

AN EMPIRICAL INVESTIGATION OF THE LEVEL OF USERS' ACCEPTANCE OF E-BANKING IN NIGERIA: BASED ON TECHNOLOGY ACCEPTANCE MODEL

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ABSTRACT

Nigeria was depicted to be the fastest growing telecommunications nation in African. Presently, all the members of the Nigeria banking industry have engaged the use of Information and Communication Technology (ICT) as a platform for effective and efficient means of conducting financial transactions. The paper focuses on determining the level of users' acceptance of the electronic banking services and investigating the factors that determine users' behavioral intentions to use electronic banking systems in Nigeria.

The survey instrument employed involved design and administration of a total of 200 survey questionnaires within the Lagos metropolis and its environs. An extended Technology Acceptance Model (TAM) was developed as a conceptual framework to analyze the factors influencing users' acceptance and intention to use electronic banking. The model employed Perceived Credibility (PC) and Computer Self-Efficacy (CSE) as extensions to the two constructs for TAM model: Perceived Usefulness (PU), Perceived Ease of Use (PEOU) to better reflects the users' views.

The result of this research shows that banks customers who are active users of e-banking system use it because it's convenient, easy to use, saves time and meet their transaction needs. Also the network security and the security of the system in terms of privacy are concerns of the users and constitute hindrance for intending users.

Keyword: Technology Acceptance Model (TAM), perceived credibility, computer self-efficacy, and e-banking.

1. INTRODUCTION

The advents of the Internet, electronic commerce, application communication technology and users' response to this technology have opened opportunities for many businesses, including financial institutions. Today, banks are currently amongst the largest beneficiaries of electronic commerce technology. In Nigeria, electronic banking became prominent after the Central Bank of Nigeria banking reformation exercise in June 2004, which was geared towards reducing the number of banks in the country and making the emerging banks much stronger and reliable [5].

The surviving banks after the reformation exercise have been able to catch up with global developments and now operate with better service delivery. Coupled with huge investment on technology and widely adopted telecommunication networks, the banks offer a

wide range of e-Banking services for effective and efficient of banking services.

One could consider the banks effort and their huge investment in electronic services as a measure to meet up with the global standard, reduce transaction cost, provide better services to customers and promote efficiency. While e-banking services are numerous in number, there is not enough evidence of its acceptance among consumer. However, for us to accept that e-banking has fully gained prominence in Nigeria, customers' acceptance and confidence in the system need to be validated. A finding indicated that half of the people that have tried e-banking services will not become active users of the system [7]. Ezeoha [5] discussed the hindrances to online banking in Nigeria among which is security threat.

This study aims at examining the factors that may influence users' acceptance of e-banking. The impact of perceived usefulness (PU),

perceived ease of use (PEOU), perceived credibility (PC) and computer self-efficacy (CSE) is sought to determine the level of users' acceptance of the various e-banking services. Presently, each participating bank in the Nigerian banking industry offers at a minimum one form of electronic services that can be categorized as e-Banking, internet banking and m-Banking [2]. The rest of this paper is arranged as follows: section two presents the literature review on technology acceptance model. Section three presents the research model and hypothesis, section four presents the research instrument and section five presents the data analysis and result.

2. LITERATURE REVIEW

Technology Acceptance Model (TAM) is an information system theory that models how users come to accept and use a technology. TAM proposed by Davis [4] is an extension of Theory of Reasoned Action (TRA) and the Theory of Planned Behaviour (TPB). The Technology Acceptance Model posits two theoretical constructs; perceived usefulness (PU) and perceived ease of use (PEOU) as fundamental determinants of user's acceptance of an information system.

TAM [4] posits that user's acceptance of a new information system is determined by his intention to use the system which is in turn determined by the two behavioural beliefs; perceived usefulness perceived ease of use. Much research had been conducted using TAM and it has become the most widely accepted model among information system researchers [7].

Many research works had been conducted using TAM and introducing other variables which are validated as having impact on usefulness, ease of use, users' acceptance and intention [6, 7, 10]. Davis [4] sited that future research on technology acceptance should address the impact of other variables on usefulness, ease of use and user acceptance and intention.

Validity of TAM can be increased by exploring the nature and specific influences of technological and usage-context factors that may affect user's acceptance. For instance, Hanudin [6] concluded that credibility is the heart of Internet banking system and found computer self-efficacy as a major influence on perceived ease of use.

