the service and the management are not on the same line. Same outcome results once the executive fails to establish or check service benchmarks, or after executives go amiss with regard to customers' service expectations. The banking consolidation exercise brought about staff rationalisation. Beyond branch consolidation and staff rationalisation, the single most important factor responsible for determining the quality of service provided by any service-oriented institution is the effectiveness of its management, with excellent customer service as its hallmark.

The reform of Deposit Money Banks (DMBs), the ensuing competition, increased number of account holders and branches have continued to have a negative impact on businesses and customers: valuable time is lost in the process of service delivery, e.g., withdrawing of cash. While the reform has produced bigger banks, the accompanying rationalisation of staff and voluntary resignation by disgruntled staff, mostly from the acquired banks, have led to manpower shortages in the industry and, as a result, erratic, unreliable and costly services. Though banks want to be seen as modern and responsive to the dynamic needs of customers, for now, their banking halls are often filled with informationcustomers either waiting to cash money or make complaints about faulty Automated Teller Machines (ATMs) which are routinely out of order and/or out of cash. Customers have also complained of their ATM cards being destroyed by the machines, and in some cases, they are debited for cash not dispensed, and it takes a lot of time to reverse these transactions. Because ATMs are not working effectively, bank customers are often forced to use counter-cheques for withdrawals at an extra cost.

Studies on e-banking acceptance in Nigeria have relied mostly on the technology acceptance model (TAM) [3]. Others like Izogo et al. [13] used demographic variables to explain e-banking usage; while Okeke [8] concern perceived risk/security and consumer involvement with e-banking. No known study in

Nigeria has explored the relationship between service quality dimensions: reliability, assurance, responsiveness, perceived risk as well as security and customer satisfaction with online banking. This study was motivated by the need to fill this gap in knowledge. Prior researches [2,7,14,15] show that service dimensions are all significant in shaping customers' attitude in the use of high technology banking products. This study was motivated by the need to validate this in the Nigerian context.

LITERATURE REVIEW

The nature and types of online banking services

Electronic banking is synonymous with electronic banking products and services that came into being as a result of the emergence of e-banking services or electronic money [16]. Electronic money refers basically to a payment and settlement system in which payment and settlement are effected through the use of plastic money cards rather than through the exchange of coins, or paper money and cheques [17]. A more succinct definition of electronic money was given in a 1997 monthly report of Deutsche BundeÃ…Â› Bank thus:
"electronic money includes money stored-value cards and network money ... which are defined as electronic credit balances in movable or immovable storage (cards) that instantly function as channels of payment to meet payment obligations by transferring the credit balance to another storage device [17]."

Another important definition of e-banking is from the Basel Committee Report on Banking Supervision, 'e-banking denotes the distribution of retail banking offerings via automated means. Some of these offerings are account management, deposit-taking and lending, electronic bill payment, the provision of financial advice, and the electronic money.' Electronic banking services are referred to as out of the ordinary pecuniary products and services, such as internet/ebanking, credit/debit cards, GSM/Mobile banking, electronic money, virtual recharge for private telephone operators (PTO), Electronic Funds Transfer (EFT), Society for Worldwide Interbank Financial Telecommunication (SWIFT) and ATMs [18]. They are referred to as e-banking services as they involve employment of high technology precautions, as biometric confirmation, the automated analysis of fingerprints involved in the design and use of some of the services [13]. These e-banking services are discussed under three classifications: electronic funds transfer, plastic money, and internet/mobile banking.

Benefits of electronic banking

Salehi and Alipour [16] summarised the advantages of e-banking based on Banks, customers, and from the economy perspectives thus:

Advantages based on banks' perspective: The primary advantages of e-banking services are enhanced branding and improved receptiveness to the market. The banks that desired offering such services longed be seen as forerunners in technology application. Consequently, such banks benefits from an enhanced brand image. Some additional advantages are feasible to evaluate in financial terms. The principal objective of all firms concern maximizing earnings for their proprietors and banks cannot be an exemption. Programmed e-banking services provide an impeccable prospect for boosting profits.

The major advantages from e-banking for individual clients are [16]:
a. Lowered costs: This stems from the cost of providing and operating the numerous banking products and services.
b. Accessibility: Most banking dealings can be done from the luxury of the home or office or any other location desired by the consumer.
c. Swiftness: The reaction of the channel is exceptionally rapid; hence clients can embark on last minute fund transfer.
d. Funds administration: Clients can access their records of separate accounts; carry out "what-if" evaluation on their personal PC before adopting any deal on the web. This results to healthier funds administration.

