

Electronic Commerce, Automation and Online Banking in Nigeria: Challenges and Benefits

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Abstract

Electronic banking has been around for some time in the form of automatic teller machines and telephone transactions but with the advent of internet, more publicity has been witnessed. This issue of internet has equally given a new look to their transactions and mode of product delivery in banking services for the benefits of both the customers and the banks. The objective of this paper is to find out the correlation between the anticipated benefits and challenges and encountered benefits and challenges. This paper therefore empirically, adopted the use of survey research to explore in quantitative terms the various benefits and challenges of e-business in the Nigerian banking and finance industry. It was found out that there is a statistically significant difference between the anticipated and encountered benefits and major challenge is the security breach that customers faced. It therefore recommends that some workshops should be organized for customers periodically on how to keep their data secret especially on how to combine numbers to form passwords. Also constant training of employees both local and international on new development in online trading should be encouraged.

Keywords:

E-commerce, Electronic banking, Automation, E-business, Banking, Finance industry.

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Introduction

E-banking is an umbrella term for the process by which a customer may perform banking transactions electronically without visiting a brick-and-mortar institution. The following terms all refer to one form or another of electronic banking: personal computer (PC) banking, internet banking, virtual banking, online banking, home banking, remote electronic banking, and phone banking. This also includes relatively mature electronically-based products in developing markets, such as credit cards, ATMs, and direct deposit and internet based and stored value products and electronic bill payments. In the developing countries e-banking is still in the early stages of development. Most banking in developing countries is still done in the conventional way. However, there is an increasing growth of online banking, indicating a promising future in the developing world and Nigeria banks are taking good advantage of it.

Nigerian banks started very low in the quest for the adoption for electronic banking but this slow pace, witnessed at the beginning of last decade, is fast changing for the better in terms of adoption of e-banking. Adeyemi (n.d.) posited that slow adoption of electronic banking practice is rapidly changing for the better. This assertion was supported by Ayo; Adebisi; Ekong & Fatudimu (2007) where they posited that with improved technological development and provision of basic infrastructure, e-commerce and e-payment services will improve significantly and this according to them, will lead to overall reduction in the amount of currency in circulation.

Awareness of electronic payments in Nigeria is increasing and it accounted for N360 billion worth of transaction in 2008 (Adeyemi, n.d.). Ayo et al. (2007), cited in Adesina & Ayo (2010), submitted that the revolution started in the Nigeria banking system in 2003 with the introduction of guideline of electronic banking by the central banking of Nigeria accompanied by bank reformation exercise in June 2004. The outcome of the reformation exercise left Nigeria with twenty four strong and reliable banks against eighty nine banks previously in existence. According to the author, the surviving banks that made the recapitalization exercise have enormously engaged the use of ICT as a platform for effective and efficient delivery of banking services. This has made Nigerian banking sector more competitive because customers are

now yearning for more online services that will cater for all their needs right from the rooms with their desktops, laptops, and palmtops and even from their handsets or desks in their various offices without necessary step into the banking hall. Global demand as a result of cash inflow into the economy has also been linked to this dramatic change in ICT embracement. Muniruddeen, (2007) cited in Adesina and Ayo (2010) corroborated these submissions that banks with huge investment in telecommunication networks and various e-banking services delivery could be seen as an effort towards measuring up to global standard. This can be seen in increased customer demand, increased competition among banks themselves; derived minimized cost, new entrants in the industry, and better service delivery to customers. Schaechter (2002) also submitted that electronic banking has enabled customers to compare banks services and products. It has also helped in increasing competition among banks allowing banks to penetrate new markets and thus expand their geographical reach. Customers in such countries can access services more easily from overseas banks and through wireless communication systems, which are developing more rapidly than traditional "wired" communication networks. Electronic banking has been seen as an opportunity for countries with underdeveloped financial systems to leverage upon in the development of their financial system.

Prior to the introduction of electronic banking in Nigeria in the 1990s masterminded by the new generation banks such as Intercontinental Bank, Zenith Bank, Guarantee Trust Bank and so on, financial services delivery was very poor. Customers had to spend hours in long queues in the banking hall to carry out transactions either to withdraw or deposit cash into their account. This was the era of manual processing of transactions. The old generation banks such as United Bank of Africa, First Bank of Nigeria and Union Bank of Nigeria saw themselves as lords in the financial service industry. Since they dictated the pace in the banking industry and controlled markets with many products and services, customers had no choice than to patronize them. With the emergence of internet and electronic banking, customers' expectations in financial services delivery are yet to be met. Therefore, this paper is supposed to look at the various benefits and challenges that were anticipated before the advent of internet banking (that is, in those days when there were long queues and spending of hours in the banking hall to

carry out transactions either to withdraw or to deposit cash into your account) vis-a-vis the encountered benefits and challenges after the advent of online banking. This was the result of the existing gap between actual and expected financial services delivery to customers.

