

**AN EMPIRICAL INVESTIGATION INTO FACTORS
INFLUENCING THE ADOPTION OF INTERNET BANKING
AMONG UNDERGRADUATE STUDENTS IN NIGERIA.**

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ABSTRACT

This study investigated the factors influencing the adoption of internet banking among undergraduate students in Oyo town, Nigeria with a particular focus on private university in Oyo, Nigeria. The objectives of this study were to determine whether perceived ease of use, perceived usefulness, triability, capability, compatibility and perceived risk jointly and independently predicted the adoption of internet banking and also to ascertain the significant difference between perceived usefulness and adoption of internet banking.

The study employed survey research. Primary data was used for the study with questionnaire as research instrument. The subjects were four hundred and seven students of a private university in Oyo. The hypotheses formulated for the study were tested using T-test, Pearson correlation, regression, and ANOVA with the aid of Statistical Package for Social Sciences (SPSS).

The findings of the study revealed that perceived ease of use, perceived usefulness, triability, capability, compatibility and perceived risk jointly and independently predicted the adoption of internet banking. Also, there was a significant difference between Low and High Perceived usefulness and adoption of internet banking. In addition, there was a significant relationship between capability and adoption of internet banking. There was also main and interaction effect of capability and perceived risk on the adoption of internet banking.

Based on the findings, it was recommended that banks should embrace and promote innovative banking strategies in this era of globalization of which internet banking is a key factor. This can lead to competitive advantage for the banks and better banking services for the customers.

Keywords: perceived usefulness, triability, capability, compatibility, perceived risk and adoption of internet banking

1.0 INTRODUCTION

Internet Banking (IB) can be defined as a facility provided by banking and financial institutions that enable the user to execute bank related transactions through Internet. Banks can benefit from much lower operating costs by offering IB services, which require less staff and fewer physical branches. Customers will also benefit from the convenience, speed and round-the-clock availability of IB services. The introduction of Internet banking has prompted many banks to emphasize on information technology strategies in order to stay competitive (Akanbi, et al. 2011). Internet banking has revolutionized the way that we manage banking. Banks naturally have very tough hours for working adults to fit into their schedule. With internet banking, you can do your banking several day of the week at several hour of the day. The enormous thing is that you can relocate funds from account to account, check in on your balances, and perhaps the greatest benefit is that you know how to pay your charges online. You can have your charges sent electronically so that you are not just saving paper, but you are also saving on postage. As an alternative of buying a stamp to send in your check, you be able to just transfer money directly into your account. Internet banking also offers you slightly more protection. You be able to keep an extremely watchful eye on the debits and credits that hit your account instantly. By maintaining an eye on it, you can see if there are any suspicious charges almost directly so you can defend your finances and personal information. Internet banking empowers customers to choose when and where they conduct their banking services. Empirical results indicated that the Internet banking customers are more satisfied with their banks than non-Internet banking customers (Mols, 1998). Success in the electronic-banking era is measured in the eyes of the customer. A bank has to profitably meet the needs of customers and continuously improve its ability to do so. It has to be accurate, reliable, helpful and understanding. The goal is not simply to satisfy customers but to positively delight them.

In Nigeria, electronic banking products are increasingly gaining ground as many customers received them as panacea to problems of poor service delivery that has been bedeviling many banks for a long time. However, experts posit that the rate at which Nigerians accept the products is far below expectation. This can be attributed to lack of awareness about the products, inadequate legal framework and low technology. Hence, for the new delivery channels to succeed, both e-banks and the regulatory authority in Nigeria have to sensitize the public of the benefits of the e-products. This study therefore, examines some selected factors that may be responsible for the adoption of internet banking among undergraduate students in Nigeria.

1.1 OBJECTIVES AND HYPOTHESES

The objectives of this study are six which are embedded in the hypotheses stated below:

- (1) Perceived ease of use, perceived usefulness, triability, capability, compatibility and perceived risk will jointly and independently predict the adoption of internet banking.
- (2) There will be a significant difference between perceived usefulness and adoption of internet banking.
- (3) There will be a significant relationship between capability and adoption of internet banking.
- (4) There will be main and interaction effect of triability and perceived usefulness on the adoption of internet banking.
- (5) There will be a significant relationship between triability and adoption of internet banking.

