

INFLUENCE OF RELATIVE ADVANTAGE ON ADOPTION OF ELECTRONIC BANKING SERVICES IN NIGERIA

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Abstract

Electronic banking (e-banking) services adoption is growing in developing countries, hitherto known as information haves-not countries. This study attempted to establish any relationship between relative advantage and the extent of e-banking services adoption in Nigeria. Copies of questionnaires were administered to bank customers in the different geo-political zones of Nigeria. The data were measured using a 5-point Likert scale: "Strongly agree" (5), "Agree" (4), "Neutral" (3), "Disagree" (2), and "strongly disagree" (1). Descriptive and inferential statistical techniques were employed for analysis of data. Pearsons Product Moment Correlation Coefficient was obtained with the aid of Statistical Package for Social Sciences. There was a positive correlation between Relative Advantage and Automated Teller Machine, Electronic Payment System and Home Banking. The paper recommends amongst others that the banks should educate customers on relative advantages of e-banking services over traditional banking system.

Keywords: *Relative advantage, Adoption, Electronic banking*

Introduction

Information Technology (IT) facilitates information management and enhances effectiveness and efficiency of operations of individuals and corporations. Technology Acceptance Model (TAM) is an information systems theory that models how users come to accept and use a new technology [1]. This model suggests that when users are presented with a new software package, a number of factors influence their decision on how and when they will use it, notably, *relative advantage* of an innovation as the degree to which the innovation is perceived as being better than the idea it supersedes [2]. The implementation of IT networking has brought revolution in the functioning of banks and financial institutions. A number of determinants to assess the extent to which technological factors influence the extent of adoption have

been studied and the researchers found that the determinants used are Relative advantage, Compatibility and Complexity [3]. The objective of the study therefore is to assess to what extent relative advantage affects the adoption of electronic banking services.

Significantly, banks as well as other organizations in Nigeria must recognize that adopting bank innovation will offer them solutions to existing problems or even present new production opportunities like increment in productivity or improvement in operational efficiency. Organizations adopt technologies when they see need for that technology, believing it will either take advantage of a business opportunity or close a suspected performance gap. Web technology is most likely to be adopted when organizations perceive it

will help with the sharing of business information within an organization [4].

Research Problem

There is an overwhelming influence of information communications technology (ICT) on the banking industry in Nigeria, which has challenged the faces of business in providing new trends in the purchase of products and services. The result of this influence is the presence of numerous electronic banking products and services offered to Nigerian consumers by the banking industries. Specifically, the problem of this study is to examine the effects of relative advantage on the adoption of electronic banking services in Nigeria.

Theoretical Foundations

In appreciating technology adoption, Davis [1] propounded the Technology Acceptance Model (TAM) which illustrated the issues that make an

individual to adopt different technologies. Davis model was developed in order to improve the understanding of users acceptance processes, thereby, providing new theoretical insights into successful design and implementation of information system. Further, in explaining behavioural intensions, the Theory of Reasoned Action (TRA) and Theory of Planned Behaviour (TPB) are also used. The nature of an innovation actually determines what specific types of relative advantage-like economic, social etc. that is vital to the adopters [2].

Research Framework

In this study, relative advantage is our predictor variable, and our criterion variable is adoption of electronic banking services with its measures as acceptance and usage of Automated Teller Machine, acceptance and usage of electronic payment systems and acceptance and usage of home banking (Figures 2.1 and 2.2).

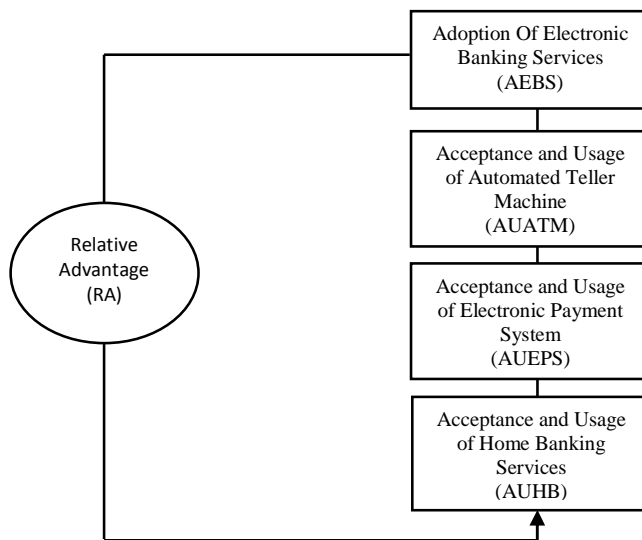


Fig. 2.1: Conceptual framework on Relative Advantage and Adoption of Electronic Banking Services in Nigeria.