The objective is to find out the correlation between the two pairs of the variables measured, that is the anticipated challenges and benefits with encountered challenges and benefits. With the development of e-commerce and online banking in developing countries, it still needs to receive any significant attention among researchers, and so echoes the general lack of information systems research in sub-Saharan Africa (Mbarika, Okoli, Byrd & Datta, 2004). Hence it serves as a reason to apply this research. This paper is divided into five sections. Section one is the introduction, section two captures the literature review, section three looks at the methodology, while four and five end the paper with discussion of findings, conclusion and recommendation.

Literature Review

The concept of e-banking includes all types of banking activities performed through electronic networks. It is the most recent delivery channel of banking services which is used for both business-to-business (B2B) and business-to-customer (B2C) transactions (Mohammad, 2009). The definition of e-banking varies among researchers partially because electronic banking refers to several types of services through which bank customers can request information and carry out most retail banking services via computer, television or mobile phone (Daniel 1999; Molls 1998; Sathye, 1999). Burr (1996) describes e-banking as an electronic connection between the bank and customer in order to prepare, manage and control financial transactions while Leow, Hock Bee (1999) states that the terms Personal Computer (PC) banking, online banking, Internet banking, telephone banking or mobile banking refers to a number of ways in which customer can access their banks without having to be physically present at the bank branch. Therefore, e-banking covers all these ways of banking business electronically (Mohammad, 2009). The discovery of internet and what we called electronic commerce have opened various opportunities for online trading all over the world. It has brought the market close to the customers and potential customers at a

relatively low cost. In fact, online purchase reduces cost compared to physical visiting a shop for purchase. This has opened the market of the developed countries to the entire world. Also, financial institutions being the finance for the economy have been the champion of this crusade where their customers, borrowers of funds, cut across various countries. Adesina and Ayo (2000) disclosed that the advent of internet, electronic commerce, communication technology and users' responses to this technology have provided opportunities for many businesses including the financial institution. Before this period, there were just a few dial-up e-mail providers in Nigeria before 1998; a couple of Internet Service Providers (ISPs) that operated on slow links. For years, Nigerian Telecommunications (Nitel), the parastatal monopoly, dominated the whole Nigeria telecommunications market. E-commerce in Nigeria is just at the beginning stage. From the convenient places like their homes or offices, these days most banks offer internet banking services which enable the customers to conduct banking transactions online. Today the majority of the Nigerian banks offer online, real-time banking services.

The area of e-commerce that has developed mostly in Nigeria is e-banking. A few banks started the ATM Consortium in 2003 to set up ATMs across the country. Nigeria is far behind other countries in providing technology at an affordable cost to its population. Adesina and Ayo (2010) also maintained that the adoption of electronic banking service delivery is fast gaining ground in Nigeria. Different e-banking channels such as electronic cards, internet banking and mobile banking services have been introduced. Pikkarainen et al. (2004) highlighted two major reasons underlying online banking development and penetration. First, banks get significant cost savings in their operation through e-banking services and secondly, that banks have reduced their branch networks and downsized the number of service staff. It was also indicated that electronic banking services delivery are the cheapest, the most profitable and wealthiest delivery channel for banking products. Internet banking services are crucial for long-term survival of banks in the world of electronic commerce (Burnham 1996). The market for internet banking is forecast to grow sharply in the next few years, affecting the competitive advantage enjoyed by traditional branch banks (Duclaux 1996; Liao, Shao & Chen, 1999). It was also argued that internet banking would help banks present a potentially low cost alternative to brick and

mortar branch banking (Margaret & Thompson 2000). Nigeria Directory, Onwuka (2006) cited in Francis & Babatunde (2009) posited that with a population over 150 million that is growing at three percent annually, Nigeria has witnessed an increased demand for improved service delivery and convenience by consumers. Banks can provide improved service delivery and convenience by enhancing their value networks through online banking (Sannes, 2001; Crane & Bodie, 1996). Francis and Babajide (2009) therefore submitted that some banks in Nigeria, among other facets of the economy, have taken advantage of the country's ICT infrastructure to improve services to customers.

Benefits of E-Commerce

The uptake of e-commerce is influenced by its potential to create business value and by the awareness of its participants of the potential benefits (Salnoske, 1997). A major reason for most companies, irrespective of their size, to participate in business is to extract some benefit from it. E-commerce is no different (Joze, Julie & Angela, 2002). The authors went further to identify and classify the benefits of e-commerce into tangible and intangible benefits. This paper therefore considers the benefits relevant to this area. The benefits are presented in Table 1.

