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Effect of Internet Banking Efficiency and Availability on Customer Trust among Students of Bauchi State Tertiary Institutions

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Abstract— Information technology is driven by Internet usage, which has a significant impact on raising service quality, efficiency and availability. Processes in the banking industry have also advanced, despite complaints from customers about the effectiveness, availability, and credibility of the system. This makes customers hesitant to use Internet banking for commercial transactions. In this study, the effect of Internet banking's efficiency and availability on customer trust was investigated using the E-S-QUAL model and the interpersonal trust model. In this study, data was gathered using a structured questionnaire using a quantitative research technique. Data analysis tools SPSS and PLS-SEM were employed. The outcome also demonstrates that the study's model has a sizable coefficient of determination and strong predictive relevance. This study discovered that customers' trust in Internet banking depends on its efficiency and availability. Finally, customers are concerned about the technological requirements of a website's efficiency, credibility, and availability of the payment options. It is advised that banks make platforms for internet banking services available to consumers outside of regular business hours. Internet banking services should also be particularly efficient, facilitating transactions that are quick, simple, and stress-free.

Keywords— Keywords: Internet Banking, Internet Banking Availability (IBA), Internet Banking Efficiency (IBE), Service Quality, Customer Trust

I. INTRODUCTION

In recent years, the global business climate has transformed due to the development of powerful Internet technologies. Due to the borderlessness of the global market, businesses may now grow their activities to any place without having to have a physical presence there. Internet banking was made possible by advancements in internet technology [1].

Since then, a lot has changed. Internet banking has gained popularity recently since it provides users of a web interface with a quick, easy, and economical way to conduct their financial transactions. However, a number of issues have made it challenging to use the Internet as a tool for commerce. One of the largest issues the business is experiencing, as it is for the majority of other e-commerce industries, is a lack of consumer trust. Building trust might hasten the adoption of online apps. Success in the banking services industry depends on the provision of high-quality services [2]. Monitoring and enhancing service quality is crucial for increasing productivity and revenue in the competitive corporate market of today [3].

Despite a sharp rise in Internet banking over the past several years in Nigeria, many people are still hesitant to utilize it for their financial operations. Trust is one of the most important components of internet banking [4]. The environment in which the Nigerian banking sector functions has been relatively steady since the advent of information technology. However, customers have complained about efficiency and privacy issues, and a lack of confidence is linked to a refusal to use Internet banking [5]. Despite the fact that Internet banking offers a number of benefits, such as quicker transactions and reduced processing costs, a large percentage of clients refrain from utilizing it out of confusion and security concerns. Another issue that hinders Internet banking activities is a lack of trust [6].

But in Nigeria, the use of IT in banking operations has become a problem for all banks operating there, as well as a requirement for global competition and high-quality service [6]. These concerns about accessibility and efficacy of Internet banking have raised questions about how client trust is affected. These concerns include concerns about availability, security and efficiency, lack of confidence, and privacy. Therefore, this study examines how the availability and efficiency of Internet banking among students at Bauchi State Tertiary Institutions affect customer trust.

II. REVIEW OF RELATED LITERATURE

Receiving financial services remotely through the Internet is known as internet banking. Opening a deposit account, moving funds between accounts, and electronic bill display and payment (which allows consumers to receive and pay invoices via a bank's website) [7] are just a few of the traditional and cutting-edge banking services available. Customers can use Internet banking to carry out their regular transactions from anywhere [8]. Two of the most common internet banking activities are paying bills and checking balances [8].

Internet banking, according to Bernstel [9], is the usage of various banking services online. Customers must thus utilize a computer browser to visit the bank's website and through the incorporation of a dedicated server within the bank in order to access these services. Users of the personal computer banking system must fill out their personal information offline before submitting it to the bank's server, in contrast to Internet banking, which does not need access to the bank's private networks.