Economic advantages: The CBN believes that the cash-less policy will help curtail the cost of managing cash in the economy estimated at N192 billion by 2012 [19]. The impact of the emerging phenomenon of Hi-tech banking on the whole trade and industry growth has been examined in numerous studies [19,20]. Thus, based on bank's perspective, e-banking makes finance efficiently feasible:

a. Decreased running expenses of banks, mechanised procedure; faster credit decisions; and reduced minimum profitable loan size.
b. Possibly decreased margins, decreased cost of admittance; increased financing access; enhanced openness, and
c. Increased access via self-service, reduced operational cost; and cause certain corporate services to be cost-effective for society.
Based on society view point: E-banking dealing causes access to finance from banks to be fascinating. The public have profited from the growth of e-finance and progressively moved out of the informal sector. Specifically, e- finance provides such desirable advantages to the populace:
• User-friendliness
• Cost reduction
• Convenience
• Time savings
• Operating efficacy

This study is delimited to e-banking services as they relate to retail banking. A recent report in The Economist Magazine claim that retail banking will be the

utmost thrilling function of the banking transaction from now onwards. However, in contrast to the bricks-and-mortar bookshops, travel agents and record stores with negative seismic impact by the internet, banks have two huge benefits in adjusting to change and embracing new technologies [21]. The first is that in consumers' minds, money is yet unique. Not many clients love to switch banks, even if they are displeased with their own; likewise only some seem prepared to trust one with no physical presence. The trend is shifting with time, although gradually enough to permit banks to adapt. The other is that, by implication, banks are technology-driven concerns. Many have large number of employees running huge informationcustomers technology units. Most stand prepared to accept innovative methods of serving their consumers. The very discernible indication of this is the transforming nature of bank branches [21].

As the growth, pace and structure of an economy changes so does the payment system to facilitate transactions in such an economy. This has resulted in Nigeria's push to put its payment systems at par with international best practices and standards by leveraging on technology. The objective of payments systems is to promote efficiency, transparency as well as ensure integration/interoperability of the sub system. As Ovia [18] puts it, the ultimate goal of any payments system is to ensure that exchange of monetary value is achieved using payment instruments that offer the least risk, inconvenience and cost. He further added that "an efficient payment system must be defined by a few attributes: it must be reliable, prompt, accessible, secure and cost effective" [18].

An efficient payment system seeks to speed up exchange and settlement of funds and securities, promote safety by containing credit, legal liquidity and operational risks, compliance with international standards and recommendations (like cheques and electronic banking standards). It also heralds the migration to cashless mode of payment, such as electronic debit/credit instruments credit/debit cards, ATM sharing and electronic funds transfer at point of sales terminals and real time gross settlement system (RTGS). These objectives came to realization through the redirection of bank energy towards shifting small cash and noncash transaction to the ATM and other self-service channels, thereby freeing enormous human physical and material resources with the effect of causing a huge reduction in over-head, thus increasing profitability.

Today, Nigeria's e-payment and high technology banking landscape is on a new threshold with banks, switching and transaction companies, vendors of Automated Teller machines (ATMs) point of sales (POS) and third party companies jostling to expand the scope of the market. The future of the electronic payment and online banking system is promising.

However, effective over sight of the payment system landscape is crucial to achieving an efficient and reliable system. The CBN is aware of the enormous

requirement for the effective implementation of the payments system (that is the various online channels) vision and is committed to delivering on the strategic vision. This is in line with CBNs payment system vision 2020, a subset of the financial system strategy (FSS) 2020 which unambiguously states the vision of facilitating economic activities by providing safe and efficient mechanisms for making and receiving payment with minimum risks to the Central Banks, payment service providers and end users, extending the availability and usage to all sectors and geographies and conforming to internationally accepted regulatory, technical and operational standard [11]. FSS 2020 is part of the overall vision 2020 programme of the Federal Government. According to the CBN/ FRN, the Nigeria financial system will be modelled to provide safety in order to mitigate the perception usually associated with emerging economies. Also the rate of growth of the economy will be measured by clearly defined parameters using the key emerging markets as initial benchmarks [11]. The key emerging markets are those collectively referred to as the BRICS countries and these are Brazil, Russia, India, China and South Africa.

The world is becoming a global village; and this is occasioned by advances in information, communication technology (ICT). Besides fax machine, internet, telephone and GSM, one invention by man that has revolutionised the method of business transaction globally is the online banking or the electronic payment (e-payment) system. E- Payment is a method or a unique system in which electronic software and hardware solution are configured to enable payment seamlessly either at a bank sales off site locations or other electronic channels of delivery. It is a paperless system of making payment and offers an alternative to the traditional system, which include the use of cash and cheques. The increasing level of economic activities in Nigeria, as well as advances in technology have continued to pose enormous challenges to the exiting payment instruments. These challenges are mostly associated with the high cost of maintaining and managing cash in the economy and which will be curtailed with online banking services.

