Perceived Attributes of Factors Influencing Consumers' Engagement with Electronic Banking

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Abstract: This study intends to critically analyze the relationship between perceived attributes as factors and consumers' engagement with electronic banking technology. A survey method was used to gather data from 200 secondary school teachers from five selected local government in South-Western part of Nigeria namely; Ibadan North, Egbeda, Ido, Ibadan North-East and Ibadan North-West Local government. Data was collected with a structured questionnaire and analyzed with several descriptive statistics to identify consumers' engagement in electronic banking technology in Nigeria. The results of the study therefore reveals that the most common influential factors hindering consumers' adoption of electronic banking in Nigeria are relative advantage of economic gains and non-economic gains, social character, communication behavior, trialability as well as observability. Hence, it therefore recommends that the banks should create channels through which customers' awareness will be enhanced and employ IT trained personnel to monitor and report any fraudulent transaction in order to secure customers' trust on safety risk/security.

Keywords: Electronic banking technology; perceived attributes; Banking sector; Local Government; Nigeria

JEL Classification: G21; G32; H11; H70

1. Introduction

This research explored through various studies, the distribution channels in the financial services with the main focus on perceived attributes of factors influencing consumers' engagement in electronic banking, by examining the extent of its adoption/rejection. That is, instead of investigating the decision of the consumers in adopting or not adopting the internet as a new technological product, but this study tends to look into the extent of adopting the internet as a new technology-based distribution channel with the reference of the researches conducted on diffusion innovation model and technological acceptance model. As internet banking is a relatively new concept in banking service delivery, another theory that may explain operative forces in consumer internet banking adoption is Rogers'

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theory of innovation diffusion (Rogers, 1995) as cited in Williamson & Lichtenstein (2006). Rogers describes five innovation attributes that help explain innovation adoption rates: relative advantage; compatibility (degree to which the service is consistent with the consumer's values, experiences and needs), complexity, trialability (degree to which the service can be experimented with prior to making the decision whether to adopt) and observability (degree to which the service can be observed being successfully used). The technology acceptance model (TAM) developed by Davis (1989) may also be relevant to consumer choices in internet banking adoption. In this model, 'perceived usefulness' and 'perceived ease of use' are the two main influences in user adoption of technologies. More recent studies employing a TAM-base theoretical lens have identified additional constructs that may be influential in internet service adoption. For example, a holistic framework incorporating complex social, psychological and economic elements was recently proposed (Konana and Balasubramanian, 2005).

The secondary school teachers from five selected local government in South-Western part of Nigeria namely; Ibadan North, Egbeda, Ido, Ibadan North-East and Ibadan North-West Local government were used as the case study due to their being involved in the banking transaction for at least ten years and thereby have experience in the use of internet banking.

1.1. Scope and Limitation of the Study

This paper seeks to investigate the relationship between perceived attributes as factors and consumers' engagement with electronic banking technology in Nigeria. The purpose of this study is to come up with a set of influential factors determinates that the adoption/rejection of electronic banking in Nigeria. In this research, focus was only on secondary school teachers from five selected local government in South-Western part of Nigeria. Therefore, the first limitation faced by this study is that the research findings of the adoption/rejection of electronic banking technology in the sample area might not be able to represent the correct situation in the rest of the country. The problem is that the majority of adopters in Nigeria might face different problems from different circumstances.

Another limitation in the research is that since questionnaires are used to collect and investigate the adoption/rejection of electronic banking in Nigeria, the major disadvantage of this method is the inability to interact with respondents (banking customers) in order to ask more detailed and in-depth questions to discover more information as the study permits. This limitation pose a problem for this study as the inability to discover in-depth influenced between perceived attributes as factors and consumers' engagement in electronic banking, and to measure accurately the clear reasons given by each respondents.

However, since this study makes use of primary data, the instruments need to be subjected to more statistical tests in order to establish a more robust validity and reliability. The instruments could be further refined to more closely capture each of the problem areas identified in the literature. It is suggested that that replication of this study should involve larger samples and a broader geographic base for cross-validation purposes.