A. Concept of efficiency of e-service quality in Internet banking

In terms of internet banking, the efficiency dimension of e-service quality denotes that a bank website is simple to use, well-organized, and only asks the user to provide the bare minimum of data [10]. Banking benefits society by providing a framework for investments, savings, trade settlement, and payment. A more accurate definition of using IT to achieve efficient e-service quality would be to meet society's desire for dependable, efficient service delivery at the lowest possible cost. Priorities and objectives are set by the bank's management, who is also in responsible of monitoring performance [11].

B. Concept of availability of e-service quality in Internet banking

Aspects of the availability dimension in internet banking include the website's good technical operation and its capacity to inform users of service availability in real time [12]. It can also keep a website's functionality up and running. Through internet banking, a bank customer may conduct financial transactions from practically anywhere in the world. Thus, the responsibilities of bank tellers and other counter employees are replaced by internet banking. As a result of its technological availability, it can respond to a customer's request extremely quickly [13].

Services are categorized as "deeds, methodologies, and performance" [14]. According to several definitions, quality refers to a product's "fitness for use" and its ability to please consumers by satisfying their demands [15]. A broad assessment or attitude on the superiority of a service [16] is one definition of perceived service quality.

The degree to which a website makes it possible to browse, buy, and have products and services delivered effectively and efficiently is what is meant by the term "electronic service quality" [17].

Contrarily, the ability to have faith in a partner in a transaction is known as trust. When we use the word "trust," we mean that a customer has faith in a brand and expects to get what they desire [18]. Actually, trust is a link between the client and the business. A company's employees may rely on one another. Greater trust among participants in international and multicultural organizations promotes productive partnerships, which ultimately helps the businesses over time [18].

Trust is essential in e-business in general. Because confidence in the internet economy is based on privacy and security [19], The Interpersonal trust in commercial interactions model will be used as the guiding theory for the dependent variable, trust, in order to assess the link between service quality and customer trust.

C. Conceptual Framework and Hypotheses Development

To assess the quality of e-services, the E-S-QUAL and E-RecS-QUAL scores were created [20]. The E-S-QUAL scale is a leading paradigm for e-service quality and is comparable to SERVQUAL in terms of measuring service quality. This research adjusted two of the four E-S-QUAL [20] service quality factors (availability and efficiency).

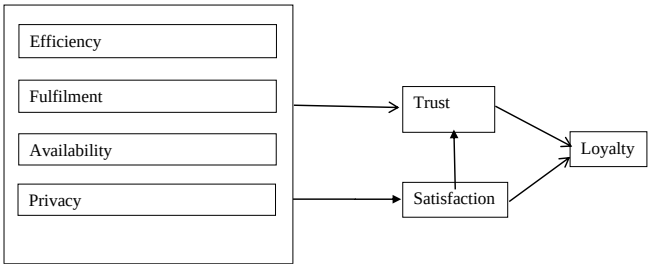

Figure 1: E-service Quality Model
Source: Adopted from Jahromi et al, (2011).

Efficiency [20]: the ease and speed with which the site may be accessed and used, and system availability [21]: the proper technical operation of the site, were two of the four e-service quality aspects outlined by the e-service quality framework. The conceptual research framework for this study is shown in Figure 2, whereas Figure 1 shows the original theoretical framework as produced by [21].

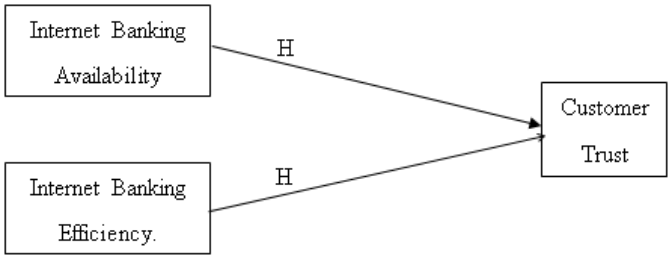

Figure 2: Conceptual Research Framework

H_1: Internet banking availability has significant effect on customer trust:

In the absence of a human connection with the service provider, institutional precautions (such as legislation), according to Zeithaml (2000), such as internet availability, have a significant effect on consumer trust. According to Mohd et al. (2016), the site's availability and functionality encourage customer trust. Their data support the hypothesis that consumer trust is significantly affected by the availability of Internet banking.