Service quality dimensions

Service Quality/SERVQUAL happens to be recognised and extensively utilised in evaluating banking service quality. Customer service quality was linked to product assortment and the varied characteristics of the service outcomes. For Gan et al. [2], customer service quality was associated with the discrepancies amongst customers' anticipations of services providers' accomplishment and their assessment of the service they obtained. The service quality dimensions represent a bank client's total feeling of their automated banking service knowledge [2]. Choudhury [14] emphasizes the point that service quality is a multifaceted and multidimensional concept. The service quality dimensions recognised in this investigation are: reliability, assurance, responsiveness, tangibles, security, perceived risk and price.

Reliability: Zeithaml [22] discovered that the reliability dimension was a significant factor for customers who operated automated banking. Moreover, Liao and Cheung [23] concurred with Zeithaml [22] that reliability was definitely correlated to the application of automated banking. They argue that the extra guaranteed that customers recognised automated banking to be; the more probable they were to operate automated banking.

Assurance: Some researchers have revealed that assurance dimension of automated banking is vital to the consumers' acceptance of e-banking [23,24]. Additionally, Gerrard and Cunningham [25] established that the assurance dimension (like the confidentiality part that is connected with e-banking) was definitely linked to the practice of e-banking.

Responsiveness: As regards the responsiveness dimension, Karjaluoto, Mattila and Pento [26] exposed that e-banking consumers considered that e-banking responded quicker to their demands than erstwhile conventional methods of banking, for instance, the pace of bill payment through the internet. Moreover, Polatoglu and Ekin [24] classified immediate feedback, rapid transactions and stress-free access, as essential features in e-banking. Likewise, Liao and Cheung [23] and Gerrard and Cunningham [25] discovered that the transaction pace (the observed pace of response from e-banking) and the rapid access to e-banking accounts were significant qualities for customers operating e-banking.

Tangibles: The service quality aspect tangibles is described by whether the physical resources linked to the service are visually attractive at the bank. These are all features that clients observe prior to or upon arriving the bank. Such graphic features assist customers shape their early impressions. A critical task in service marketing is that consumers cannot observe a service but be able to appreciate the numerous tangibles related to service all these tangibles, the service capacities, device and contact resources are clues about the intangible service [14]. When improperly managed, these cues can convey to the consumers incorrect meanings about the service and make the marketing strategy of the firm unproductive [14]. Conversely, enhancing quality via tangibles requires care to the slightest details that challengers may contemplate unimportant. Nevertheless, these perceptible details can be comprehensible for consumers and communicate a message of caring and competence.

Perceived Risk: The literature on consumer behaviour generally places emphasis on risk as an important dimension of the consumer decisions. Thus, risk and need as two dimensions of consumer involvement have been the focus of attention. Risk assessments are mostly considered as being connected with unpleasant experiences that arise from unexpected or uncertain outcomes while buying products [27]. Risk and its correlation with involvement are crucial as the two constructs perform influential task as motivational and explanatory variables in consumer behaviour [28,29]. Customers identify more risks while purchasing

services than physical products. Zeithaml [22] recognised services as dicier than physical goods since services are impalpable, non-standardized, and often marketed with no guarantees or warrantees. Customers can hardly send back a service to the provider as they have previously used it, and others are so technical or specialized that customers have neither the wisdom nor the proficiency to assess whether they are satisfied, even after they have used the service [22]. This is known as credence quality [30,31].

E-banking is a technology-enabled outlet and customers observe the utilisation of e-banking as a precarious choice since technology-services present extensive technical, unacquainted and unclear stimuli [32]. Thus, once customers choose to practise e-banking, they are subjected to doubts like the accessibility, and the functioning of the corresponding e-banking outlets [33]. Observed risk is a vital component in the customer internet decision making process [34]. It concerns the likelihood of a failure and the personal emotion of unfavourable consequences [35]. Ho and Ng [36] and Lockett and Littler [37] empirically reinforce that the operation of e-banking embraces danger. Ho and Ng [36] advocated that customers noticed the reality of risk in attendance with the application of e-banking. Comparably, Lockett and Littler [37] recognised risk as a key feature of e-banking. The two sets of authors seemed to have borrowed ideas from Zeithaml [22]. In an aggregative analysis Gan et al. [2] found a negative association amongst perceived risk factors and customers' use of e-banking. But Safeena, Abdullah and Date [38] and Shafeei and Mirani [39] found a positive relationship. These diverse findings confirm the diverse nature of consumer involvement.