2. Literature Review

2.1 Adoption of Electronic Banking

It is imperative for adopters to identify the product that will give them higher satisfactory value and innovativeness to the product that meets their needs and demand. This, according to Rogers, (2003), is regarded as "adoption process", consisting of five stages namely perception, curiosity, appraisal, experimental and adoption. In order for this study to infer these characteristics, it will focus on Lockett and Littler's presented model (1997) which is behavioural characteristics based on social interaction and communication behaviour as well as attitude and personality, which all surround the diffusion of innovation theory (Rogers, 2003) .

2.2 Theory of Diffusion of Innovation

The user of new technologies can best be explained with the popular model of Roger's (2003) diffusion of innovation theory. Innovation according to Rogers, (2003) p 262, can be described in terms of perceived attributes, which can be evaluated based on innovation attributes such as relative advantage (perceived usefulness), compatibility, complexity (perceived ease of use), observability and trialability, perceived risk and cost. This is also in line with Davis (1989) who proposed the technology acceptance model (TAM), which established that individual's attitude towards system usage is being influenced by perceived usefulness (PU) and perceived ease of use (PEOU).

3. Methodology and Data

This paper seeks to critically analyze the relationship between perceived attributes as factors and consumers' engagement with electronic banking technology and examine the extent of it adoption/rejection. A survey method was used to gather data from 200 secondary school teachers from five selected local government in South-Western part of Nigeria namely; Ibadan North, Egbeda, Ido, Ibadan North-East and Ibadan North-West Local government. The purpose of this study is to come up with a set of influential factors determinates that the adoption/rejection of electronic banking in Nigeria.

Primary sourced data is the main data used for analysis, as shown in Table 1 below. These were collected using a 17-item/5-point Likert scale questionnaire, administered to the selected secondary school teachers. This did not pose a problem, due to the fact that the questionnaires were administered by customers who has being a banking customers in various banks in Ibadan and who has been operating bank account for at least ten years and have used various products of electronic banking and could give reasons for their adoption or rejection, as well as satisfaction and convenience derived from the adoption of the products.

The study was mainly based on information derived from responses to the questionnaire. Primary data employed for this study were collected from a cross section of the secondary school teachers in the selected local governments. Random sampling technique was used to determine the eligible teachers to be questioned. Data collected was presented in tabular form with descriptive statistic while the hypothesis formulated was tested with correlation and t-test to determine the respondents' perception on the subject matter. This study employed a multi-methodology approach in which both qualitative and quantitative approaches were used. In all, 200 respondents that made up the sample were randomly selected.

Five copies of the first draft of the questionnaire will be handed out to Guaranty Bank staff to look into the aspect relating to banking technicalities; the Principals with the HODs of selected secondary schools in order to look at the relevance of the personal characteristic as well as demographic characteristics of the questionnaire to their working sector; two final year Economics students of Fountain University will look into the grammar as well as the sentence construction and finally, one will be handed to a senior colleague in order to justify the reliability of the questionnaire and again to see how easy and understandable the questionnaire is. After refining some questions, the well-improved questionnaire was developed.

3.1 Statement of Hypotheses

In order to enable the researcher confirm the greatest drawback for the adoption of electronic banking in Nigeria and fully appreciate their respective relevant significance, he had to postulate the following hypotheses:

H0: There is no significance relationship between perceived attributes and consumers' engagement with electronic banking

H1: There is significant relationship between perceived attributes and consumers' engagement with electronic banking

4. Data Analysis and Findings

4.1. Characteristics of the New Technology

This study adapts Rogers' characteristics of new technologies of 2003, which analyzed the new technology characteristics from the perspectives of perceived attributes, such as relative advantage which can be (economic gains or non-economic gains), complexity, perceived risk which can be (error risk or safety risk), compatibility, trialability, cost, and observability.

4.2 Relative Advantage

Relative advantage is the extent at which the adopters take the product more relevant as against its substitutes. Therefore this research has identified that relative advantage on economic gains was an influential factor in determining the adoption of an innovative product, which means that it is directly related to its rate of adoption. This study reveals that there were 43% teachers that agreed to the statement that internet banking increased their purchasing power and enhanced their debt repayments by installments as against 19% teachers that disagreed. This study revealed that the teachers that agreed has much trust in internet banking in carrying out their daily transactions as well as debt repayment without fair. But on the other hand, the relative advantages on non-economic gains were having higher percentage of teachers that agreed but were not in the same proportion with those that agreed with economic gains. Therefore, the relative advantage on economic gains in adopting the electronic internet banking can be measured using item 9 for Economic Gains while non-economic gains can be measured using the item 10 from Appendix A. Table 1 below as well as figure 1 shows the analysis of data collected from the questionnaire.