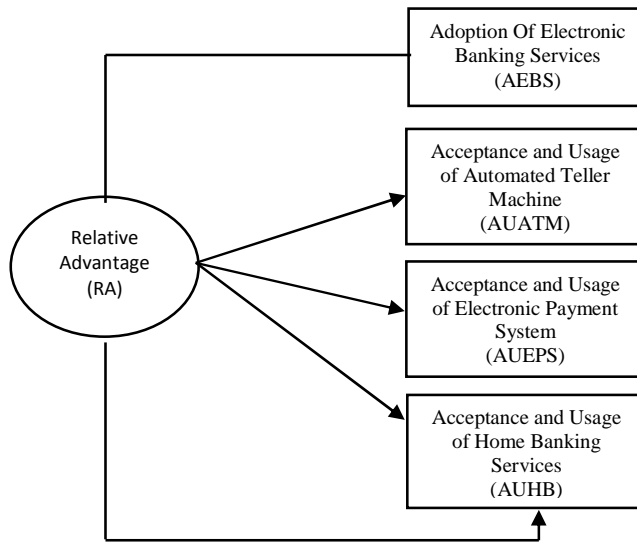


Fig. 2.2: Operationalization on Relative Advantage and Adoption of Electronic Banking Services in Nigeria.

Literature Review

Generally, several determinants have been used to assess the degree under which technological factors influence the extent of new technology adoption. In the context of this study the determinant that is used and analysed is relative advantage, and therefore vital to assess if the perceived relative advantage of the banking industry in Nigeria have a positive relationship with the degree of adoption of electronic banking services. Technological context is a collection of technologies accessible for innovation adoption by an organization such as the banking industry, and studied thirty distinguished innovation attributes and identified five characteristics and found that amongst the characteristics were relative advantage, compatibility and complexity and concluded that these three characteristics are the ones that influence an organizations decision to use or ignore innovation.

Relative advantage is the extent to which an innovation is seen as something better than the old idea. The degree of relative advantage is often expressed in terms of economic profitability, social prestige, convenience, satisfaction or other advantages [2]. The nature

of innovation actually determines what specific type of relative advantage – such as economic, social etc. It is also vital to note that the characteristics of the potential adopters also influence which sub-dimensions of Relative Advantage would be most important. It becomes obvious therefore that the greater the perceived relative advantage of an innovation, the more rapid its rate of adoption is likely to be [2]. Generally, there are no absolute rules for what constitutes “relative advantage”, but it depends on particular perceptions and needs of the user group.

Influence of IT on e-banking services

Today’s business environment is very dynamic and undergoes rapid changes as a result of technological innovations, increased awareness and demands from customers. Business organizations, especially the banking industry today operate in a complex and competitive environment characterized by these changing conditions and highly unpredictable economic climate. Information and Communication Technologies (ICT) is at the centre of this global change. The ability of Nigerian banks to satisfy

and retain their customers in the present post consolidation era will no doubt depend largely on the development of their IT infrastructure, in the bid to catch up with global developments and improve the quality of their service delivery, Nigerian banks have been investing on technology, and have widely adopted electronic and telecommunication networks for delivering a wide range of value-added products and services as will be noted in our paper. The introduction as well as the improvement of information technology in Nigeria banking industry are geared toward repositioning of the banking industry in order to match with the Western World's banking practices. Banks have adopted the use of computer systems, local area network service (LANS), facsimile services, telephone, wide area network services (WANS), electronic file transfers, wireless phones, and others in running and carrying out their various functions. It is worthy of note that information technology has aided banks in achieving productivity and profitability, good service delivery, enhancement of good customer relationship, development of the industry, creating customers' confidence in the industry, assisted daily balancing of accounts among others [5].

The Nigeria Financial Sector has experienced some handicapped situations in services delivery as a result of inadequate and inappropriate information technology and lack of technological changes in the global sector. The dynamic nature of banking services today need proper knowledge of information technology and provision of information technology into the system or industry. Improper consideration of information technology in the banking industry will result in delay of services, lost of valuable customers, increase of fraudulent activities among workers, profit droppings, ignorant of market targets, global challenges as well as other associated factors will handicap the industry's operation [5].