Price: Price factors imply that observed comparative commercial benefits will spur customers to operate e-banking [40]. As an instance, customers operating e-banking might lessen the fixed and variable costs that are connected with the banking practice, owing to reduction in subjective error and labour cost savings [2]. Recently the CBN put the cost of Ã¢Â‚Â¦0.65 per transaction on ATMs. This is in addition to the monthly bank charges per account Ã¢Â‚Â¦100 whether the card is used or not. It has been shown that for customers to deploy technologies, their costs required to be within reach when matched to substitutes [2]. Sathye [40] claimed that based on e-banking framework, two types of costs are apparent, the usual ones related to internet activities, then the bank costs and charges. Suganthi and Balachandran [1] acknowledged cost of computers and cost of internet access as costs associated with high technology banking. Sathye [40] argued further that such costs serve as deterrent to e-banking adoption. Gan et al. [3,15] show that price factor have positive impact on e-banking adoption and usage; while Suganthi and Balachandran [1] has opposing view.

Security: Electronic banking acceptance is related to customer's assessment of security [7]. 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 [23]. As regards transactions ran through an open network which could entail substantial amount, security – particularly concerning appropriate authorization and confidentiality would verge on that part of reliability that is of critical importance [41]. Empirical studies show that security factors/concerns are positively allied to consumers' acceptance of e-banking services [7,23]. Securities of the machines and customers as well as availability of constant power supply are issues of import more-so as ATMs proliferate in Nigeria. Other challenges facing ATMs/debit/card acceptance in Nigeria today include inadequate geographic spread of financial institution particularly in small towns, inadequate infrastructure, absence of public awareness, deficiency of interoperability 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 [18]. According to Olasanmi [10] 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.

Focused on the above literature review, the following hypotheses are formulated:
Ha1: There is a strong positive relationship between reliability and customer satisfaction with e-banking services.
Ha2: There is a strong positive relationship between assurance and customer satisfaction with e-banking services.
Ha3: There is a strong positive relationship between responsiveness and customer satisfaction with e-banking services.
Ha4: There is a strong negative relationship between perceived risk and customer satisfaction with e-banking services.
Ha5: Tangibles would have a significant attribute and positively influence consumers' satisfaction with e-banking services.
Ha6: Expected security of operations is a significant attribute and positively influence consumers' satisfaction with e-banking services.
Ha7: A lower price paid by consumers' will positively impact on consumers' customer satisfaction with e-banking services.

METHODOLOGY

This study adopted a quantitative approach. Quantitative research is naturally structured, hence empowers the researcher to examine the precise concepts and issues that are the focus of the study [42]. Another desirable attribute of this approach is that it allows minimal or no contact between the researcher and the subjects and therefore prevents researcher's objectivity from being compromised. Surveys are popular in such investigations and mostly involve greater amounts of comprehension on the part of the investigator. Galliers [43] notes that two key research viewpoints have been recognised in the practice of

science: positivist and interpretivist. The research methods associated with these approaches are known as quantitative and qualitative methods respectively. Of particular interest in this research is positivism which emphasizes objectivity and independence on the part of the researcher and often involves the manipulation of reality using independent variables.

Data for this study came from two main sources: secondary data which were sourced from already existing materials like journals, discussion papers, annual reports, government publication/bulletins, and text books; and primary data gathered through surveys, observations and experimentation primarily to resolve the particular problem under investigation [44]. Primary data were collected for this research through survey using SERVQUAL questionnaire and was based on a sample of 400 bank customers in Enugu, Nigeria. All the variables were measured using 7-point Likert scales: strongly agree to agree, to undecided to disagree and strongly disagree. Four demographic variables gender, age, education and ethnic background were some of the items captured in the questionnaire.

Attitude measures like the one used in this research as is common with all measures used in marketing must be both useful and accurate. Thus, an instrument has validity if it measures what it is supposed to measure. To ensure validity attempts were made by the researcher to ensure that the measurement reflected and represented the various dimensions of service quality: reliability, assurance, responsiveness, tangibles, security, perceived risk and price. Pearson correlation was also employed to check convergent validity. Reliability refers to consistency or stability of the measuring instrument in terms of providing results overtime. In other words, reliability could be described as the degree to which measures are free from random error and, therefore, provide consistent data [44]. Internal consistency reliability test was used in this research project because of its applicability to multiple-indicator measures [45] such as the 7-point Likert scale employed in SERVQUAL questionnaire for this study. Factor analysis testing were employed to assess internal consistency in relation with the multidimensional qualities. Data were collected through consumer opinion survey as regards the relationship between service quality dimensions and customer satisfaction with online banking of Nigerian banks at a specific period. Consequently, cross-sectional design was adopted in this study.