Table 1. Analysis on the Response of Secondary School Teachers relating to Relative Advantage on Economic Gains/Non-Economic Gains

Respondents based on Relative Advantage on Economic Gains	4	19	6	2	8	43	18
Respondents based on Relative Advantage on Non-Economic Gains	6	28	12	2	2	35	15

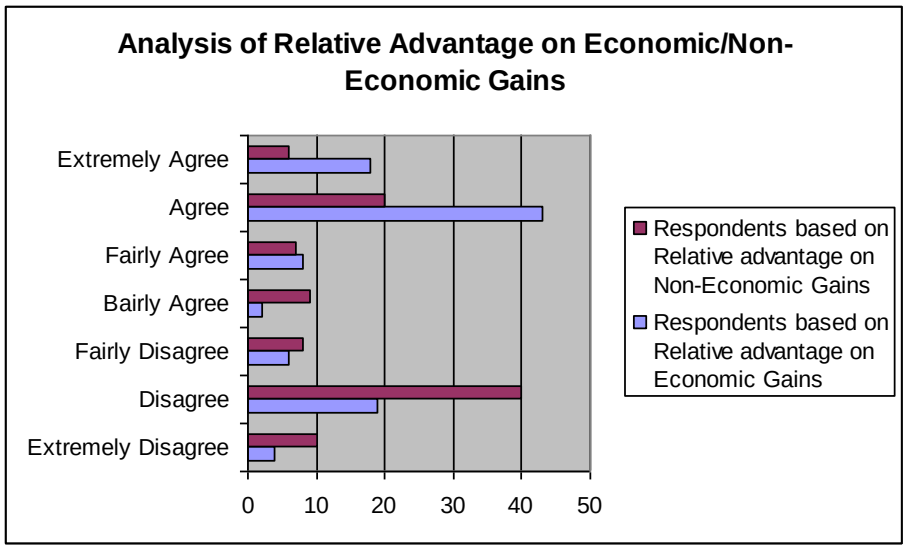

Figure 1 Showing the Responses of Secondary School Teachers relating to Relative Advantage on Economic/Non-Economic Gains

4.3 Complexity

This research reveals the importance of complexity in influencing the adoption of a new innovation but not at higher rate. Complexity being the extent at which the teachers adopt a new innovative product as being difficult to understand. Rogers' analysis on the diffusion of innovation theory revealed that complexity of an innovative product means that the product involves technicalities, greater implementation and operational efforts for the teachers to be able to adopt it. Therefore this research has identified that complexity was an influential factor in determining the adoption of an innovative product, which means that it is directly related to its rate of adoption. This study revealed that there were 36% of the teachers that agreed to the statement that internet banking is clearly, understandable and easy to use as against 30% of the members of teachers that disagreed. This study reveals that the teachers that agreed were educated and that was why it was simple for them to adopt. Therefore, the complexity of the use of internet can be measured using the item 11 from Appendix A. Table 2 below as well as figure 2 shows the analysis of data collected from the questionnaire.

Table 2. Analysis on the Response of Secondary School Teachers relating to Complexity (Put in a table)

	Extremely Disagree	Disagree	Fairly Disagree	Bairly Agree	Fairly Agree	Agree	Extremely Agree
No of Respondents	8	30	2	3	13	36	8
% of	8	30	2	3	13	36	8