Table 1. Adapted from Joze, Julie & Angela (2002)

Benefits	Research/Literature
Tangible Benefits	
Business Efficiency	(Fraser et al. 2000; Lee 2001; Riggins, 1999) Amrit (2007)
Increased Automation of Processes	(Fraser et al. 2000; Dan et al, 2001).
Transformation of Traditional Market Chain	(Fraser et al. 2000), Amrit (2007)
Retained and Expanded Customer Base	(Fraser et al. 2000; Rahul, Biju and Abraham 2001; Turban, et al, 2000).
Reduced Operation	costs (Kent and Lee, 1999; Grover and Ramanlal, 2000; Kare-Silver, 1998; Fergusson, 1999).
Acquisition of a Niche Market	(Riggins, 1999; Rahul et al. 2001)
Intangible Benefits	
Enhancing Well-being and Education of Customers	(Whinston et al. 1997; Lee 2001), Amrit (2007)
Consumer Loyalty	(Lee 2001; Hoffman et al. 1999; Coulson, 1999)
Competitive Advantage	(Kalakota et al. 1999; Hoffman et al. 1999; Straub, 2000; Kare-Silver, 1998), Amrit (2007)
Convenient Shopping	(Hannon, 1998; Winner, 1997)

Challenge of E-Commerce

For e-banking it is important to overcome the e-commerce inhibitors and challenges in order to deliver the benefits mentioned above (Joze, Julie & Angela, 2002). The challenges of e-banking in Nigeria are enormous. These include: insecurity; inadequate operational facilities like telecommunication and electric supply (Ezeoha, 2005; Chiemeka et al., 2006). Further challenges that e-banking is facing in Nigeria are presented in the Table 2.

Table 2. Adapted from (Joze, Julie & Angela, 2002)

Challenges	Research/Literature
Technological challenges	
Security	(Koved et al. 2001; Czerniawska & Potter, 1998; Alexander, 1998, Chaechter, 2002)
Website Issues	(Watson et al. 1999; Zhang & von Dran 2000; Lee 2001)
Technology Issues Including Costs, Software, Infrastructure	(Hoffman et al. 1999; Abeyesekera et al. 1999; Rahul et al. 2001, Chaechter 2002)
Managerial Challenges	
People and Organizational Issues	(Hoffman et al. 1999; Feeny 2000)
Obtaining Senior Management Backing	(Feeny 2000)
Business Challenges	
Customer Service	(Whinston et al. 1997; Alter, 1999; Lee 2001)
Customers' Old Habits	(Hoffman et al. 1999; Schwartz, 1999)
Legal Issues	(Hoffman et al. 1999; Lawrence et al. 1998; de Souza & von Wiese 2000), Chaechte, (2002)

Prior Studies on Benefits and Challenges of Online Banking

A previous study of Joze, Julie & Angela (2002) showed that the major benefits of e-commerce adoption not anticipated by the sector are business, efficiency, improved image, competitive advantage, increased automation of processes and increased business turnover. Also, the key challenges identified for the sector are the costs of the technology, the lack of knowledge of e-commerce, managing the change, budgeting and issues associated with linking back end systems. They did not consider secure transactions as a major challenge for the sector; on the contrary, they were considered one of the success factors.

Pohjola (2002) also submitted that the contribution of the use of

information communication technology to output growth in the Finnish market sector has increased from 0.3 percentage points in early 1990s to 0.7 points in late 1990s. Similarly, research conducted in Estonia (Aarma and Vensel, 2001), posited that bank customers use bank office services on average 1.235 times per month, and wait in queue in bank office on average for 0.134 hours. Simple calculation shows that making payments via e-banking facilities (for instance using internet bank) rather than in the bank offices create overall economy savings in the amount of 0.93% of GDP and average distance to nearest bank office is 4.14 km which takes approximately 0.21 hours to travel (Aarma and Vensel, 2001). BankAway (2001) and Gurău (2002) also considered the benefit from the customer's point of view that there is a reduction in costs of accessing and using the banking services, increased comfort and timesaving. When it comes to the issue of online banking, transactions can be made 24 hours a day without requiring the physical interaction with the bank. The quick and continuous access to information and the ability to check on multiple accounts at the click of a button and better cash management are all benefits that online banking has brought to bear in this dispensation.