(6) There will be a significant relationship between perceived risk and adoption of internet banking.

2.0 LITERATURE REVIEW AND THEORETICAL FRAMEWORK

Muniruddeen (2007) investigated factors responsible for users' acceptance of e-banking in Malaysia using extended technology acceptance model. The report showed that e-banking is accepted based on its perceived usefulness (PU) and perceived ease of use (PEOU). It also indicated that perceived security and privacy are the main concerns while using Internet banking. Reid and Levy. (2008), Pikkarainen et al (2004), and Karjaluoto et al (2002) also found that perceived usefulness and perceived ease of use are main factors that influence customers' acceptance of e-banking. Ayo et al. (2007) conducted a survey of electronic banking product and service in Nigeria and found that all the banks have at least one particular form of electronic service including e-banking service, Internet banking service, and m-banking. Though, various e banking systems have been implemented and accepted by customer, e-payment remains the most widely used of the e-banking solutions (Adesina and Ayo, 2010).

This study was grounded in the Technology Acceptance Model (TAM) and the diffusion of innovations theory which focused on variables that influence the intention to adopt Internet banking. TAM model centred on perceived usefulness, perceived ease of use, and attitude toward using the Internet banking (Davis et al., 1989). Correspondently, the characteristic of perceived innovative attributes consisted of triability, relative advantage, complexity, and compatibility (Rogers, 1995). TAM is originally developed by Davis (1986) to predict user acceptance of computer technology in the workplace . The model identified a person's acceptance of a technology is hypothesized to be determined by individual's voluntary intentions

towards using the technology. The intention, in turn, is determined by the person's attitude towards the use of the technology and individual's perception of its usefulness. Attitudes are formed from the beliefs a person holds about the use of the technology.

Venkatesh, and Morris (2000) stated that TAM is considered to be well-established and robust. The model consistently explained a substantial proportion of the variance in usage intentions and behavior. Adams et al. (1992) replicated TAM to demonstrate the validity and reliability of his instrument and his measurement scales. Hendrickson et al. (1993) found high reliability and good test-retest reliability toward TAM model. Several studies had extended the TAM model by emphasizing specifically on antecedents of ease of use and perceived usefulness, or added additional components to the model in order to account for the context-specific nature of adoption studies (Wang et al, 2003; Venkatesh and Davis, 2000; Hernandez and Mazzon 2007).

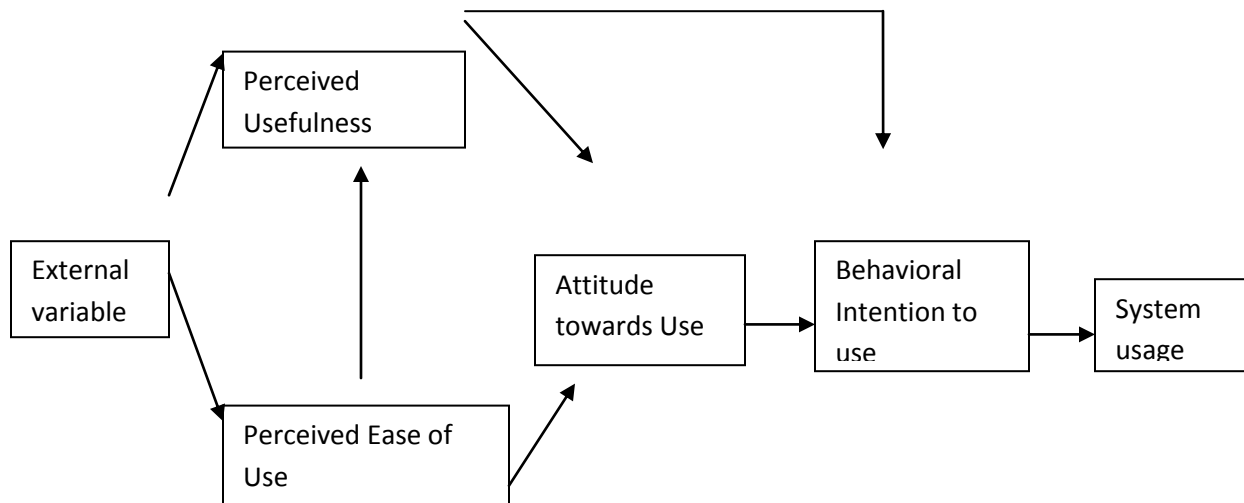


Figure 1: The Technology Acceptance Model

Source: Davis et al, (1989), “User acceptance of computer technology: a comparison of two theoretical models”, *Management Science*, Vol. 35 No. 8, pp. 982-1003.