Data collected for this study were analysed using IBM SPSS statistics version 22. Factor analysis was employed for data reduction, that is, to reduce the items into the various variables after which multiple regressions were used to identify and test relationships among the dependent and independent variables.

DATA ANALYSIS AND RESULTS

This study was based on a sample of 400 bank customers in Enugu metropolitan urban city, Nigeria. Out of the sample 258 copies of questionnaire were returned giving a response rate of 64.5% response rate. The first information was on the descriptive statistics and data analysis started with the demographic variables (Table 1).

Table 1: Demographic characteristics of respondents

		Frequency	**Percent**	**Valid Percent**	**Cumulative Percent**
Gender	Male	111	43.0	43.0	43.0
	Female	147	57.0	57.0	100.0
	Total	258	100.0	100.0	
Age bracket	18-25 years	111	43.0	43.0	43.0
	26-35 years	72	27.9	27.9	70.9
	36-45 years	30	11.6	11.6	82.6
	46-55 years	45	17.4	17.4	100.0
	Total	258	100.0	100.0	
Ethnicity	Igbo	156	60.5	60.5	60.5
	Hausa/Fulani	15	5.8	5.8	66.3
	Yoruba	30	11.6	11.6	77.9
	Efik	6	2.3	2.3	80.2
	Others	51	19.8	19.8	100.0
	Total	258	100.0	100.0	
Education	primary/non-formal	3	1.2	1.2	1.2
	Secondary	63	24.4	24.4	25.6
	HND/BSc	165	64.0	64.0	89.5
	Postgraduate	27	10.5	10.5	100.0
	Total	258	100.0	100.0	

The mean and standard deviation of the demographic variables were: gender: 1.57; .496, age bracket: 2.03; 1.117, ethnicity: 2.15; 1.616, and education: 2.84; .609. The highest variation in the responses to the demographics was ethnicity followed by age bracket; and the reason for this was accessibility to the researcher; as the study was conducted in an Igbo culturally dominated area. Responses on education show that the respondents were educated enough to understand the import and significance of the study. The responses on the use of online banking products show that 93% use ATM/debit/Credit cards, 4.7% use telephone/GSM banking while the remaining 2.3% use internet banking. This is in line with KPMG [12] that majority of Nigerian online retail banking customers use only the ATM.

Factor analysis was employed to test for internal consistency and data reduction. Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was .743 which was well above the .5 benchmark [7] while the Bartlett's test of Sphericity Chi Square statistic is 969.743 and is highly statistically significant at .000 showing that the factor analysis was dependable and that the data merited further analysis. The list of communalities shows that all the 25 items used to measure the seven explanatory variables and one dependent variable all have loadings above the 0.4 benchmark [46]. Comparing this to the low Cronbach's alpha reliability scores show that no item/question need be removed. Hence, the internal consistency reliability analysis based on the factor analysis was more dependable than the Cronbach's alpha. The implication of this is that all the 25 items used in measuring the eight variables identified in the research were used in the further analysis/ hypotheses testing. Total variance explained was the percentage of variance explained and was a summary measure indicating how much of the original variance of all the eight variables the factor represents. Total variance explained by the eight variables was 70.862 which indicated a good scale. High total variance explained was an essential quality of good scale [46]. The percentage-of-variance explained statistic can be useful in evaluating and interpreting a factor.

Pearson correlations coefficient was used to test validity. Tangibles showed high correlation with responsiveness. There was also a moderately high correlation between price and perceived risk. Assurance variable has very and negative correlation with all other variables except perceived risk. All these indicate multicollinearity among the variables (Table 2).

Multiple regression (MR) analysis was employed for data analysis and to validate the hypotheses formulated. To use the MR however Hair et al. [47] state that four assumptions are necessary: linearity, homoscedasticity, independence of residuals and normality. While some of the assumptions are robust to violations others are not. Linearity was checked through regression plots between the dependent variable and each independent variable. An examination of residuals

shows no case of increasing or decreasing residuals which indicates homoscedasticity. Using the PP plot the values of the variables show no serious departure as the fall along the diagonal hence were found to meet assumption of normality. The preliminary analysis indicated multicollinearity among the variables and to address this, the stepwise method of MR was used in the analysis. Tolerance and variance inflation factor (VIF) were equally used to check multicollinearity. Three different correlations were given in evaluating the estimation process: zero-order is the correlation between the dependent and the independent variable; partial correlation refers to the predictive effect controlling for other variables in the regression model; while the part correlation is the unique effect attributable to each independent variable.