The benefits of online banking is however further supported by the report of Booz, Allen & Hamilton (1996) that an estimated cost of providing the routine business of a full service branch in USA is \$1.07 per transaction, as compared to 54 cents for telephone banking (Nathan, 1999; Pyun et al., 2002). Moreover, in Nordea Bank, Finland, one online transaction costs the bank an average of just 11 cents, compared to \$1 for a transaction in the branch and an average payment in internet bank or via direct debit cost 4 times less, than payment in branch (Echikson, 2001). It was further argued that on actual cost side (or cost side from the bank point of view), average direct debit payment cost 16 times less and payment in internet bank 7 times less, than payment in branch (Echikson, 2001). But with the benefits also come challenges. Amrit (2007) looked at the issues of risk management, infrastructure development and policy formulation as the three major challenges of e-banking. It further looked at the problem of technology like connection break in service while withdrawing cash from ATM, poor mobile service, inadequate level of infrastructure and human capacity building as major challenges to full-fledged e-banking. Mohammad (2009) however classified the challenges

and risks of e-banking into operational risks (e.g. security risks, system design, implementation and maintenance risks); customer misuse of products and services risks; legal risks (e.g. without proper legal support, money laundering may be influenced); strategic risks; reputation risks (e.g. in case the bank fails to provide secure and trouble free e-banking services, this will cause reputation risk); credit risks; market risks; and liquidity risks. But in Nigeria the major impediments to the smooth running of this concept is power, level of literacy and lack of adequate regulations in the system. However, the factors listed above must be given adequate attention if e-banking is to survive in any economy particularly in Nigeria.

Methodology

The research was carried out in the banking industry in Nigeria based on a sample of three deposit money banks in Nigeria. The research was designed in such a way that data was generated from the questionnaires personally administered to the staffs of the respective banks with a high response rate of 90%. The sample size of this research constitutes three Nigerian banks. They include: Oceanic Bank, UBA Bank and Intercontinental Bank. The three sample banks are two old generation banks and one new generation bank. The total number of 120 questionnaires was administered, 40 for each sample company. These banks were selected using judgmental sampling technique in order to have a representation of the population. Krejcie & Morgan (1970) in Amadii (2005) agrees with the sample as they proposed the population proportion of 0.05 as adequate to provide the maximum sample size required for generalization. The banks were selected because of their size and wide range of products which are all over the country. To the best of the researcher's judgment, the banks make a good representation of the banking industry in Nigeria. The expert opinion was sought for in order to validate the content and the structure of the questionnaire during the pilot study.

For testing the hypothesis, a statistical parametric test called Pair Sample t-test was employed to test the significance difference between the pre and post of online banking in Nigeria through the use of SPSS statistical package. Our intention is to establish if there is any significant difference between the anticipated benefits and challenges and encountered

benefits and challenges of online banking in Nigeria.

Statement of Hypotheses

H₀: There is no significant difference between the anticipated and encountered benefits of online banking in the Nigerian Banking system

H₀: There is no significant difference between the anticipated and encountered challenges of online banking in the Nigerian Banking system

Decision Rule

Reject H₀ if P value is < .05 and accept H₀ if P value is > .05

Empirical Results and Implication of Findings

Expected/Encountered Benefit of Online Banking in Nigeria

Table 3. Paired Samples Statistics

	Mean	N	Std. Deviation	Std. Error Mean
Pair 1 INTURNEXP	3.67	90	.474	.050
INCTURNENC	3.56	90	.500	.053
Pair 2 INCBUSACTEXP	3.50	90	.503	.053
INCBUSACTENC	3.39	90	.594	.063
Pair 3 COMPADVEXP	2.94	90	.916	.097
COMPADENC	3.22	90	.715	.075
Pair 4 OPCOSTREDEXP	3.06	90	.853	.090
OPCOSTREDENC	2.94	90	.784	.083
Pair 5 EXPCUSTBASE	3.39	90	.682	.072
CUSTBASEEXENC	3.56	90	.500	.053
Pair 6 LOYALTYEXP	3.28	90	.561	.059
LOYALTYENC	3.06	90	.407	.043
Pair 7 REDWATIMEXP	3.39	90	.831	.088
REDWATIMENC	2.94	90	.625	.066
Pair 8 BETTUNDEXP	3.11	90	.661	.070
BETTUNDENC	3.11	90	.461	.049
Pair 9 INCNTWOKEXP	2.89	90	.880	.093
INCNTWOKENC	3.11	90	.941	.099
Pair 10 POSIMAGEEXP	3.39	90	.594	.063
POSIMAGEENC	3.28	90	.561	.059