Based on the theories in social psychology such as the theory of reasoned action (TRA) (Ajzen and Fishbein, 1980) and the theory of planned behavior (TPB) (Ajzen, 1985), the TAM has been validated as a powerful and parsimonious framework for explaining the adoption of IT by the users (Davis et al., 1989). TAM has both belief constructs, which are considered to be the main determinants of technology acceptance behaviors, including perceived usefulness (Davis, 1989).

Another study by Tan and Teo (2000) indicated that perceived usefulness is an important factor in determining the adaptation of innovations. Bhattacharjee (2002) stated that a person's willingness to transact with a particular system is already considered as perceived usefulness.

The perception of usefulness is formed in interaction with other individuals and a system (Venkatesh and Davis, 2000). Rogers (1962) theorized that perceived ease of use demonstrates the degree to which an invention is seen as being not too difficult to understand, learn or operate.

3.0 METHOD

3.1 RESEARCH DESIGN

The design for this study was a survey research design which measured two variables, independent variable and dependent variable. The independent variables were perceived ease of use, perceived usefulness, triability, compatibility, capability and perceived risk and the dependent variable was adoption of internet banking.

3.2 SAMPLE

The sample of this study comprised four hundred and seven students of a private university in Oyo, Oyo state, Nigeria. The samples were randomly selected across different faculties and departments namely faculty of social and management sciences, faculty of humanities, and faculty of natural sciences. A total of four hundred and forty questionnaires were

distributed, with a number of four hundred and seven found usable and were analysed. The subjects consisted of one hundred and thirty-seven males and two hundred and seventy females with age ranged between 18 and 30.

3.3 DATA ANALYSES

The demographic information was analysed using frequency counts and simple percentage. The hypotheses for this study were analysed using correlation analysis, regression analysis, t-test and analysis of variance.

Hypothesis 1 was analysed using multiple regression, hypothesis 2 was tested using t-test, hypotheses 3, 5 and 6 were analysed using Pearson correlation and hypothesis 4 was analysed using analysis of variance.

3.4 INSTRUMENTS

The study made use of questionnaire which was divided into 3 sections. The first section measured bio data, B measured the factors influencing the intention to use internet banking which has six sub-variables. Section Bi measured perceived ease of use which was a four item scale using a 7-point Likert scoring format ranging from Strongly Agree (SA) =7 to Strongly Disagree (SD) =1. Section Bii measured perceived usefulness which was a four item scale using a 7-point Likert scoring format ranging from Strongly Agree (SA) =7 to Strongly Disagree (SD) =1. Section Biii measured triability which was a three item scale using a 7-point Likert scoring format ranging from Strongly Agree (SA) =7 to Strongly Disagree (SD) =1. Section Biv measured capability which was a three item scale using a 7-point Likert scoring format ranging from Strongly Agree (SA) =7 to Strongly Disagree (SD) =1. Section Bv measured compatibility which was a three item scale using a 7-point Likert scoring format ranging from Strongly Agree (SA) =7 to Strongly Disagree (SD) =1. Section Bvi measured perceived risk which was a four item scale using a 7-point Likert scoring format ranging from Strongly Agree (SA) =7 to Strongly Disagree (SD) =1. All the six scales were adapted from a scale developed by Davis (1989) and Cheng et. al including the scale on adoption of internet banking in section C. Section C measured adoption of internet banking which was a four item scale using a 7-point

Likert scoring format ranging from Strongly Agree (SA) =7 to Strongly Disagree (SD) =1. The instruments were revalidated, and the cronbach alpha reliability coefficients gave the following results: perceived ease of use- .88, perceived usefulness- .89, triability- .88, capability- .76, compatibility- .84, perceived risk- .86 and intention to use internet banking- .86.