Respondents

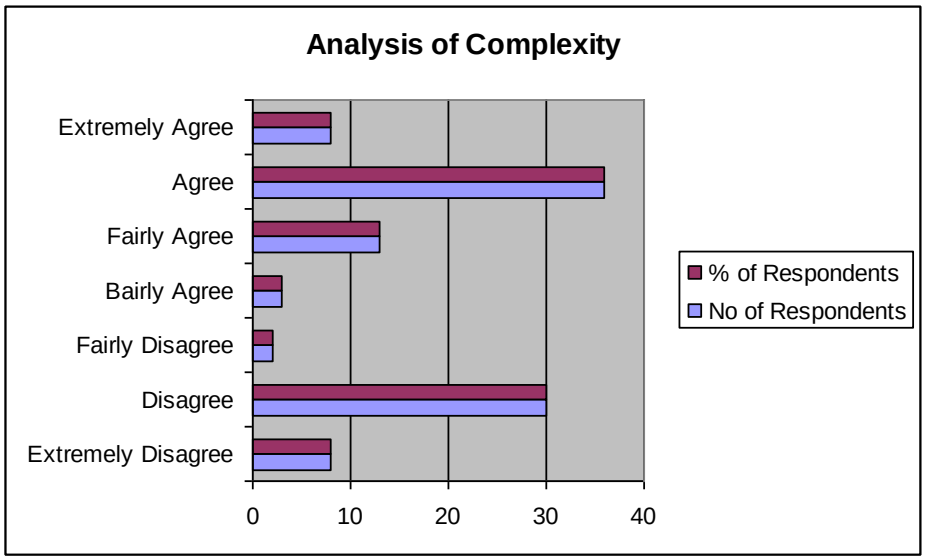

Figure 2 Showing the Response of Secondary School Teachers relating to Complexity

4.4. Perceived Risk

Perceived risk as a one of the factors influencing adoption/rejection of internet banking is the willingness for the teachers to take up the riskiness of an innovation despite the free will to accept or reject the risk as being a very crucial issue adopting innovative internet banking. This study identified Rogers' analysis as he stressed further that the conscious cognizance of the risk taken by the teachers will show the level of trust that teachers has for the product. This study has revealed that the trust a teacher has for adopting/rejecting internet banking could be in measured terms of faith or confidence they have for the adoption/rejection of the internet electronic banking. The research reveals that the teacher's trust in adopting/rejecting the internet banking was as a result of accepting/rejecting risks that surround the product. The perceived risk can be categories into two, which are error risk as well as safety risk. This study reveals that there were 30% of the school teacher perceived error risk, agreed to the statement that internet banking is risky and involves a lot of uncertainties as against 36% of teachers disagreed. This study reveals that the teacher that agreed did not trust the internet banking in carrying out their daily transactions as well as debt repayment without fair. This study reveals from the data analysis that those (36%) teachers that disagree constitutes female staff (25%) because of their not having flair for internet banking. But on the other hand, the perceived safety risk recorded almost a balance

percentage on the analysis. Although, those teachers that agreed to the statement that internet banking implement security measures to protect internet banking adopters have higher percentage of 36% than those teachers that disagreed who has 35% which correspond to the fact that the teachers were independent of the safety risk involved in the use of internet banking. The level of perceived error risk will be measured using item 12 from Appendix A while the level of perceived safety risk will be measured using item 13 from Appendix A. Table 3 below as well as figure 3 shows the analysis of data collected from the questionnaire

Table 3. Analysis on the Response of Secondary School Teachers relating to Perceived Risk on Error/Safety Risk

Respondents based on Perceived Risk on Error Risk	8	36	12	3	3	30	8
Respondents based on Perceived Risk on Safety Risk	8	35	6	1	8	36	6