Source: Computer Printout of Researchers' Survey

Table 4. Paired Samples Test

		Paired Differences					T	Df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	INTURNEXP – INCTURNENC	.111	.570	.060	-.008	.230	1.850	89	.068
Pair 2	INCBUSACTEXP – INCBUSACTENC	.111	.661	.070	-.027	.250	1.595	89	.114
Pair 3	COMPADVEXP – COMPADENC	-.278	.735	.077	-.432	-.124	-3.586	89	.001
Pair 4	OPCOSTREDEXP – OPCOSTREDENC	.111	1.249	.132	-.151	.373	.844	89	.401
Pair 5	EXPCUSTBASE – CUSTBASEEXENC	-.167	.691	.073	-.311	-.022	-2.288	89	.025
Pair 6	LOYALTYEXP – LOYALTYENC	.222	.632	.067	.090	.355	3.335	89	.001
Pair 7	REDWATIMEXP – REDWATIMENC	.444	1.072	.113	.220	.669	3.934	89	.000
Pair 8	BETTUNDEXP – BETTUNDENC	.000	.887	.093	-.186	.186	.000	89	1.000
Pair 9	INCNTWOKEXP – INCNTWOKENC	-.222	1.322	.139	-.499	.055	-1.595	89	.114
Pair 10	POSIMAGEEXP – POSIMAGEENC	.111	.741	.078	-.044	.266	1.422	89	.158

Source: Computer Printout of Researchers' Survey

Expected/Encountered Challenges of Online Banking

Table 5. Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	HCOSTECHEXP	3.33	90	.750	.079
	HCOSTECHENC	3.61	90	.490	.052
Pair 2	LECOMMKNWEXP	2.83	90	.503	.053
	LECOMMKNWENC	3.06	90	.709	.075
Pair 3	ITSKCOSTEXP	2.83	90	.963	.101
	ITSKCOSTENC	2.83	90	.838	.088
Pair 4	ECOMMINFRCHEXP	2.83	90	.503	.053
	ECOMMINFRCHENC	2.83	90	.604	.064
Pair 5	RESTOMANTELEXP	2.83	90	.963	.101
	RESTOMANTELENC	3.28	90	.561	.059
Pair 6	GETRELVENEXP	3.11	90	.570	.060
	GETRELVENENC	3.06	90	.709	.075
Pair 7	SECBREACHEXP	2.94	90	.527	.056
	SECBREACHENC	3.22	90	.632	.067
Pair 8	RESTTONLBANEXP	2.56	90	.602	.063
	RESTTONLBANENC	2.61	90	.831	.088
Pair 9	INACEORURPEXP	2.94	90	.709	.075
	INACEORURPENC	2.94	90	.625	.066
Pair 10	NONCAPOFDATEXP	2.44	90	.689	.073
	NONCAPOFDATENC	2.78	90	.858	.090
Pair 11	MAKBUZKNTCUSTEXP	2.50	90	.963	.101
	MAKBUZKNTCUSTENC	3.22	90	.715	.075
Pair 12	UNRELOFINTPROEXP	3.11	90	.661	.070
	UNRELOFINTPROENC	2.89	90	.570	.060
Pair 13	LAKOFPROBUDGTEXP	3.11	90	.570	.060
	LAKOFPROBUDGTENC	3.17	90	.691	.073
Pair 14	POWAFAILEXP	3.06	90	.625	.066
	POWAFAILENC	2.94	90	1.085	.114

Table 6. Paired Samples Test

			Paired Differences				T	df	Sig. (2-tailed)	
			Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
						Lower				Upper
Pair 1	HCOSTECHEXP HCOSTECHENC	-	-.278	.874	.092	-.461	-.095	-3.014	89	.003
Pair 2	LECOMMKNWEXP LECOMMKNWENC	-	-.222	.790	.083	-.388	-.057	-2.668	89	.009
Pair 3	ITSKCOSTEXP ITSKCOSTENC	-	.000	1.341	.141	-.281	.281	.000	89	1.000
Pair 4	ECOMMINFRCHEXP ECOMMINFRCHENC	-	.000	.581	.061	-.122	.122	.000	89	1.000
Pair 5	RESTOMANTELEXP RESTOMANTELENC	-	-.444	1.219	.128	-.700	-.189	-3.459	89	.001
Pair 6	GETRELVENEXP GETRELVENENC	-	.056	1.032	.109	-.161	.272	.511	89	.611
Pair 7	SECBREACHEXP SECBREACHENC	-	-.278	.561	.059	-.395	-.160	-4.694	89	.000
Pair 8	RESTTONLBANEXP RESTTONLBANENC	-	-.056	.976	.103	-.260	.149	-.540	89	.590
Pair 9	INACEORURPEXP INACEORURPENC	-	.000	1.060	.112	-.222	.222	.000	89	1.000
Pair 10	NONCAPOFDATEXP NONCAPOFDATENC	-	-.333	.821	.087	-.505	-.161	-3.851	89	.000
Pair 11	MAKBUZKNTCUSTEXP MAKBUZKNTCUSTENC	-	-.722	1.290	.136	-.992	-.452	-5.312	89	.000
Pair 12	UNRELOFINTPROEXP UNRELOFINTPROENC	-	.222	1.089	.115	-.006	.450	1.936	89	.056
Pair 13	LAKOFPROBUDGTEXP LAKOFPROBUDGTENC	-	-.056	.625	.066	-.186	.075	-.844	89	.401
Pair 14	POWAFAILEXP POWAFAILENC	-	.111	1.293	.136	-.160	.382	.815	89	.417