H_2: Internet banking efficiency has significant effect on customer trust

Customer trust is highly affected by Internet banking efficiency, according to Gin-yuan (2012) and Zeithaml (2000). On the basis of this, it can be hypothesized that the effectiveness of Internet banking has a considerable effect on customer trust. Customers' trust in a company was shown to be significantly affected by how quickly they can access and use the website's Internet banking (Mohd et al., 2016). They provide evidence that supports the hypothesis that consumer trust is significantly affected by the efficiency of internet banking.

III. OTHER RELATED STUDIES

Research on the relationship between Internet banking use and service quality has been conducted in both industrialized and developing countries. [24] asserts that the impact of computer automation on financial services has greatly improved Lagos-based banks' client service.

Many Malaysian banks provide financial services through internet banking, including bank accounts, cash transfers, credit card and loan payments, professional advice, promotions, and the possibility to use incentives, according to a study by [25]. As a result, a sizable fraction of trust beliefs were discovered, and many of these beliefs have direct connections to loyalty, competence, kindness, and satisfaction.

In a review of studies on online trust, [26] interprets e-quality determinants as trust, i.e., trusting views, and intents to repurchase as trusting intentions. The SERVQUAL model is used to investigate how customer trust is impacted by perceived e-service quality. Three factors—tangibles, empathy, and a combined dependability assurance responsiveness dimension—were shown to be substantially correlated with trust. The poll also revealed that trust is the main element influencing customer satisfaction. The quality elements of the e-service are projected to directly affect e-trust since they operate as dependability indicators for customers [27].

A study [6] found that for consumers to feel confident using online banking, they must be convinced that the transactional medium is secure and that any information they provide to websites won't be captured or given to a third party. According to the research, trust is seen as a key element because of the "spatial and temporal isolation" between the customer and the bank in online banking. As a result, online financial transactions frequently do not take place simultaneously. Because there is no direct physical contact, the nature of service delivery and lack of trust in Internet banking are formed online.

IV. RESEARCH METHODOLOGY

This research used a cross-sectional survey design, which comprises examining one specific group unit at a time and drawing conclusions based on the conditions of the group, in order to ascertain the nature of the relationship between all the study's variables [28]. For the purposes of this study, the population consists of all 28,310 students enrolled in the four selected Bauchi State tertiary institutions: Abubakar Tafawa Balewa University Bauchi (ATBU), Abubakar Tatari Ali Polytechnic Bauchi (ATAP), Bauchi State College of Agriculture, and Aliko Dangote College of Nursing Sciences. The study's overall target demographic and the total number of students from the four universities are displayed in Table 1.

Table 1: Population of the Study

S/No	Institutions	No. of Students	Source	Period
1	ATBU	19,078	ATBU Registry	2018
2	ATAP	6,803	ATAP Registry	2018
3	Col. of Agric	2,272	Col. of Agric Registry	2018
4	Col. Of Nursing Sci.	157	Col. Of Nurs. Registry	2018
	Total	**28,310**		

Source: Registry, 2018

As a result, based on the preceding table provided by [29], the sample size was calculated. For a population of up to 30,000 persons, 379 samples should be used as the minimum number of samples. Since it most closely matched the characteristics of the study's population, cluster sampling was employed to choose the sample [30]. Then, one element is selected from each cluster using an appropriate sampling strategy. Similar to [32], [32] endorsed the notion that clustering is a useful tactic that, depending on the clustering criteria applied, ensures the sample is distributed similarly to the study's population. In Table 2, the total number of samples chosen to represent each institution is displayed in fine detail.

