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Orunsolu A.A, Bamgboye O.O. & **Alaran M.A**
Department of Computer Science
Moshood Abiola Polytechnic
Abeokuta, Nigeria
orunsoluabdul@yahoo.com

Aina-David O.O
[2]Department of Business Studies
Moshood Abiola Polytechnic
Abeokuta, Nigeria

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Strategies for Effective Adoption of Electronic Banking In Nigeria

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ABSTRACT
A major trend in modern industrial and commercial systems is the integration of electronic services into different levels of business operations. This has resulted into an explosion in the global exchange of monetary value of products and services electronically. The continued upward trend in this electronic revolution is dependents on a number of factors. The aim of this research is to investigate the factors which influence the adoption of e-banking in Nigeria. The research is particularly timely and urgent considering the new cashless regime of the Nigeria Apex Bank. Key factors impacting e-banking adoptions are identified from the literature review. The research is structured into research survey using questionnaire, online responses from social websites and face-to-face interviews. The research results provide a foundation for the need for an enhanced adoption of e-banking strategy and for the practical development of e-banking products.

Keywords: E-Commerce, Adoption factors, E-payment systems, E-banking, Drivers

1. INTRODUCTION

The advent of internet has caused profound technological innovations in the delivery of personal and business services. The birth of electronic commerce is as a result of the development of internet. Electronic banking is built upon efficient e-commerce and e-payment services. Globally, the introductions of e-commerce and e-payment services have injected over US$7trillion into monetary value of products and services (Sanders 2000). As e-commerce plays prominent roles in the implementation of most business operations, the financial sectors in both developed and emerging economy like Nigeria enjoy unparallel patronage of e-commerce products and services. On the management side, e-commerce enables business and financial houses to reduce telecommunication costs, minimize warehousing expenses, encourages extensive market penetration, global presence, and cut down the distribution chain (Mallat 2007). On the customers' side, the attractions include convenience, queue avoidance, time compression, flexibility, personalized services and 24h×7 service availability. These benefits are great cause of attractions especially for banking sectors which forms the cornerstone of all business transactions.

It is evident that banks and other financial institutions are embracing e-banking. In the developed economy, the rate of adoption presents a geometric growth due to adequate infrastructural support, legal legislation and large representation of formal sector in the economy. In Africa, e-banking penetration presents a promising future (Au and Kauffman 2008).

For example, in Nigeria the value of card transactions stand at US$1.2 million in a week (www.punchng.com). In addition, the Central Bank of Nigeria projected the deployment of 150,000 POS terminals and ATM points from the current number of 5300 across the country to boost the penetration of financial e-services. Since Nigeria is one of the fastest growing IT markets in Sub-Sahara Africa, the deployment of extensive e-banking is urgent to facilitate the maximum benefit of telecommunication revolution and to reduce the handling cost of cash-based transaction.

However, findings from previous studies suggest that the economic distribution of Nigeria business environment is largely informal. In addition, investigation by one of the electronic payment initiative in Africa (Card Technology Today, 2008) indicates that only 20% of families in Africa have bank accounts. These figures present a challenging platform for e-transaction initiatives as majority of the population are 'unbanked'

The objective of this study is to explore customer adoption of e-banking by detecting the adoption determinants and strategies that are relevant for the effectiveness of retail banking in Nigeria's Cashless Regime. The adoption strategies are based on the results and implication of data obtained through the administration of questionnaire, online feedbacks from a social network website and face-to-face interview. In addition, the study identifies some emerging issues which provide useful information for all the stakeholders in the e-banking initiatives

2. RELATED WORKS

The wider patronage of e-commerce services provides reasons for extensive research ranging from security of transactions to acceptability and effectiveness of e-commerce solutions. Electronic banking has emerged as one of the most vibrant aspects of e-commerce where banks are turning to IT to improve business efficiency, service quality (Kannabiran and Narayan, 2005), supporting growth, promoting innovation and enhancing competitiveness (Gupta, 2008). The E-banking experience has become an important channel to sell products and services and is perceived to be necessity in order to stay profitable and successful in the new financial world (Christopher et al. 2006).