Also, Anamakiri [5] asserted that under the unfolding globalization trend, information technology is crucial for growth of any bank. Anamakiri [5] contended that information technology is a way of getting knowledge and facts through the use of components that process inputs and produces, output for individual, and organizational users. Anamakiri added that it is electronically structured to have hardware, data bases, software, networks and other vital devices. Nweke [6] views information technology as a sub-system of information system which can be used as a broader concept that describes a collection of several information systems, users and management of the entire organization.

Interestingly, information technology is the modern ways of handling information by electronic means, which involves access, storage, processing, transportation or transfer and delivery of information activities. Information technology without doubt facilitates the ability of man to manage information, bring effectiveness as well as efficiency of operations of individuals and organizations. Further, the Technology Acceptance Model (TAM) is an information systems theory that models how users come to accept and use a new technology. The model suggests that when users are presented with a new software package, a number of factors influence their decision about how and when they will use it, notably: Perceived usefulness (Pu) the degree to which a person believes that using a particular system would enhance his or her job performance; perceived ease of use (PEOU) as the degree to which a person believes that using a particular system would not be complicated and less effort to using it is more preferred [2]. Banks and Financial Institutions are the backbone of the economy of a country.

Implementation of ICT networking has brought revolution in the functioning of banks and financial institutions. According Agboola [7] studies have investigated the impact of Information Communications Technology Act

of 2000 on the banking sector of India and the decision of firms to adopt ICT based on a comprehensive specification of a rank model of technology adoption, revealing that the model yielded robust pattern of explanation across estimates showing different adoption variables (time period of adoptions of specific information communication technology elements, intensity of use of ICT). Also studied is the response of Nigerian banks to the adoption of Information Communication Technologies. The study found that the period between 1990 and 2005, was characterized by fundamental changes in the content and quality of banking business in Nigeria.

According to Agboola [7], technology was discovered to be the main driving force of competition in the Nigerian Banking Industry. By 1998, only one bank had ATM and by 2004, 14 of the studied banks had acquired the technology. Electronic Funds Transfer (EFT) also increased from 3 to 14; Smart cards from 1 to 11; Electronic Home and Office Banking from 3 to 9 and Telephone Banking from 3 to 12 within the same period. The application of information and communication technology concepts, techniques, policies, and

implementation strategies to banking services in Nigeria has become a subject of fundamental importance to all banks and indeed a prerequisite for local and global competitiveness. ICTs directly affect how managers decide, plan and what products and services are offered in the banking industry. Harold and Jeff [8] (1995) contend that financial services providers should modify their traditional operating practices to remain viable in the decades to come. Banks that overhaul their entire payment and delivery systems and apply ICTs to their operations are likely to survive and prosper in the new millennium. He further asserted that banks must re-examine their service and delivery system in order to properly position itself within the framework of the dictates of the dynamism of information and communication technology. Communication Technology deals with the physical devices and software that link various computer hardware components and transfer data from one physical location to another [9] (Laudon and Laudon 2001). Laudon and Laudon [10] contend that managers cannot ignore information systems because they play critical role in the contemporary organization.

Methodology

The objective of this paper is to empirically investigate the effects of Relative Advantage on the adoption of electronic banking services in Nigerian. Data were drawn from bank customers resident in Nigeria. Three hundred and twenty six (326) respondents of bank customers were drawn as a sample size of the

study from a cross section of respondents. A 5-point Likert Scale was employed in questionnaire design [11]. Data were analysed using inferential statistics and Pearson Product Moment Correlation Coefficient with the aid of Statistical Package for Social Sciences (SPSS) version 15.0.

Results and Discussions

Based on the responses and analyses of the study as depicted above, the following findings from the univariate analysis are therefore, hereunder stated. On relative advantage, respondents indicated a split opinion as smaller number of respondents strongly agreed that they

derive very little advantages in using electronic banking services as opposed to a dominant number of respondents who strongly disagreed with high percentages that they derive advantages from the use of electronic banking services.