Table 2: Sample Distribution

S/No	Institutions	No. of Students	Sample	Percentage
1	ATBU	19, 078	254	67%
2	ATAP	6,803	91	24%
3	Col. Of Agric	2,272	30	8%
4	Col. Of Nursing Sci.	157	4	1%
	Total	**28,310**	**379**	**100%**

A. Data Collection

A survey tool in the form of a questionnaire was delivered to a sample of 379 respondents from the four institutions. 350 objects in all, or 92 percent, were located. After the information was gathered and input into the SPSS program, only 330 (87%) of the questionnaires were preserved for analysis. This response rate was judged enough for this study based on the assertion made by [32] that a response rate of 30% is suitable for survey research. The acceptable response rate supported the suggestion that the sample size be 5 to 10 times the number of variables [33]. The study also made use of SmartPLS software version 3.0 and IBM-SPSS software version 22.

V. RESULTS PRESENTATION

Table 3 presents the descriptive results regarding the availability of Internet banking based on the respondents' replies. The highest mean is 4.62 for IBA4, closely followed by 4.56, 4.53, and 4.51, respectively, for IBA2, IBA5, and IBA1. The lowest mean is 4.48 for IBA3. IBA1 has the lowest standard deviation (0.54), IBA2 the highest (0.62), IBA3 is next with 0.61, IBA4 is next with 0.61, and IBA5 is last with 0.60. The majority of respondents agreed with the answers provided to the questions in the table.

Table 3: Internet Banking Availability Questionnaire Items

S/no	Questionnaire Items	SD(1)	D(2)	U(3)	A(4)	SA(5)	Mean	St D
IBA1	Internet banking services is always available for transaction.	0 0.0%	2 0.6%	0 0.0%	155 47.0%	173 52.4%	4.51	0.54
IBA2	Internet banking services is available 24/7	2 0.6%	3 0.9%	2 0.6%	124 37.6%	199 60.3%	4.56	0.62
IBA3	Internet banking services is up-to-date	1 0.3%	4 1.2%	3 0.9%	150 45.5%	172 52.1%	4.48	0.61
IBA4	Internet banking services does not crash.	1 0.3%	5 1.5%	1 0.3%	104 31.5%	219 66.4%	4.62	0.61
IBA5	Internet banking services has reduces the time being spent in the banking hall.	1 0.3%	4 1.2%	0 0.0%	138 41.8%	187 56.7%	4.53	0.60

Source: Extracted from IBM SPSS output

Based on the respondents' responses, Table 4 displays the descriptive result for the efficiency of internet banking. IBE2 had the highest mean, 4.54, according to the results, closely followed by IBE1, IBE4, and IBE3 with mean values of 4.47, 4.45, and 4.43, respectively. The least mean, 4.39, is found in IBE5. IBE4 has the lowest standard deviation (0.53), while IBE5 has the highest at 0.65. The majority of responders supported the questions as shown on the table.

Table 4: Internet Banking Efficiency Questionnaire Items

S/no	Questionnaire Items	SD(1)	D(2)	U(3)	A(4)	SA(5)	Mean	St D
IBE1	Internet banking services is fast and effective.	1 0.3%	1 0.3%	1 0.3%	165 50.0%	162 49.1%	4.47	0.56
IBE2	I received quick response while carrying out internet banking transaction	1 0.3%	1 0.3%	1 0.3%	142 43.0%	185 56.1%	4.54	0.56
IBE3	Internet banking services is simple to use	1 0.3%	2 0.6%	1 0.3%	176 53.3%	150 45.5%	4.43	0.57
IBE4	Internet banking services is reliable.	0 0.0%	2 0.6%	0 0.0%	174 52.7%	154 46.7%	4.45	0.53
IBE5	Internet banking services makes it easy for me to get what I want.	0 0.0%	9 2.7%	3 0.9%	167 50.6%	151 45.8%	4.39	0.65

Source: Extracted from IBM SPSS output, 2018

A. Structural Model

After looking at the measurement model, this section analyzes the structural (inner) model. The connection dependency of the assumed model is described by the structural model [34]. As a consequence, Smart PLS' structural model is built to assess the proposed relationships between all constructs and variables. This study discovered five relationships between one dependent variable and five independent variables (IVs) (DV). The direct links between the exogenous and endogenous components were therefore examined by the researchers. The relevance of the path coefficient was assessed using the conventional bootstrapping approach with 5000 bootstrap samples and 330 examples to study the relationship between the variables in Smart PLS [34,35,36].