Gikandi and Bloor (2010) investigated the adoption and effectiveness of retail banking in Kenya. The authors noted that there is explosive growth of e-banking adoption especially in the area of ATM. The study identified the drivers and emerging issues necessary for increased adoption of e-banking solutions. Ayo (2006) examined the prospects of e-commerce based on ability, motivation and opportunities model.

The author submitted that virtually all companies have online presence and that motivation and opportunities for e-commerce is low based on lack of e-payment infrastructure and access to ICT facilitates.

The work of Mahdi and Mehrdad (2010) used chi-square to determine the impact of e-banking from the view points of customers in an emerging economy. The authors specifically considered the case of Iranian banks to determine the level of customers' satisfaction with particular reference to the use of e-banking. Agboola (2006) studied the impact of electronic payment systems and tele-banking services in Nigeria. The author revealed that there is enormous potential for tele-banking if attendant barriers identified in the research were taken care of. Similarly, Nwaolisa and Kasie (2011) investigated user acceptability and payment problems in electronic retail payment systems in Nigeria. The study examined the contribution of electronic retail payment in the elimination of inherent problems with payment process in Nigeria by using secondary and primary sources of data.

In a related research, Zulu (2006) examined the challenges to e-payment system in Africa. The study identified inadequate communication infrastructure, low internet bandwidth, frequent power interruption, lack of proper legal and regulatory framework and low level of credits access as some of the challenges militating against the survival of e-payment solution in Africa.

Adeoti and Oshotimehin (2011) investigated the factors influencing the decision to adopt Point of Sale terminals by customers. The study identified ease of use, availability, convenience and nativity as some of the factors motivating adoption. The security of transactions and complexity of the PoS technology were identified as areas that need improvement to drive customers' interest.

On the security aspects, Ayo and Ukpere (2010) proposed the design of unified e-payment system to reduce the number of ATM cards carried by customers with more than one account. The authors submitted that such unified e-payment solution would reduce identity theft if coupled with biometric-based cash dispenser. Similarly, Yang J (2009) investigated online payment and e-commerce security as the foundation condition with which e-commerce can smoothly develop. The study identified validity of information, non-repudiation of information, authenticity of transaction status, reliability of the system and integrity of information as some of the e-commerce security elements. In addition, Kim (2010) investigated the empirical study of customers' perceptions of security and trust in e-payment systems. The study proposed a conceptual model that delineates the determinants of customers' perceived security and perceived trust, as well as their effects on the use of e-payment systems. The work provided a theoretical foundation for security aspects of e-payment system.

2.1 PAYMENT SYSTEMS IN E-BANKING

E-banking is built on efficient e-payment systems. The survival of e-banking is a function of usability, convenience, complexity and security of e-payment systems. As e-banking becomes a major driver of financial industry operations, different e-payment methods have been devised. In general, five e-payment methods can be identified (Guan and Hua, 2003, Dai and Grundy, 2007, Schneider, 2007), which are discussed below:

1. Debit cards: This is one of the most widely and acceptable form of e-banking payment system. A customer maintains a valid account is issued a debit card which makes automatic deduction from the account when a debit transaction is performed. It is the most common e-banking products used by Nigerians owing to convenience, queue avoidance, and ease of use.
2. Credit cards: This involves an irreducibly complex transaction –structure (Hsieh 2001) which is inappropriate for small-value transaction. A server authenticates the credit card holder and verifies with the creditor (Bank) whether adequate funds are available for the transaction. Complexity, transaction charges and privacy are key issues in credit card transaction
3. Pre-paid card: This is issued for a particular value by a particular merchant and is frequently used in store transactions (Kim, 2010). This payment method is characterized by ease of use and convenience.
4. Electronic cash: This is a method of payment where a unique identification is associated with a specific amount of money and transactions are settled via the exchange of electronic currency. This method is mostly popular for internet purchases of goods and services.
5. Electronic checks: This method makes it possible for an institution to settle transaction between the buyer's bank and the seller's bank electronically.