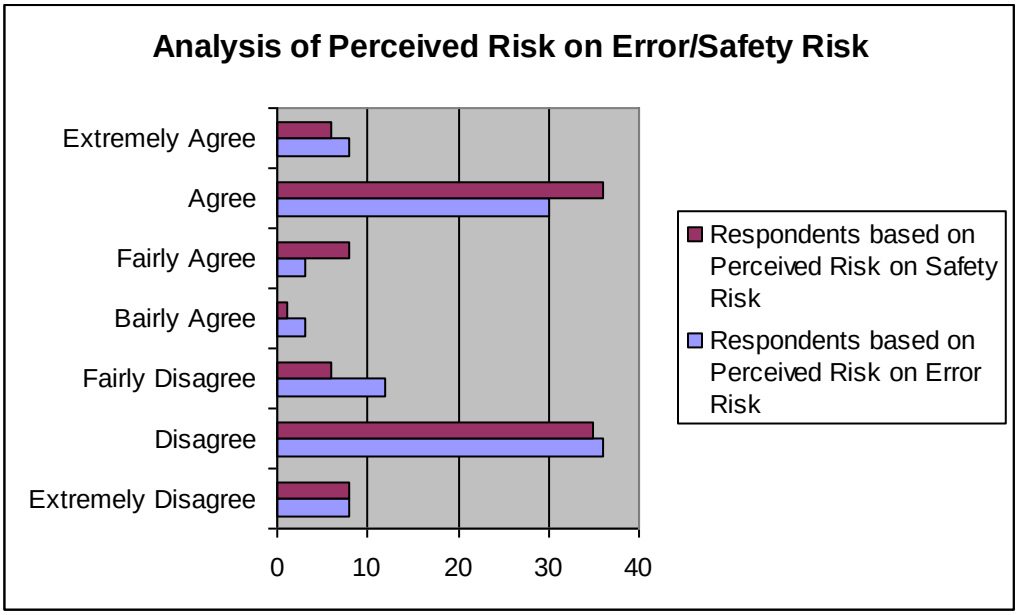

Figure 3 Showing the Response of Secondary School Teachers relating to Perceived Risk on Error/Safety Risk

4.5. Compatibility

Compatibility, as submitted by Rogers (2003), is the extent at which teachers' values, experiences, needs, beliefs and habits for the adoption of a new product is consistent. Rogers' analysis on the diffusion of innovation theory revealed that compatibility of an innovative, which was in line with this research in identifying compatibility as an influential factor in determining the adoption of an innovative product. This study reveals that there were 37% of teachers that agreed to the statement that: using the internet banking for purchases and daily transactions is the same as paying cash, as against 32% of the teachers that disagreed with the statement. The compatibility of the usage of internet banking by the teachers can be measured with item 14 from Appendix A. Table 4 below as well as figure 4 shows the analysis of data collected from the questionnaire.

Table 4. Analysis on the Response of Secondary School Teachers relating to Compatibility

	Extremely Disagree	Disagree	Fairly Disagree	Bairly Agree	Fairly Agree	Agree	Extremely Agree
No of Respondents	9	32	7	2	5	37	8
% of Respondents	9	32	7	2	5	37	8

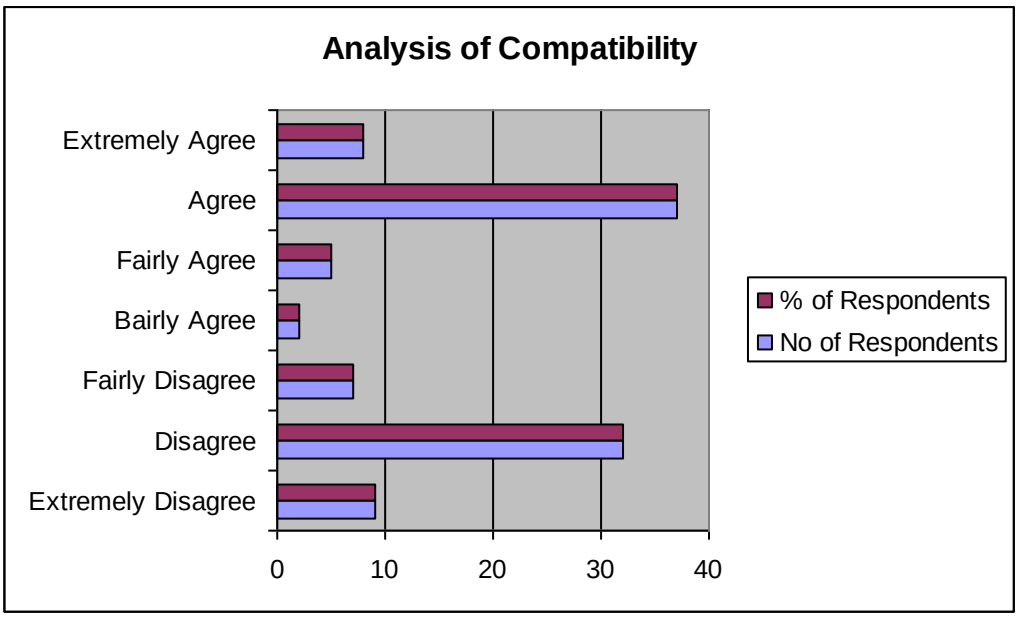

Figure 4 Showing the Response of Secondary School Teachers relating to Compatibility