Table 2: Correlations

	Reliability	**Assurance**	**Tangibles**	**Responsiveness**	**Security**	**Perceived risk**	**Price**
Reliability	1						
Assurance	.173	1					
Tangibility	.013	-.074	1				
Responsiveness	.052	-.033	.866	1			
Security	.071	-.064	.292	.330	1		
Perceived risk	.012	.019	.458	.428	.482	1	
Price	.090	-.005	.552	.530	.445	.742	1

The stepwise method of regression analysis excluded three variables: reliability, assurance and responsiveness. The four variables that were used gave R2 of .544 which means that 54.4% of variations in the dependent variable are accounted for by the four variables: tangibles, security, perceived risk and price. The final 'F' statistic of 75.577 is significant at .000 and this means that the model has a good fit. Three variables: tangibles, security, and price were significant at .000 while perceived risk has ρ value of .001. Based on the correlations tangibles has the highest predictive power followed by price, security and perceived risk. Tolerance levels were below one for the four variables while variance inflation factor was below 5 threshold and based on this hypotheses 4 to 7 were fully validated. From the excluded variables, responsiveness has minimum tolerance

and ρ value of .096 thus hypothesis 3 was partially validated. Hypotheses 1 and 2 were rejected (Tables 3 and 4).

Table 3: Coefficients[a]

Model		**Unstandardized Coefficients**		**Standardized Coefficients**	**T**	**Sig.**	**Correlations**			**Collinearity Statistics**	
		B	**Std. Error**	**Beta**			**Zero-order**	**Partial**	**Part**	**Tolerance**	**VIF**
1	**(Constant)**	2.688E-18	.049		.000	1.000					
	Tangibles	.618	.049	.618	12.578	.000	.618	.618	.618	1.000	1.000
2	**(Constant)**	-8.403E-17	.046		.000	1.000					
	Tangibles	.435	.055	.435	7.867	.000	.618	.442	.363	.695	1.438
	Price	.332	.055	.332	6.006	.000	.572	.352	.277	.695	1.438
3	**(Constant)**	-1.602E-16	.043		.000	1.000					

	Tangibles	.454	.052	.454	8.739	.000	.618	.481	.378	.693	1.444
	Price	.450	.055	.450	8.106	.000	.572	.453	.350	.607	1.647
	Security	-.289	.048	-.289	-5.970	.000	.044	-.351	-.258	.799	1.252
4	**(Constant)**	-2.622E-16	.042		.000	1.000					
	Tangibility	.466	.051	.466	9.120	.000	.618	.497	.387	.689	1.452
	Price	.584	.068	.584	8.557	.000	.572	.474	.363	.386	2.591
	Security	-.249	.049	-.249	-5.075	.000	.044	-.304	-.215	.749	1.335
	Perceived risk	-.215	.066	-.215	-3.268	.001	.313	-.201	-.139	.418	2.393
a. Dependent Variable: Satisfaction											

Analysis and discussion

This has established that there is a strong negative relationship between perceived risk and customer satisfaction with e-banking services. Thus, the lower the customer's perception of risk the higher the tendency to use e-banking

services. This find agrees with Gan et al. [15] that found a negative association amongst perceived risk factors and customers' use of e-banking; but is at variance with Safeena, Abdullah and Date [38] and Shafeei and Mirani [39] which found a positive relationship. It is also established that responsiveness is positively related to online banking usage. Karjaluoto, Mattila and Pento [26] revealed that e-banking consumers considered that e-banking responded quicker to their demands than erstwhile conventional methods of banking, for instance, the pace of bill payment through the internet. Moreover, Polatoglu and Ekin [24] classified immediate feedback, rapid transactions and stress-free access, as essential features in e-banking. Likewise, Liao and Cheung [23] and Gerrard and Cunningham [25] discovered that the transaction pace (the observed pace of response from e-banking) and the rapid access to e-banking accounts were significant qualities for customers operating e-banking.

This study also found out that lower price paid by consumers will positively impact on consumers' customer satisfaction with e-banking services. This agrees with Gan et al. [3,15] which show that price factors have positive impact on electronic banking adoption and usage; disagrees with Suganthi and Balachandran [1]; and this diversity is attributed to the diverse environment of the research. It is also established in this study that security of operations will positively influence customers' satisfaction with e-banking usage. This agrees with e-banking acceptance as related to customer's assessment of security [15]. Liao and Cheung [23] stated that 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.

This study equally established that reliability and assurance were not significant in influencing customer satisfaction with online banking services. This disagrees with Liao and Cheung [23]. This is in line with Zeithaml [22] which discovered that the reliability dimension was a significant factor for customers who operated automated banking. Moreover, Liao and Cheung [23] concurred with Zeithaml [22] that reliability was definitely correlated to the application of automated banking. They decided that the extra guaranteed that customers recognised automated banking to be; the extra probable they were to operate automated banking. However, the hypothesis on tangibility was partially accepted as it shows a positive coefficient.