4.0 DATA PRESENTATION AND ANALYSES

Table 4.1: Showing the descriptive statistics of demographics

Sex	Frequency	Percentage
Male	137	33.7
Female	270	66.3
Total	407	100.0
Age	Frequency	Percentage
Less than 18	97	23.8
18-24	273	67.1
25-30	37	9.1
Total	407	100.0
Marital status	Frequency	Percentage
Single	393	96.6
Married	14	3.4
Total	407	100.0

field survey,2011

Table 4.1 shows that the male respondents were 137(33.7%) while their female counterparts were 270(66.3%) respectively. The table also shows that 97(23.8%) were less than 18 years 273(67.1%) were within the age range of 18-24years, 37(9.1%) were within 25-30years

respectively. The table indicates that 393(96.6%) of the respondents were single, while 14(3.4%) were married.

4.2 HYPOTHESES TESTING

Hypothesis 1

Perceived ease of use, perceived usefulness, triability, capability, compatibility and perceived risk will jointly and independently predict the adoption of internet banking.

H1a: perceived ease of use, perceived usefulness, triability, capability, compatibility and perceived risk will jointly predicts the adaption of internet banking.

Table 4.2.1a: Summary of regression analysis showing Perceived ease of use, perceived usefulness, triability, capability, compatibility and perceived risk on the adoption of internet banking

Model	Sum of squares	DF	Mean square	F	Sig
Regression	10028.316	6	1671.386	29.866	.000
Residual	22385.419	400	55.964		
Total	32413.735	406			

The table 4.2.1a shows that the joint effect of independent variables (perceived ease of use, perceived usefulness, triability, capability, compatibility, perceived risk) on

Adoption of internet banking was significant ($F(6, 4000) = 29.866$; $R = .556$, $R^2 = .309$, $Adj.R^2 = 0.299$; $P < .05$). Therefore, perceived ease of use, perceived usefulness, triability, capability, compatibility and perceived risk jointly predicted the adoption of internet banking.

H1b: Perceived ease of use, perceived usefulness, triability, capability, compatibility, and perceived risk will independently predicts the adoption of internet banking.

Table 4.2.1b: showing the relative effect of independent variables (Perceived ease of use, Perceived usefulness, Triability, Capability, Compatibility, Perceived risk) on adoption of internet banking.

Model	Unstandardized Coefficient		Standardized Coefficient	T	Sig.
	B	Std. Error			
(Constant)	6.785	1.353		5.016	.000
Perceived ease of use	.318	.063	.274	5.047	.000
Perceived usefulness	2.006E-02	.069	.017	.293	.770
Triability	.147	.072	.095	2.053	.041
Capability	-.155	.088	-.093	-1.758	.080
Compatibility	.347	.087	.224	4.002	.000
Perceived risk	.304	.056	.235	5.388	.000

Table 4.2.1b shows the relative contribution of each of the independent variables on the dependent: Perceived ease of use ($\beta = .274$, $P < .05$), Perceived usefulness ($\beta = .017$, $P > .05$), Triability ($\beta = .095$, $P < .05$), Capability ($\beta = -.093$, $P > .05$), Compatibility ($\beta = .224$, $P < .05$) and Perceived risk ($\beta = .235$, $P < .05$), respectively. Therefore perceived ease of use, Triability, Compatibility and Perceived Risk were found significant while capability and perceived usefulness were not.

Hypothesis 2

H2: There will be a significant difference between Perceived usefulness and adoption of internet banking.

Table 4.2.2: Summary table showing the significant difference between perceived usefulness and adoption of internet banking.

Table 4.2.2 shows that there is a significant difference between Low and High Perceived

Perceived usefulness	N	Mean	Std. Dev.	Crit-t	Cal-t.	DF	P
Low	173	20.036	8.7823	1.96	4.114	405	.000
High	234	23.6795	8.7519				

usefulness and adoption of internet banking (Crit.t = 1.96, Cal.t = 4.114, df = 405, P < .05 level of significance). Therefore, there is a significant difference between perceived usefulness and adoption of internet banking.