4.6 Trialability

As submitted by Roger's diffusion of innovation theory on trialability as an influential factor in affecting the adoption/rejection of an innovative product. In it, trialability is the willingness of a staff in taking up a new innovative product in a way of trying the product before getting committed to it. This study reveals that there were 47% of teachers that agreed to the statement that: "I would prefer a trial, using the internet before getting committed with it", as against 13% of the teachers that disagreed with the statement. This research was in agreement with the findings of Lockett and Littler submission in 1997 which stated that the adopters were greater than non-adopters on the issue of trialability. This result reveals that a larger percentage of the teachers were educated and would rather prefer to give a new innovation a trial through reading up the information and searching through the internet so as to know how to go about it. The issue of trialability as to how it influenced the adoption/rejection of the electronic banking product will be measured with item 15 from the Appendix A. Table 5 as well as figure 5 shows the analysis relating to trialability.

Table 5. Analysis on the Response of School Secondary School Teachers relating to Trialability

	Extremely Disagree	Disagree	Fairly Disagree	Bairly Agree	Fairly Agree	Agree	Extremely Agree
No of Respondents	5	13	4	1	8	47	22
% of Respondents	5	13	4	1	8	47	22

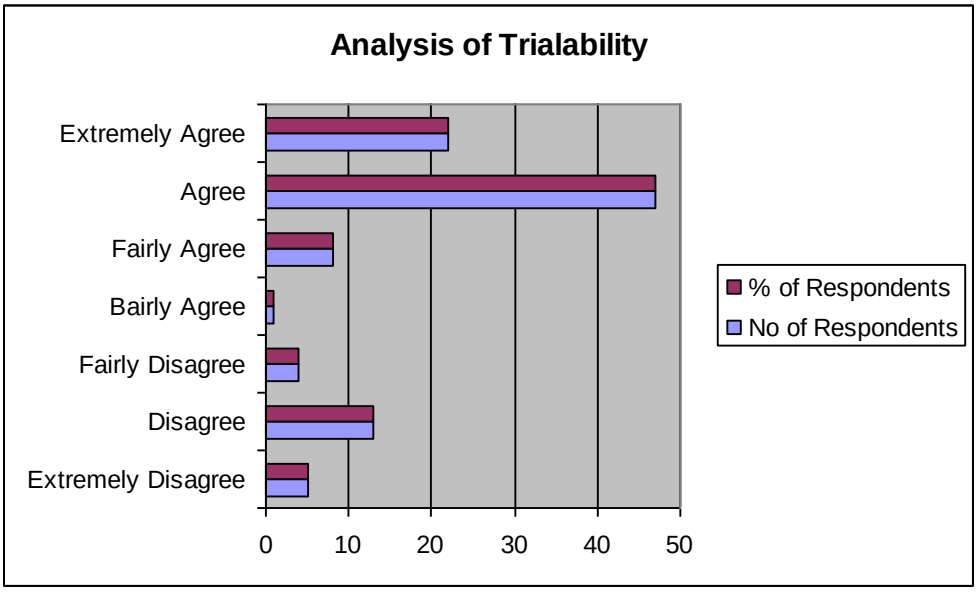

Figure 5. Showing the Response of Secondary School Teachers relating to Trialability

4.7 Cost

This relates to the cost the teachers pay for connecting to the internet (internet connection/subscription fee). This study reveals that there was not much significant difference in cost influencing the adoption/rejection of the internet banking. This is because, the research reveals that 32% of teachers agreed to the statement that: "I prefer paying for the internet connection rather than having to carry cash for my transactions as against 31% that disagreed with the statement. It will be measured with item 16 from Appendix A. Table 6 as well as figure 6 shows the analysis relating to cost of using an internet facilities.