Therefore, perceived ease of use and perceived usefulness alone may not fully determine the user's intention to adopt electronic banking, thus the need to examine additional factors that may better predict the acceptance of electronic banking. Computer self-efficacy, perceived credibility (security and privacy), perceived risk, quality of Internet connection, and perceived enjoyment among others are external variables that have been introduced into TAM in extending its validity on examining user's acceptance of online banking, Internet banking, e-commerce and Internet usage.

3. RESEARCH MODEL AND HYPOTHESES

Extended TAM is being widely used and proven model of investigating user's adoption of information systems. This extension refers to the introduction of external variables and measuring their impact on the acceptance to use an information system. Extended TAM is adopted as the theoretical framework to examine the intention to use electronic banking.

In the context of electronic banking, Muniruddeen [7] extended TAM to examine individual's perceived security and privacy of Internet banking in Malaysia. Siu-Cheung and Ming-te [9] also extended the model with Subjective Norm and Social Cognitive Theory (self-efficacy) by Bandura [3] to explain the intention to use Internet banking in Hong Kong.

The proposed research model in this study is shown in Figure 1 below. The extended TAM includes external variables "perceived credibility" and "computer self-efficacy".

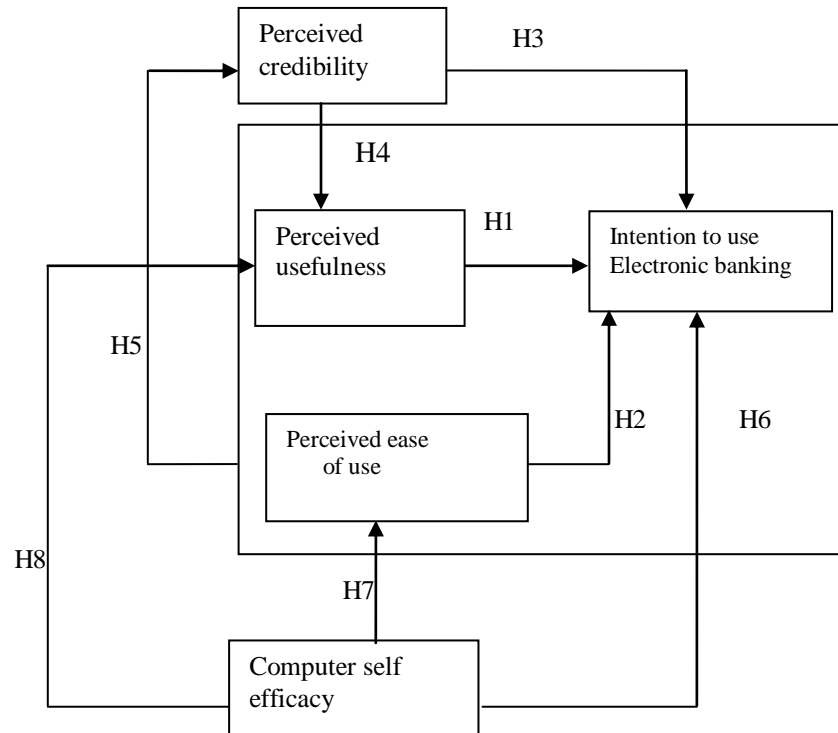


Figure 1: Research Model and hypothesis

i. Perceived usefulness and perceived ease of use

TAM posits that PU is a significant factor affecting acceptance of an information system [4]. People tend to use an application to the extent they believe it will aid their performance. Davis defined PU as “the degree to which a person believes that using a particular system would enhance his or her job performance”. Similarly, according to TAM perceived ease of use (PEOU) is a major factor that affects acceptance of information system. PEOU is defined as “the degree to which a person believes that using a particular system would be free of effort” [4]. Hence an application perceived to be easier to use than another is more likely to be accepted by users. By applying these into electronic banking context we hypothesize that:

H1. Perceived usefulness (PU) has a positive effect on consumer acceptance of electronic banking.