Debit cards, otherwise called ATM cards are still the most common e-banking product used by most Nigerians. Credits cards are gaining popularity especially among the core formal sector employees and employers in settling internet payment of goods and services. However, most Nigerians have low awareness of the difference between credit and debit cards. The complexity of credit card system, Electronic cash and Electronic checks demands a lot of attention and awareness in order to give Nigerians a wider platform of e-banking solutions.

3.0 MATERIALS AND METHODS

The objective of this study is to explore the adoption factors for extensive penetration of e-banking in Nigeria and also to identify the barriers to such adoption. A three-stage measurement assessment was used in investigating the research question. The first stage is conducted through a review of relevant literature (Gefen et al. 2000). In stage two, a set of sampled variables from the population consisting of gender differences, education level, types of organization and other related items are identified. Stage three proceeds to data collection using questionnaire, online responses for social websites and face-to-face questions session. The questionnaire has two sections covering personal details, types of organization, perceived security in E-commerce, E-commerce use and technical support. Pilot survey was conducted to ascertain that the questionnaire was adequate in content. The efficiency of the questionnaire method was further investigated with face-to-face interviews of sample population.

The research questions were further investigated using online social network (Figure 1). Questions bordering on e-banking security, awareness level and technical supports were posted on social network for visitors to answer. The questions were structured in a simple manner to motivate and generate visitors' interest. To improve the response rate, comments are made on some social website users' wall on their posting while soliciting their supports for voting on the research questions. In terms of age, 56.1% of participants were under 25 years, 24.4. % between 25 and 35 years, 16.3% between 35 and 45 years and 3.2% above 45 years.

The composition of the sample could limit the generalizations of the results. However, Lin and Lu (2000) argued that results obtained from the analysis of this type of sample can still reflect true phenomena and provide significant outcomes because young and middle-aged population are the most important strata for a technological driven-research like e-commerce. Hence, the sample can be regarded as being representative of the whole population of prospective e-banking target population now or in future.

Fig 1: Sample Online responses from a social network website

4. DISCUSSIONS OF FINDINGS & IMPLICATIONS

Table 1 shows the results from data analysis on drivers and barriers to e-banking adoption in Nigeria based on participants' responses. The items were ranked in order of importance ranging from 1, which represented the least importance to 5 representing items of extreme importance as contributor (+) or inhibitor (-).

Table 1: Ranking of E-banking contributing items

Contributing items	Contributor (+)	Inhibitor (-)
Queue Avoidance	5	1
Convenience	5	1
Automatic availability	4	1
Customers' trust	3	3
Complexity of e-transaction	2	3
Security of e-transaction	2	4
E-banking legislation support	3	4
Internet infrastructure in Nigeria	2	4
Local dialect based e-services	4	1
Exactness of payment bills	5	1
Transaction error and e-service failure	2	5

All the respondents in the survey considered queue avoidance, convenience and time compression as drivers of extreme importance for e-banking initiatives based on their present experiences with the automatic teller machine. This is consistent with the finding of Mohamed and Didi (2005), Adeoti and Oshotimehin (2011). The desire to carry out transaction at any time of the day has attracted the attention of both formal and informal sector to e-services. In addition, the high risk associated with cash-based transaction in interstate business trips has reduced significantly because more Nigerians are patronizing the electronic service option. However, more than 75% of the core informal sector comprising of market women, small stores owners and petty traders do not consider these advantages because of low awareness and perceived complexity associated with electronic services. The submissions of more than 91% of the respondents showed that this trend could be reversed with the availability of local languages on PoS and ATM facilities.

Poor internet penetration, low level of computer education, high illiteracy level and technological factors were identified by more than 60% of the respondents as likely barriers to e-banking initiatives. This is consistent with the works of Gikandi and Bloor (2010) and Zulu (2010) where the author identified internet infrastructures as a major challenge for banks and customers in e-banking adoption.

Lack of legal regulation is seen by 67% of the sample population as a barriers to e-banking initiatives. This is expected as in the case of Nigeria where prolong legal litigation is common. The problem of who takes the liability in case of cash lost should form the core part of the legislation as majority of the respondents holds the reservation that bankruptcy rate will be high in e-banking regime. The submission of one of the social network participants provides a good direction for solution in this regard. The participant commented that e-banking will work in Nigeria if banks that liability of any transaction lost through e-banking and that customer should only bears liability in case of cash lost. This is an important motivation for e-banking adoption in Nigeria.