Table 6. Analysis on the Response of Secondary School Teachers relating to Cost

	Extremely Disagree	Disagree	Fairly Disagree	Bairly Agree	Fairly Agree	Agree	Extremely Agree
No of Respondents	6	31	12	2	5	32	12
% of Respondents	6	31	12	2	5	32	12

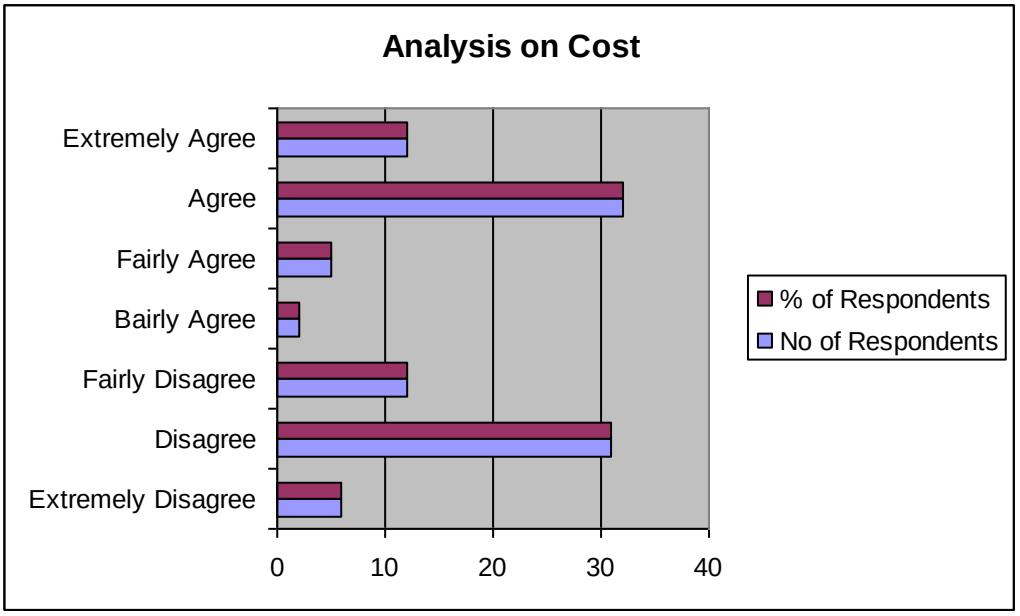

Figure 6 Showing the Response of Secondary School Teachers relating

4.8 Observability

This research reveals the importance of observability in influencing the adoption of a new innovation. This research was in corroboration Roger's submission on diffusion of innovation theory of 2003 where it was stated that observability refers to a product that is visible, conspicuous and communicable will be easily adopted

by the teachers. Rogers' analysis on the diffusion of innovation theory revealed that observability of an innovative product has positive relationship with the rate of adoption and that it is in line with the findings of this research in identifying observability as an influential factor in affecting the adoption/rejection of an innovative product. This study revealed that there were 48% of teachers that agreed to the statement that: "I have seen some members of staff using the internet in their daily transactions", as against 12% of the teachers that disagreed with the statement. There shows a positive relationship between individual's observation based on' perception and rate of adoption of the internet banking. This will be measured with item 17 from Appendix A. Table 7 as well as figure 7 shows the analysis relating to observability.

Table 7. Analysis on the Response of Secondary School Teachers relating to Observability

	Extremely Disagree	Disagree	Fairly Disagree	Bairly Agree	Fairly Agree	Agree	Extremely Agree
No of Respondents	8	12	5	1	6	48	20
% of Respondents	8	12	5	1	6	48	20