H2. Perceived ease of use (PEOU) has a positive effect on consumer acceptance of electronic banking.

ii. Perceived Credibility

According to Hanudin [6], perceived credibility is a determinant of behavioural intention to use an information system. Perceived credibility consists of two important elements: privacy and security. Security refers to the protection of information or systems from unauthorized intrusions [6]. Fear of inadequate security is one of the factors that have been identified as impediments to the growth and development of e-commerce including for electronic banking adoption [7].

For the purpose of this research, “perceived credibility” (PC) is defined as user’s perception of protection of their transaction details and personal data against unauthorized access. PC is about personal belief that a user has in the system to carry out a transaction securely and maintain the privacy of personal information. Perceived credibility is also believed to have significant affect on perceived ease of use and perceived usefulness [6, 7, 8]. Therefore, for studying the effect of perceived credibility on user’s acceptance in Nigeria electronic banking services, we pose the following hypotheses to determine it on user’s intention.

H3: perceived credibility has positive effect on customer’s intention to use electronic banking.

H4: perceived credibility has positive effect on perceived usefulness.

H5: perceived ease of use has positive effect on perceived credibility.

iii. Computer Self efficacy

The importance of perceived ease of use is supported by Bandura who defined self efficacy as “judgments of how well one can execute courses of action required to deal with prospective situations” [2]. Self-efficacy beliefs are theorized to function as proximal determinants of behavior.

The proposed relationship between computer self-efficacy and perceived ease of use is based on the theoretical argument by Davis [4]. Studies have also shown that there exists empirical evidence of a causal link between computer self-efficacy and perceived ease of use [6]. Hanudin [6] in his research found that computer self-efficacy had a positive effect on both perceived usefulness and perceived ease of use on Internet banking among young intellectual in Malaysia. Thus, in order to further determine factors affecting users’ acceptance of electronic banking in Nigeria, the following hypotheses:

H6: Computer self-efficacy has a positive effect on intention to use of electronic banking systems.

H7: Computer self-efficacy has a positive effect on perceived ease of use of the electronic banking systems.

H8: Computer self-efficacy has a negative effect on perceived usefulness of the electronic banking systems.

4. RESEARCH INSTRUMENT

Questionnaire was the survey instrument used in this research. The research design was divided into two parts. The first part consists of demographic profile and the Internet usage of the respondent. Part two consist of 30 questions; 6 questions on perceived ease of use, 7 questions on perceived usefulness, 8 questions on perceived credibility 6 questions on computer self-efficacy and 3 questions on intention to use. The participants were asked to indicate their perception on a likert scales (1- 5) with response ranging from “strongly disagree” to “strongly agree”. The collected data were analyzed based on descriptive statistics using the statistical package for social sciences (SPSS).

5. DATA ANALYSIS AND INTERPRETATION RESULT

One hundred and fifty (150) questionnaires were analyzed. 60 of the respondents are females while 78 are males. Table1 shows the demographic profile of the respondents based on their gender, age and occupation. 98 of the respondents which account for 65.3 percent have B.Sc/HND qualifications.

Table 2 shows the analysis of the technology usage of the respondents. It was observed that despite high level of use of computer and availability of internet both at home and work place, very low percentage (18.7) of the respondents mostly conducts online banking transaction besides the use of ATM machine. 74 percent of the 92.7 percent that respond to be using e-banking system are only at the level of use of ATM machine

Table 1: Gender, Age and Educational Background of Respondents

Gender			
		Frequency	percent
Valid	Male	78	52.0
	Female	60	40.0
	Total	138	92.0
Missing	System	12	8.0
Total		150	150

Educational Background			
		Frequency	percent
Valid	Undergraduate	8	5.0
	HND/B.Sc	98	65.3
	Post Graduate	30	20
	Total	136	90.6
Missing	System	14	9.3
Total		150	150

Age			
		Frequency	percent
Valid	< 20	16	10.6
	21 – 30	91	60.7
	31 – 40	28	18.7
	41 – 50	5	3.0
	Total	140	93.3
Missing	System	10	6.6
Total		150	150

Table 2 Technology usage

	percent
I use computer at home	84.0
use a computer at work	66.7
I have internet connection at home	42.7
I have internet connection at working place	69.3
I use computer at other location e.g. Cybercafé	81.3
My mobile phone has internet facility	46.7
I use automated teller machine of e-banking	74.0
I use WAP (mobile phone) for e-banking	12.0
I mostly conduct banking transactions online	18.7
I mostly conduct banking transaction at the bank	77.3
I use internet several times a day	60.7