Computer Printout of Researchers' Survey

Discussion of Empirical Results

Table 3 and Table 4 explain the expected and encountered benefits of online banking in Nigeria. The Table 3 and Table 4 show a significant difference in the scores for: Competitive advantage expected (COMPADVEXP) (M=2.94, S.D=.916) and competitive advantage encountered (M=3.22, S.D=.715) conditions; $t(89)$, $p(.001)$. Expansion in customer base expected (EXCUSTBASE) (M=3.39, S.D=.682) and expansion in customer base encountered ((M=3.56, S.D=.500) conditions; $t(89)$, $p(.025)$. Loyalty from customers expected (LOYALEXP) (M=3.28, S.D=.561) and Loyalty from customer encountered (LOYALTYENC) (M=3.06, S.D= .407) conditions; $t(89)$, $p(.001)$. Expected waiting time reduction (M=3.39, S.D= .831) and waiting time reduction encountered (M=2.94, S.D= .625) conditions; $t(89)$, $p(.000)$.

However, there is no significant difference in the mean scores for: increase in turnover expected (INTURNEXP) (M=3.67, S.D=.474) and increase in turnover encountered (INCTURNENC) (M=3.56, S.D=.500) conditions; $t(89)$, $p(.068)$. Anticipated increase in bank branches network (INCNTWOKEXP) (M=2.89, S.D= .880) and encountered increase in bank branches network (INCNTWOKENC) (M=3.11, S.D= .941) conditions; $t(89)$, $p(.114)$. Positive image anticipated (POSIMAGEEXP) (M=3.39, S.D= .594) and positive image encountered (M=3.28, S.D= .561) conditions; $t(89)$, $p(.158)$. Rise in understanding of activities by employees expected (BETTUNDEXP) (M=3.11, S.D= .880) and rise in understanding of employees encountered (BETTUNDENC) (M=3.11, S.D= .941) conditions; $t(89)$, $p(1.00)$. Efficient increase in business activities expected (INCBUSACTEXP) (M=3.5, S.D= .503) and efficient increase in business activities encountered (INCBUSACTENC) (M=3.39, S.D=.594) conditions; $t(89)$, $p(.114)$. Reduction in operation cost expected (OPCOSTREDEXP) (M=3.06, S.D=.853) and reduction in operation cost encountered (OPCOSTREDENC) (M=2.94, S.D=.784) conditions; $t(89)$, $p(.401)$.

From the descriptive statistical results in Table 3 and 4 above, it was observed that there is a significant difference in the scores of the means of anticipated benefits and the encountered benefits. Therefore, we can conclude that the differences between condition means are not due to chance. This means that there is a difference between the benefits that

online banking was expected to provide for the sector and what is being experienced presently in the sector regarding banks competitive advantage, expansion in customer base, customer loyalty and waiting time in the banking hall. There was however no significant difference in terms of efficient business activities, reduction in the operation cost, increase in turnover, increase in branch network, the bank positive image and better understanding of bank activities.

A paired-samples t-test was conducted in Table 4 to compare: the increase in turnover expected (INTURNEXP) and increase in turnover encountered (INCTURNENC); $p(.068)$. Competitive advantage expected (COMPADVEXP) and competitive advantage encountered; $p(.001)$. Expansion in customer base expected (EXCUSTBASE) and expansion in customer base encountered; $p(.025)$. Loyalty anticipated from customers (LOYALEXP) and Loyalty from customer encountered (LOYALTYENC) $p(.001)$. Expected waiting time reduction and waiting time reduction encountered $p(.000)$.

These values are less than .05 level of significance. It then concludes that there is a statistically significant difference between the means of the expected benefits and the anticipated benefits. Therefore, we accept the alternative hypothesis which says there is a statistically significant difference between the anticipated and encountered benefits of online banking in the Nigerian banking system.