Result of Pearson Product Moment Correlation Coefficient on Relative Advantage and ATM, EPS, and HBS

Correlations

	Relative Advantage (RA)	Automated Teller Machine (ATM)	Electronic Payment System (EPS)	Home Banking Services (HBS)
Relative Advantage (RA) Pearson Correlation	1	0.890*	.760**	.016
Sig. (2-tailed)		.021	.005	.777
N	326	326	326	326

[DataSet1] D:\Data Files\Ana-Henry Ozuru-AllData=A.sav

Source: SPSS version 15.0

* = Correlation is significant at 0.05 (2-tailed)

** = Correlation is significant at 0.01 (2-tailed)

Relative Advantage is correlated with Automated Teller Machine giving a coefficient of 0.890, and a p-value of 0.021, which shows that there is a strong positive linear relationship between the two variables. Direction is same (i.e. as one increases, the other increases also), also, since the p-value (= 0.021) is less than the level of significance, α (= 0.05). We, therefore, reject the null hypothesis and conclude that there is significant correlation between the two variables, Relative Advantage and Automated Teller Machine.

Relative Advantage is correlated with Electronic Payment System giving a coefficient of 0.760, and a p-value of 0.005, which shows that there is a strong positive linear relationship between the two variables. Direction is same (i.e. as one increases, the other increases also), also, since the p-value (= 0.005) is less than the level of significance, α (= 0.05), we therefore reject the null hypothesis and conclude that there is significant correlation between the two variables, Relative Advantage and Electronic Payment System.

Relative Advantage is correlated with Home Banking Services yielding a coefficient of 0.0160, and a p-value of 0.777, which shows that there is a weak positive linear relationship between the two variables. Direction is same (i.e. as one increases, the other increases also),

also, since the p-value (= 0.777) is greater than the level of significance, α (= 0.05), we therefore do not reject the null hypothesis and conclude that there is no significant correlation between the two variables Relative Advantage and Home Banking Services.

Areas of interest for the AUEBS included (1) Automated Teller Machine (ATM), (2) Electronic Payment System (EPS), and (3) Home Banking Services (HBS). Univariate analysis involves the examination across cases of one variable at a time. Therefore, univariate statistics, as an inferential statistics is used in describing the basic features of gathered data as well as provide simple summaries with regard to the measures [12]. Saunders et al [13] also posits that it is best to begin exploratory or initial analysis of the research data through individual variables and their components. Here, we present the results of the analysis of the raw data using frequencies, percentages as well as their associated means and standard deviation using SPSS output version 15.0.

The research instrument generated data that portray the extent of the existence of these variables, including their measures and dimensions. The data were measured using a 5 point Likert scale on the basis of “Strongly agree” (5), “Agree” (4), “neutral” (3), “Disagree” (2), and “strongly disagree” (1).

Premised on this scale and associated points, the mean and frequencies of the responses to issues raised in the research instrument are presented

below. These were interpreted and considered in the context of this research work, from which recommendations are made.

Table 2.1: Frequencies on Relative Advantage (RA)

Strongly Agree (5)	Agree (4)	Undecided (3)	Disagree (2)	Strongly Disagree (1)	\bar{X}	TOTAL	SD
31.29% 102 510	33.44% 109 436	33.74% 110 330	1.23% 4 8	0.31% 1 1	3.942	326	0.852
34.66% 113 565	32.82% 107 428	31.29% 102 306	0.61% 2 4	0.61% 2 2	4.003	326	0.861
0.92% 3 15	0.61% 2 8	0.31% 1 3	47.55% 155 310	50.61% 165 165	1.537	326	0.635
23.62% 77 385	34.97% 114 456	39.88% 130 390	0.61% 2 4	0.92% 3 3	3.798	326	0.839
0.61% 2 10	0.61% 2 8	0.92% 3 9	49.39% 161 322	48.47% 158 158	1.555	326	0.614
47.85% 156 780	50.00% 163 652	0.61% 2 6	0.61% 2 4	0.92% 3 3	4.433	326	0.637
0.31% 1 5	0.61% 2 8	0.00% 0 0	48.16% 157 314	50.92% 166 166	1.512	326	0.570
0.31% 1 5	0.61% 2 8	0.31% 1 3	49.39% 161 322	49.39% 161 161	1.531	326	0.574
0.61% 2 10	0.31% 1 4	32.82% 107 321	33.13% 108 216	33.13% 108 108	2.021	326	0.854
0.00% 0 0	0.00% 0 0	30.06% 98 294	32.52% 106 212	37.42% 122 122	1.926	326	0.819

Questions were specifically raised to know the strength of relative advantage on adoption of e-banking services in Port Harcourt. As shown in the first column, the first question sought to know if users perceive ease-of-use in the use of electronic banking services. From Table 2.1, the responses generated in course of this question indicate that 102 (31:29%) strongly agreed, 109 (33.44%) agreed, 110 (33.74%) undecided, 4

(1.23%) disagreed, and 1 (0.31%) strongly disagreed.