A critical task in service marketing is that consumers cannot observe a service but be able to appreciate the numerous tangibles related to service - all these tangibles, the service capacities, device and contact resources are clues about the intangible service [14]. When improperly managed, these cues can convey to the consumers incorrect meanings about the service and make the marketing strategy of the firm unproductive [14]. Conversely, enhancing quality via tangibles requires care to the slightest details that challengers may contemplate

unimportant. Nevertheless, these perceptible details can be comprehensible for consumers and communicate a message of caring and competence.

Table 4: Excluded Variables[a]

Model		**Beta In**	**T**	**Sig.**	**Partial Correlation**	**Collinearity Statistics**		
						Tolerance	**VIF**	**Minimum Tolerance**
1	Reliability	.023[b]	.462	.644	.029	1.000	1.000	1.000
	Assurance	-.045[b]	-.912	.363	-.057	.995	1.005	.995
	Responsiveness	.156[b]	1.589	.113	.099	.250	3.993	.250
	Security	-.149[b]	-2.949	.003	-.182	.915	1.093	.915
	Perceived risk	.038[b]	.682	.496	.043	.790	1.266	.790
	Price	.332[b]	6.006	.000	.352	.695	1.438	.695
2	Reliability	-.005[c]	-.100	.921	-.006	.990	1.010	.688
	Assurance	-.057[c]	-1.232	.219	-.077	.993	1.007	.690
	Responsiveness	.089[c]	.954	.341	.060	.247	4.055	.238
	Security	-.289[c]	-5.970	.000	-.351	.799	1.252	.607

	Perceived risk	-.298[c]	-4.469	.000	-.270	.446	2.244	.392
3	Reliability	.005[d]	.119	.905	.008	.989	1.011	.603
	Assurance	-.074[d]	-1.704	.090	-.107	.989	1.011	.605
	Responsiveness	.157[d]	1.794	.074	.112	.243	4.121	.237
	Perceived risk	-.215[d]	-3.268	.001	-.201	.418	2.393	.386
4	Reliability	-.008[e]	-.177	.860	-.011	.980	1.020	.381
	Assurance	-.066[e]	-1.544	.124	-.097	.985	1.015	.386
	Responsiveness	.144[e]	1.673	.096	.105	.242	4.130	.236
a. Dependent Variable: Satisfaction								
b. Predictors in the Model: (Constant), Tangibility								
c. Predictors in the Model: (Constant), Tangibility, Price								
d. Predictors in the Model: (Constant), Tangibility, Price, Security								
e. Predictors in the Model: (Constant), Tangibility, Price, Security, Perceived risk								

CONCLUSIONS AND IMPLICATIONS

Conclusions

This research has presented an insight into service quality dimensions and customer satisfaction with online banking services. By adapting and extending the service quality model this study has established the influence of security of operations, tangibility, perceived risk, responsiveness, assurance, price and reliability in enhancing customer satisfaction with online services of Nigerian banks. Security was included in the model and this was informed by the high incidence of ATM and related fraud within the Hi-Tech banking segment of the Nigerian banking system. The results of the statistical analysis show that the five out of the seven variables: price, security, perceived risk, responsiveness and assurance were significant in enhancing customer satisfaction with online services of Nigerian banks. The other two variables: reliability and tangibility were not significant but can be attributed to error. The results of the study show that higher levels of performance on the quality of service dimensions of assurance, reliability and responsiveness influence consumer involvement with high technology banking services. High consumer involvement was related to low perception of risk, and low price paid.

Implications

The rapid increase in number of automated delivery channels and customers' preference to use the online products because of multifaceted attributes are placing pressure on banks to respond aggressively to meet the customers' needs. The study provides necessary input to bank management to increase customers' involvement through improving service quality; lowering risk; and enhancing security of operations. This aspect should be augmented and integrated with other aspects of the service quality like e-readiness of banks for satisfaction of customers. The results of this study show that ATM usage is highest among the online services. Banks should develop strategies to motivate non-users through awareness, education, extending personalized services, and demonstrating the functions of Hi-Tech banking services. This is more so as the study has shown very high consumer preference among ATM users.

It is evident from the study that security of operations, perceived risk, price, and responsiveness significantly relate with customers' satisfaction with online banking services. Bank management should monitor the environment and identify the trends through marketing intelligence. They need to constantly up-date and differentiate their online service quality dimensions to ensure continuous satisfaction and retention of customers, and optimize their limited resources. Quick response to customers' needs and queries about the online

related services are important to improve the service standards of high technology banking. This would facilitate customers to participate in improvement of service quality, learn and perform, and have a pleasant experience through two-way communication. Bank should make a commitment to redress the service failures.