A paired-samples t test was also conducted in Table 4 to compare: the anticipated increase in bank branches network (INCNTWOKEXP) and encountered increase in bank branches network (INCNTWOKENC); $p(.114)$. Positive image anticipated (POSIMAGEEXP) and positive image encountered (POSIMAGEENC) $p(.158)$. Rise in understanding of activities by employees expected (BETTUNDEXP) and rise in understanding of employees encountered (BETTUNDENC) $p(1.00)$. Efficient increase in business activities expected (INCBUSACTEXP) and efficient increase in business activities encountered (INCBUSACTENC); $p(.114)$. Reduction in operation cost expected (OPCOSTREDEXP) and reduction in operation cost encountered (OPCOSTREDENC) $p(.401)$.

These values are greater than .05 level of significance; as a result of this, it concludes that there is no statistically significant difference between the means of the expected benefits and the anticipated benefits. Therefore,

we accept the null hypothesis which says there is no statistically significant difference between the anticipated and encountered benefits of online banking in the Nigerian banking system.

Table 5 and Table 6 explain the expected and encountered challenges of online banking in Nigeria. Table 3 shows a significant difference in their scores: anticipated high technology cost (HCOSTECHEXP) (M=3.33, S.D=.750) and high technology cost encountered (HCOSTECHENC) (M=3.61, S.D=.490) conditions; $t(89)$, $p(.003)$. Lack of e-commerce knowledge expected (LECOMMKWNEXP) (M=2.83, S.D=.503) and lack of e-commerce knowledge encountered (LECOMMKWNEC) (M=3.06, S.D=.709) conditions; $t(89)$, $p(.009)$. Anticipated fear of resisting change from manual to electronic (RESTOMANTELEXP) (M=2.83, S.D=.963) and fear of resisting change from manual to electronic encountered (RESTOMANTELENC) (M=3.28, S.D=.561) conditions; $t(89)$, $p(.001)$. Fear of security breach expected (SECBREACHEXP) (M=2.94, S.D=.527) and fear of security breach encountered (SECBREACHENC) (M=3.22, S.D=.632) conditions; $t(89)$, $p(.000)$. Non-capturing of customer data in the site expected (NONCAPOFDATEXP) (M=2.44, S.D=.689) and non-capturing of customer data in the site encountered (NONCAPOFDATENC) (M=2.78, S.D=.858) conditions; $t(89)$, $p(.000)$. Making business known to customers expected (MAKBUZKNTCUSTEXP) (M=2.50, S.D=.963) and making business known to customers encountered (MAKBUZKNTCUSTENC) (M=3.22, S.D=.715) conditions; $t(89)$, $p(.000)$.

However, the following variables show no significant difference in their scores: Constraint of budgeting expected (LAKOFPROBUDGTEXP) (M=3.11, S.D=.570) and Constraint of budgeting encountered (LAKOFPROBUDGTENC) (M=3.17, S.D=.691) conditions; $t(89)$, $p(.401)$. Effect of power failure expected (POWAFIALEXP) (M=3.06, S.D=.625) and effect of power failure encountered (POWAFIALENC) (M=2.94, S.D=1.085) conditions; $t(89)$, $p(.417)$. Cost of acquiring IT skill expected (ITSKCOSTEXP) (M=2.83, S.D=.963) and cost of acquiring IT skill encountered (ITSKCOSTENC) (M=2.83, S.D=.838) conditions; $t(89)$, $p(1.000)$. Lack of e-commerce infrastructure expected (ECOMMINFRCHEXP) (M=2.83, S.D=.503) and Lack of ecommerce infrastructure encountered ((ECOMMINFRCHENC) (M=2.83, S.D=.604) conditions; $t(89)$, $p(1.000)$. Getting reliable vendor expected (GETRELVENEXP) (M=3.11,

S.D=.570) and getting reliable vendor encountered (GETRELVENENC) (M=3.06, S.D=.709) conditions; $t(89)$, $p(.611)$. Resistance to online banking expected (RESTONLBANEXP) (M=2.56, S.D=.602) and Resistance to online banking encountered (RESTONLBANENC) (M=2.61, S.D=.831) conditions; $t(89)$, $p(.590)$. Unreliability of internet providers expected (UNRELOFINTPROEXP) (M=3.11, S.D=.661) and unreliability of internet providers encountered (UNRELOFINTPROENC) (M=2.89, S.D=.570) conditions; $t(89)$, $p(.056)$. Inaccessibility of rural people expected (INACEORURPEXP) (M=2.94, S.D=.709) and inaccessibility of rural people encountered (INACEORURPENC) (M=2.94, S.D=.625) conditions; $t(89)$, $p(1.000)$.