In all, and from the frequencies these responses produced a mean value of 3.942 and shows a strong relationship with Adoption and usage of Electronic Banking Services and a corresponding Standard deviation of 0.852. On the second question, which sought to know if enough advantages exist in electronic banking for consideration to use it, the responses showed

that 113 (34.66%) strongly agreed; 107 (32.82%) agreed, 102 (31.29%) undecided, 2(0.61%) and 2 (0.61%) strongly disagreed. Based on the frequencies, responses emanating from this question gave a mean value of 4.003, and a standard deviation of 0.811 which shows that actually there is enough advantage to consider using electronic banking services. This implied a very strong relationship with Adoption of Electronic Banking Services. On the third question-whether customers perceive value in managing their finances electronically, the responses generated were 3 (0.92%) strongly agreed, 2 (0.61%) agreed, 1 (0.31%) undecided, 155 (47.55%) disagreed, 165 (50.61%) strongly disagreed, and gave rise to a mean value of 1.537 meaning that value is not important in managing finances more efficiently electronically.

A corresponding standard deviation of 0.635 is indicated. In the fourth question seeking to know if electronic banking helped in better managing of personal finances, the responses indicated 77 (23.62%) strongly agreed, 114 (34.97%) agreed, 130 (39.88%) undecided, 2 (0.61%) disagreed, 3 (0.92%) strongly disagreed. This response gave rise to a mean score value of 3.798 which shows that electronic banking helps customers to better manage their personal finances.

The responses on the fifth, sixth, seventh, eighth, ninth and tenth question indicated 2 (0.61%) for strongly agreed; 2 (0.61%) agreed, 3(0.92%) undecided, 161 (49.39%) disagreed, 158 (48.47%) strongly

disagreed, giving rise to a mean score of 1.555 with a corresponding standard deviation of 0.614; a 156 (47.85%) for strongly agreed, 163 (50.00%) agreed, 2(0.61%) undecided, 2 (0.61%) disagreed, 3(0.92%) strongly disagreed, showing a mean score of 4.333 with a corresponding standard deviation of 0.637, meaning a strong relationship with adoptivebehaviour; a 1 (0.31%) for strongly agree, 2(0.61%) agreed, 0(0.00%) undecided, 157 (48.16%) disagreed, 166 (50.92%) strongly disagreed, giving rise to a mean score of 1.512 and a standard deviation of 0.570 indicating a weak relationship with adoptive behaviour; a 1 (6.31%) for strongly agreed, 2(0.61%) agreed, 1 (0.31%) undecided, 161 (44.11%), 161 (49.11%) strongly disagreed with a mean score of 1.531 and a corresponding standard deviation of 0.54 meaning that customer service charges are not reduced; a 2 (0.61%) for strongly agreed, 1 (0.31%) undecided, 107 (32.82%) undecided, 108 (33.13%) disagreed, 108 (33.13%) strongly disagreed showing a mean value of 2.021 and a standard deviation of 0.854 meaning that customers are not being provided with several forms of customer service; and a 0 (0.000%) strongly agreed, 0 (0.00%) agreed, 98 (30.06%) undecided, 106 (32.52%) disagreed, 122 (37.42%) strongly disagreed, none of the respondents neither strongly agreed nor agreed but gave a rise of 1.926 mean score with a corresponding standard deviation of 0.819 respectively. These later responses indicate a very weak relationship on Adoption of Electronic Banking Services.

Conclusions and Recommendations

Conclusion

Significantly, results have clearly demonstrated and provided a clear understanding on how

Recommendations

Based on our empirical and systematic conducted research work, the following recommendations are made.

relative advantage have influenced the adoption of e-banking services amongst academic staff in Nigerian.

- Nigerian banks can launch regular campaigns in order to create awareness to both users and potential users of electronic banking services. Creating

adequate awareness of electronic banking services' benefits or their relative advantages is crucial for increasing engagement in the adoption process. People are more likely to adopt or use such service when they perceive that the advantages derived from using a new bank technology outweighs the

disadvantages that is derived from using the old system.

- These campaigns ultimately can be used mainly to educate more on relative advantages.
- Bankers should disseminate information regarding the banks benefits for expanding electronic banking services.

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