Security of operations is a variable added in the model for this study. There is no doubt that the possibilities and consequences of cybercrime are many and they threaten the survival of corporate organisations and even individuals. The growth of Nigeria's economy at large is at risk which is why the fears in some quarters that Nigeria will be subject to various vulnerabilities, especially cybercrimes, as the nation deploys ICT infrastructure to support her development. There is the need for the Central Bank of Nigeria (CBN), the Economic and Financial Crimes Commission (EFCC) and the Nigerian Information Technology Development Agency (NITDA) to work together and ensure that the anti-cyber law is made effective. This also calls for concerted efforts on Bio-metric ATM cards that will enhance security of high technology banking operations.

The results of this study show that ATM still dominates the online/high technology payment segment of the payments market in Nigeria. Others like the internet and telephone/GSM banking are still very low. To enhance the telephone/GSM banking, there is need for mobile number portability as this service is not available in Nigeria at present. There are about 12 million active accounts in Nigeria today [48]. There are about 146 million mobile telephone subscriptions as at June, 2015 [49]. This makes Nigeria a very huge market for mobile money/telephone/GSM banking. The cashless policy of the CBN is probably one policy that would require sheer grit to enforce and possibly a sustained media campaign as well as moral persuasion; hence there is need for sustained awareness at the grassroots because a lot of people are not completely sold on the idea at all for reasons bordering on the superfluous to the complex; as respondents opinion are as multiple as they are varied. Many believe it would take a lot of effort to steer the country on the path to a cashless economy because millions of people are yet to cultivate the banking habit. Nigeria with a population of about 80 million bankable adults and has about a paltry number of 12 million persons with bank accounts. Besides, banks are driving customers away with automated teller machine (ATM)-related fraud, exploitative charges and bad policies. You cannot have a cashless economy if so many people have no access to banking services. The irony is the ATM, which is the plank upon which this cashless policy stands, is not popular with the Nigerian banking public as many have dumped their ATM cards, some on the advice of their close friends working in the banks where they operate accounts.

The Nigerian economy is highly informal and driven by petty traders. With negligible internet penetration in the rural areas, problems of electronic security and epileptic power supply, the infrastructure to support the cashless economy is

still grossly inadequate. This explains the more why the CBN continues to postpone the full launch to the policy throughout the country. The cashless policy was supposed to go round the country by July 1, this year 2014 but has been adjusted for a year to allow the apex bank and other stake holders deploy more infrastructure. The cashless policy move, according to the CBN, is expected to reduce the amount of currency outside the banking system by discouraging the use of cash in financial transactions. The CBN has also said that the cashless policy would, in the long run, help bridge the gap between lending and deposit rates in the country. This would be achieved, when the cost of managing cash in the economy estimated at N192 billion by 2012 is curtailed. The CBN has listed robbery, high cost of processing cash, revenue leakages, inefficient treasury management, among others, as some of the reasons why the dominance of cash, put at over one trillion as at 2010, in the system [50]. It is also important that the CBN work closely with the Nigerian Communications Commission (NCC) to ensure that connectivity issues are addressed. For example, dedicated connectivity is necessary to be provided by the GSM service providers for all point of sale traffic. This should greatly increase the terminal uptime. Also, most terminals will be dual-SIM or roaming SIM, which will ensure fail-over options and guarantee a higher uptime. Power issues are also being addressed with relevant stakeholders. Ahead of the planned full implementation of the policy, the apex bank, in collaboration with the Electronic Payment Providers Association of Nigeria (E-EPAN) has since begun intensive face-toface awareness campaign at the grassroots in many parts of the country.

Limitations of the study

This study has a number of limitations. First, the study is limited by the instrument. The major instrument for primary data collection is the questionnaire. Further studies can employ interview and adopt a qualitative method to see if results are comparable. Though the suggestion of multiple methods is a recognition that it increases confidence in the results, the validity and versatility of the single instrument for this study is never in doubt and so the outcomes of the study. Second, administration of the questionnaire was solely offline. Combination of online approach would have augured well to meet randomization concept. Again, data used in this research were collected on cross-sectional basis. Further studies could be based on longitudinal collection of data. The choice of cross-sectional survey does not detract from the validity of the results of this study; only that the longitudinal approach is amenable to capturing trends. Demographic variables such as those used in this study are dynamic and would require continuous investigation to track changes. The prevailing economic conditions in Nigeria have made the consumers' price sensitive. This aspect needs further exploration as essential dimension affecting consumer satisfaction with high technology banking services.

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