Security of transaction on e-banking platform features prominently in the submissions of more than 95% of the respondents as a contributing factor. More than 60% of the respondents submitted that they have had negative experience with ATM. This a negative indicator for the future of e-banking initiatives as most of the respondents see the current password regime on Debit cards as largely inadequate.

This is supported by Gupta (2001), Aladwani (2001) and Hwang (2003) who cited security and customer related issues as contributors of extreme importance. In addition, the Gartner Group reports that 95% of customers in e-banking platforms in developed economy are somewhat concerned with security and privacy arising from the use of e-payment services (Kim et al. 2010). Similarly, previous research proposes that perceived security and trusts contributed significantly to electronic commerce success (Siau et al. 2003; Xu and Gutierrez, 2006).

From the discussion and table 1, a survival quotient is modeled as:

> 1 (e-banking growth indicator)
= 0 (equilibrium of e-banking and cash-based transaction)
< 0 (e-banking collapse indicator)

Therefore, the success or failure of is largely determined by the ability to minimize the composite effect of (and to maximize the . The implication of this survival quotient is given in table 2 considering the description and expectations of major contributing factors from the survey

Table 2: Emerging implications of e-banking initiative in Nigeria

Emerging patterns	Description	Expectation
Vagueness of transaction	Lack of transaction record, receipt, documentation and error in payment transaction. Device and network reliability is common concern because of likely failure in the middle of transaction	Offer customers sufficient payment documentation; communicate the implications of errors in transaction procedures and possible solutions. Upgrade of service and network connectivity. Free toll-calls for customers' complaints
Security of transaction	Increase the customers' trust in electronic banking services. Authentication, confidentiality and privacy are issues of great concern in e-banking adoption	Customers will continue to patronize e-banking services that guarantee security. This will continue as a challenge of extreme importance.
E-banking awareness	Benefits of e-banking in terms of safety, efficient documentation of transaction, simplicity and openness. Clear implications of errors in transaction procedures need to be explicitly stated.	Awareness will progressively continue as a driver of extreme importance especially among the core informal sector
Legal regulation	Regulations on e-banking with emphases on financial operators as chief security of e-based transactions so much that customers will only fear cash lost in case of non-e-banking transaction. Regulations of B2B and B2C need to be explicitly implemented	The government is expected to provide the legal and constitutional framework for banks and customers.
Technological Complexity	Degree to which innovation is perceived as difficult to understand and use. Sophisticated format of operation and machine design will continue to be a major challenge to e-banking adoption for Nigeria with largely representation of core informal sector.	Availability of local dialect on e-banking solution not excluding ATM programming and PoS. Simpler and faster transaction procedures. The use of colored codes on machine will complement identification and usability for prospective uneducated users

5. CONCLUSIONS

This paper evaluates the adoption strategies for the effectiveness of e-banking initiatives in Nigeria for sustainable cashless regime. Past studies were reviewed for the development of questionnaire used in the research. The study captures the drivers and barriers to e-banking adoptions as well as the implication of the study on the future fortunes of e-banking initiatives. Although the research has come up with some significant findings from the viewpoint of customers' adoption, it does not consider factors such as competitive forces within the financial sectors, specific e-payment functions, intra and inter-banking transactions etc.

Despite this limitation, the research constitutes an important stepping stone for future research as it unearths customers' perception of cashless regime. It also provides the foundation for future research by extending the findings of the present study to more general research questions that guide future research on the adoption of e-banking initiatives, services, solutions, products and technologies.

With the exponential expansion of internet technology, extensive investment in infrastructural development and increasing popularity of e-commerce, e-banking may become an important part of an individual's life. Thus, banks should design efficient strategies with great emphasis on enhanced security of transaction, increased customers awareness, simplification of e-transaction and indigenization of e-banking solution to reflect the local content in order to keep and get more customers in an increasing competitive financial business environment.

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