A paired-samples t-test was also conducted in Table 6 to compare: anticipated high technology cost (HCOSTECHEXP) and high technology cost encountered (HCOSTECHENC) $p(.003)$. Lack of e-commerce knowledge expected (LECOMMKNWEXP) and lack of e-commerce encountered (LECOMMKNWENC) $p(.009)$. Anticipated fear of resisting change from manual to electronic expected (RESTOMANTELEXP) and fear of resisting change from manual to electronic encountered (RESTOMANTELENC) $p(.001)$. Fear of security breach expected (SECBREACHEXP) and fear of security breach encountered (SECBREACHENC) $p(.000)$. Non-capturing of customer data in the site expected (NONCAPOFDATEXP) and non-capturing of customer data in the site encountered (NONCAPOFDATENC) $p(.000)$. Making business known to customers expected (MAKBUZKNTCUSTEXP) and making business known to customers encountered (MAKBUZKNTCUSTENC) $p(.000)$.

These values are less than .05 level of significance, we can therefore conclude that there is a statistically significant difference between the means of the expected challenges and the encountered challenges. Therefore, we accept the alternative hypothesis which says there is a statistically significant difference between the anticipated and encountered challenges of online banking in the Nigerian banking system.

However, the following variables in Table 6 show no significant difference in their scores: Constraint of budgeting expected (LAKOFPROBUDGTEXP) and Constraint of budgeting encountered (LAKOFPROBUDGTENC) $p(.401)$. Effect of power failure

(POWAFAILXP) and effect of power failure (POWAFAILNC) p(.417). Cost of acquiring IT skill expected (ITSKOSTEXP) and cost of acquiring IT skill encountered (ITSKOSTENC) p(1.000). Lack of e-commerce infrastructure expected (ECOMMINFRCHXP) and lack of e-commerce infrastructure encountered ((ECOMMINFRCHNC) p(1.000). Getting reliable vendor expected (GETRELVENEXP) and getting reliable vendor encountered (GETRELVENENC) p(.611). Resistance to online banking expected (RESTTONLBANEXP) and resistance to online banking encountered (RESTTONLBANENC) p(.590). Unreliability of internet providers expected (UNRELOFINTPROEXP) and unreliability of internet providers encountered (UNRELOFINTPROENC) p(.056). Inaccessibility of rural people expected (INACEORURPEXP) and inaccessibility of rural people encountered (INACEORURPENC) p(1.000).

These values are greater than .05 level of significance, we can therefore conclude that there is no statistically significant difference between the means of the expected challenges and the anticipated challenges. Therefore, we accept the null hypothesis which says there is no statistically significant difference between the anticipated and encountered challenges of online banking in the Nigerian banking system.

Implication of Findings

Even though there is a positive correlation between the variables under this category, Table 3 shows a high hope of benefits expected from the online banking are not being experienced as thought before the advent of online banking. First the high expectation could be due to what online banking has brought to bear in the developed nations where it has recorded huge success. This might have influenced the decision of the various players in the sector not minding other impending factor(s) peculiar to the country. Secondly, the old nature of performing business in Nigeria, for example, the waiting time in the banking hall has not reduced to the level desired compared to the developed world and the level of computer literacy in the country could also be responsible.

The result in Table 4 above showed no significant different among the variables tested. For example, the increase in the network of bank expected before online banking has been like that till date. Similarly the banks studied in this paper, have increased greatly in term of sizes due to the introduction of online banking. The reduction in the operating cost could

be linked to the deployment of a chain of computers. This has cut down manual activities where the service of a human is needed. Also the efficient increase in business activities could be linked to various training and re-training courses being carried out numerously and over time by various banks for their staff. This, of course, has helped a great deal.

Conclusion and Recommendations

In spite of the benefits of electronic commerce, automation and online banking such as increase in bank branches network, reduction in operation cost among others; the paper identified some benefits such as lack of e-commerce knowledge, fear of resistance to change from manual to electronic, security breach, non-capturing of customer data in total, unreliability of internet providers, making business known to customers through the net and inaccessibility of the rural people to online banking and power failure as obstacles to full implementation of electronic commerce, automation and online banking in Nigeria. To tap into the full benefits and potentials of electronic banking and e-commerce, the operators and the business at large must understand and be aware of the benefits and challenges of electronic trading.

Recommendations

Notwithstanding the challenges highlighted above, we proffer the following recommendations:

- i. Operators should impress it upon employees the need to be responsive to online banking.
- ii. Constant training of employees both local and international on new development in online trading.
- iii. Workshops should be organized for customers periodically on how to keep their data secret especially on how to combine numbers to form passwords. They should also be vigilant about who stand next to them when using ATMs.
- iv. Even though it is impossible now to consider the dearth of infrastructural facilities in Nigeria, a base could be provided where neighboring villages can access online banking if it is impossible to situate internet facility in each village in the country.

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