Hypothesis Testing

The result of the hypothesis testing using Pearson chi square indicates that perceived useful, perceived ease of use, perceived credibility and computer self-efficacy are significantly associated with behavioral intention. This analysis indicates that perceived usefulness has the highest significance of consumer's intention to use to use e-banking system. This result is consistent with previous studies which showed that perceived usefulness has a significant relationship on intention to use information system (IS). H1 is accepted at 0.01 significant level ($X^2 = 47.157$, Asymp. Sig = .003)

H2 is confirmed. It indicates that perceived ease of use has a significant effect on intention to use. H2 is significant at 5% and 1% level with ($X^2 = 29.381$). H3 is also supported at 1% significant level, which indicated that perceived credibility has a positive effect on consumer's intention ($X^2 = 46.481$, Asymp. Sig = 0.016). To further determine the factors responsible for consumers intention to use hypothesis H6 is also confirmed and accepted at both 5% and 1% significant level ($X^2 = 35.838$, Asymp. Sig = 0.147)

H4 is confirmed which indicates that perceived credibility has a positive effect on perceived usefulness. The hypothesis is significant at 5% and 1% level ($X^2 = 21.568$, Asymp. Sig = 0.158). On the contrary, H8 is not supported. Result of this analysis shows that computer self-efficacy has no significant effect on perceived usefulness. Therefore, it is concluded that computer self efficacy is not a determinant of perceived usefulness.

H5 is also confirmed. We conclude that ease of use has a positive effect on perceived credibility. The hypothesis is accepted at 1% and 5% significant level ($X^2 = 22.904$, Asymp. Sig = 0.0116). Likewise, H7 is also confirmed. We conclude that computer self-efficacy has a significant effect on perceived ease of use of an information system. H7 is accepted at 1% significant level ($X^2 = 27.992$, Asymp. Sig = 0.032).

CONCLUSION

This paper has provided an awareness of the factors determining users' acceptance of information systems using e-banking as the focus. By extending TAM, the authors have been able to support the argument by other

researchers who claimed that perceived usefulness and perceives ease of use is not sufficient to determine the consumer's behavioral intention to use information system.

Perceived credibility and computer self-efficacy were selected as additional factors to TAM construct because of their potent influence to the use electronic system in a nation with high level of corruption and low literate level. The result of the statistical analysis showed that all the four factors use to access users' acceptance of e-banking have influence on the acceptance of the system. This is based on the response from both current and potential users of e-banking system.

The result of this study clearly reflects that users find e-banking system useful, convenient, and easy to use. Perceived usefulness is the critical factor in explaining users' adoption of e-banking. Credibility of the system is a major concern for both users and intending users and should be given more attention. Privacy of data and security of communication over the network are security issues that border the minds of users.

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SURVEY QUESTIONS

Perceived ease of use

My interaction with e-banking system is clear and understandable
I find e-banking system flexible to interact with
Learning to use e-banking system is easy
It would be easy for me to become skillful at using the e-banking systems
Using e-banking systems requires mental effort
I believe e-banking systems will be difficult to use

Perceived usefulness

Using e-banking services has increased my productivity
Using e-banking enables me to utilize banking services more quickly
Using e-banking improves my performance of utilizing banking services
e-banking solutions are useful for all banking services I needed
Using e-banking makes banking transaction easier for me
Using e-banking gives me control over my banking transactions
Using e-banking makes my financial transaction to be more efficient

Perceived credibility

Using e-banking facilities is financially secure
I trust the security measure of e-banking technology
I trust the ability of e-banking systems to protect my privacy
I feel safe using credit card and releasing its information to the bank
The bank provide secure communication to secure all transactions between client and the bank
I am not worried about the security of e-banking
Security issues has no influence on using e-banking
The bank provide authorization and authentication to validate user's identity

Self Efficacy

I would be confident in using e-banking:

Even if there is no one around to show me how to use it
Only if have prior knowledge of how to operate the system
Only if I have seen someone else using it before I try it myself
If someone will assist me to get started
If I had first gone through a lesson on how to use it
If I can call on someone to assist if I get struck

Intention to use e-banking solutions

I am interested in using e-banking in the future
I am committed to begin to use e-banking solution
I will strongly recommend e-banking for all bank customers



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