Hypothesis 3

H3: There will be a significant relationship between capability and adoption of internet banking.

Table 4.2.3: Summary table showing the significant relationship between Capability and Adoption of Internet Banking.

Variable	Mean	Std. Dev.	N	R	P	Remark
Adoption of internet banking	22.1425	8.9351	407	.236**	.000	Sig.
Capability	13.5602	5.3903				

Sig. at 0.01**

The above table 4.2.5 shows that there is a significant relationship between capability and adoption of internet banking ($r = .236^{**}$, $N = 407$, $P < .01$).

Hypothesis 4

H4 There will be main and interaction effect of Triability and Perceived Usefulness on Adoption of Internet Banking.

Table 4.2.4: Summary table showing the main and interaction effect of Triability and Perceived Usefulness on Adoption of Internet Banking

Source	Sum of Squares	DF	Mean Square	F	Sig.
Main Effect:	4726.944	3	1575.648	22.935	.000
Triability	532.372	1	532.372	7.749	.006
Perceived Usefulness	3236.400	1	3236.400	47.108	.000
2-Interactions:					
Triability x Perceived Usefulness	281.585	1	281.585	4.099	.044
Explained	4726.944	3	68.702		
Residual	27686.790	403			
Total	32413.735	406			

There was main and interaction effect of Triability and Perceived Usefulness on Adoption of Internet Banking ($F(3,403) = 4.099, P < .05$). The hypothesis is accepted.

Hypothesis 5

H5: There will be a significant relationship between triability and adoption of internet banking.

Table 4.2.5: Summary table showing the significant relationship between Triability and Adoption of Internet Banking

Variable	Mean	Std. Dev.	N	R	P	Remark
Adoption of internet banking	22.1425	8.9351				
Triability			407	.302**	.000	Sig.
	12.7224	5.7731				

Sig. at 0.01**

It is shown in the above table that there was a significant relationship between Adoption of internet banking and Triability ($r = .302^{**}$, $N = 407$, $P < .01$). The hypothesis is accepted.

Hypothesis 6

H6: There will be a significant relationship between perceived risk and adoption of internet banking.

Table 4.2.6: Summary table showing the significant relationship between Perceived risk and Adoption of Internet Banking

Sig. at 0.01**

Variable	Mean	Std. Dev.	N	R	P	Remark
Adoption of internet banking	22.1425	8.9351	407	.344**	.000	Sig.
Perceived risk	15.5553	6.8901				

It is shown in the above table that there was a significant relationship between Adoption of internet banking and perceived risk ($r = .344^{**}$, $N = 407$, $P < .01$). The hypothesis is accepted.

5.0 CONCLUSION

This study investigated some selected factors influencing the adoption of internet banking among undergraduate students in Nigeria. It can be concluded from the test conducted that perceived ease of use, perceived usefulness, triability, capability, compatibility, and perceived risk are predictors of adoption of internet banking in Nigeria. This result supports earlier studies by different researchers on the impact of these factors on adoption of internet banking (Muniruddeen, 2007; Davis et al., 1989; Reid and Levy, 2008; Pikkarainen et al., 2004, and Karjaluoto et al., 2002; Ayo et al., 2007 and Adesina and Ayo, 2010.) It is also evident in this study that perceived ease of use, perceived usefulness, triability, capability, compatibility, and perceived risk are associated with adoption of internet banking. This means that there is a link between these factors and adoption of internet banking.

Furthermore, there was main effect of triability and perceived usefulness on adoption of internet banking. However, there was no interaction effect of these two factors on internet banking adoption. There was also a significant difference between low and high perceived

usefulness on adoption of internet banking. A customer who perceives internet banking to be highly useful is likely to adopt it better and more than a customer with low perceived usefulness.

5.1 RECOMMENDATIONS

The following are recommended based on the findings from this study:

- There should be better education and campaign about the benefits and usefulness of adoption of internet banking not only among students but also the general public. This can be achieved through advertising using different media.
- Government should encourage its citizens to be computer literate in this era of globalization that is affecting all ramifications of our career and life in general.
- Banks should design friendly website to attract both student customers and the general public. Efforts should be geared towards reducing the complexity in the operations of internet banking.

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