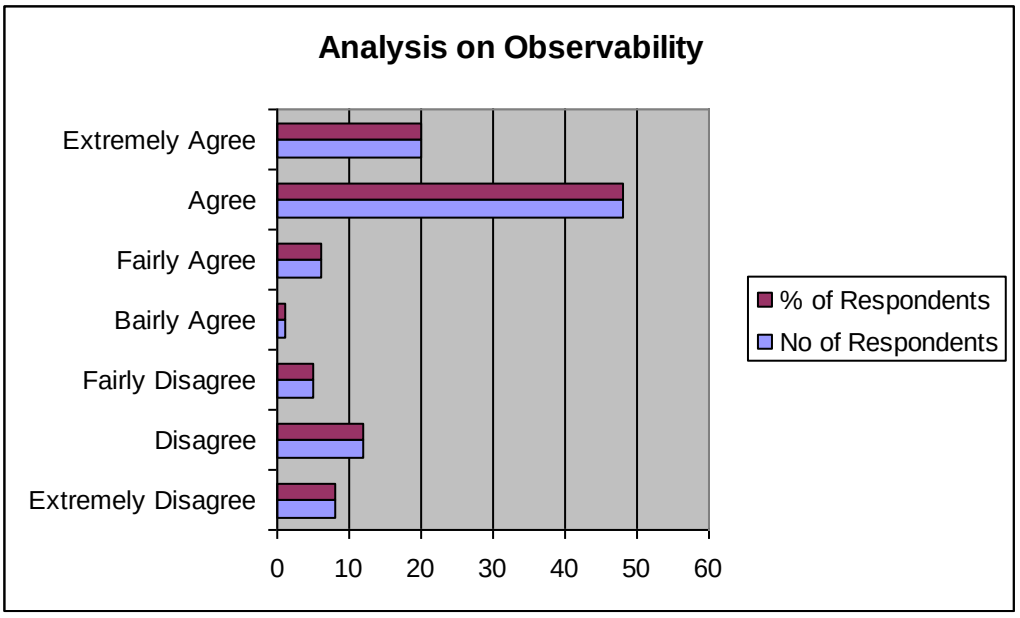

Figure 7 Showing the Response of Secondary School Teachers relating to Observability

Table 8 Showing responses on the relationship between perceived attributes as factors and consumers' engagement with electronic banking technology

Response	Number	Percentage
Strongly Agreed	84	42
Agreed	67	33.5
Undecided	5	2.5
Disagreed	13	6.5
Strongly Disagreed	31	15.5
Total	200	100

Source: Researcher's Survey 2012

From the findings and as indicated in the table 8 above, it shows that majority of the respondents 151 (75.5%) agreed that there is significant relationship between perceived attributes and consumers' engagement with electronic banking.

Table 9. Showing Correlation Analysis Table

x	y	X^2	y^2	xy
1	84	1	7056	84
2	67	4	4489	134
3	5	9	25	15
4	13	16	169	52
5	31	25	961	155
$\Sigma x=15$	$\Sigma y=200$	$\Sigma x^2=55$	$\Sigma y^2=12700$	$\Sigma xy=440$

Source: Field Survey 2012

$$\frac{n\Sigma (X.Y) - (\Sigma X).(\Sigma Y)}{\sqrt{(n\Sigma X^2 - (\Sigma X)^2)(n \Sigma Y^2 - (\Sigma Y)^2)}}$$

The result from the correlation coefficient calculation signifies that there is significant relationship between perceived attributes and consumers' engagement with electronic banking.

Table 10. Student t-test table showing the significant relationship between SMEs and Economic Growth and Development

	Mean	Standard Deviation	Correlation	T-cal values	T-tab values
SMEs & Economic Growth and Development	3.0	48.497	0.7	323.87	0.13

5. Conclusion and Policy Recommendations

The results of this study therefore concludes that the most common influential factors hindering consumers' adoption of electronic banking in Nigeria are relative advantage of economic gains and non-economic gains, social character, communication behavior, trialability as well as observability. However, with reference to this study, it will be recommended that the banks whose customers adopt the electronic banking products especially internet banking, must create channels through which customers' awareness will be enhanced. Banks can do this through marketing strategies such as organizing campaigns, media advert through radio and television, organizing services at the kiosks at the customers' service centre or reception in banks. Furthermore, this study has revealed that in order to boost the percentage of adopters of electronic banking products (internet banking), banks should provides some incentives or inducements such as reduction in the transaction cost so as to boost customers' interest in engaging in online transactions, educating and encouraging the customers in monitoring their bank accounts online, providing enough information on the banks' website so that it will not be difficult for the customers in accessing their accounts through the internet. However, in order to accomplish this task, this study has identified that banks should employ IT trained personnel to monitor and report any fraudulent transaction in order to secure customers' trust on safety risk/security.

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