B. Assessing the level of R^2 in the model

The R2 value of the model shows how much of the variance in the endogenous latent construct is explained by the external latent constructs [33]. Significant, moderate, and weak, respectively, R2 values of 0.26, 0.13, and 0.02 are considered [37]. The sole endogenous construct in this study is customer trust. It can be inferred from the data from smart-pls, which has an R2 value of 0.455, that efficiency and availability combined explain 45% of the variance in customer trust. It suggests that it has a significant R2 value or coefficient of determination, in accordance with the suggested rule of thumb [37].

C. Assessing the effect sizes (f2) of the exogenous constructs

By assessing changes in R2, effect size in Smart PLS demonstrates the relative influence of various exogenous constructs on endogenous constructs [38]. Effect sizes are divided into three categories: small (0.02), medium (0.15), and large (0.35) [37]. It is essential to take into account the effects of a minor interaction effect if it is substantial [39]. Table 14 displays the results of the effect sizes as a result. The result displays the relative impact of every exogenous variable on each endogenous variable in the structural model. The following measurements describe how the two factors affect consumer trust: The impact size of internet banking efficiency is 0.054, whereas the effect size of internet banking availability is 0.021 [37].

D. Determining the predictive relevance (Q2)

In Smart PLS, predictive relevance is used to evaluate the quality or goodness of fit of a model. The blindfold technique is suggested to evaluate a model's predictive usefulness [40,41]. If the calculated Q2 value is greater than zero (0), the exogenous structures have predictive value for the endogenous construct under investigation [35]. The research model's predictive relevance is 0.213, which satisfies the condition of being more than zero and demonstrates the model's respectable predictive relevance.

D. Hypotheses Testing

The following two direct hypotheses were developed in order to ascertain their acceptance or rejection in line with the research questions:

H1: Internet banking availability has significant effect on customer trust

H2: Internet banking efficiency has significant effect on customer trust

The two hypotheses tested were non directional (2-tail), and the results on table 16, show that the two IVs have significant effect on the DV.

It is said that statistical t-values that differ considerably from 0 are typically always statistically significant. The p-value is used to assess if the routes are significant since it varies considerably on the degree of freedom, confidence interval, and direction of the hypothesis [35].

The 1-tail test is therefore significant if the t-value is more than 1.645 (p 0.05), the 2-tail test is significant if the t-value is greater than 1.96 (p 0.05), and the 3-tail test is significant if the t-value is greater than 2.58 (p 0.001) [33]. Table 5 displays the conclusions of the hypotheses together with the t-value, p-value, and choice. All two hypotheses have been shown to be true based on the findings in the table since they are very significant.

Table 5: Hypotheses Result

Hypotheses	Relationship	*t*-Value	*p*-Value	Decision
H1	AVAILABILITY -> CUSTOMER TRUST	2.294	0.023*	Supported
H2	EFFICIENCY -> CUSTOMER TRUST	2.145	0.032*	Supported

*p<0.001, *p<0.05

Source: Extracted from Smart PLS output, 2019

VI. RESULTS AND DISCUSSION

After running the bootstrapping procedure for the model, all the two research questions were answered and tested.

A. Internet banking efficiency and customer trust

How has customer trust been affected by internet banking efficiency was the first research question. Based on the first hypothesis, which states that internet banking efficiency has a significant effect on customer trust, this has been addressed. The hypothesis's t-value of 2.145 indicates that it was significant at less than 5% (p=0.032), according to the outcome of the test. This suggests that the amount of consumers' trust was significantly affected by how efficiently the internet banking service operated. This has demonstrated that having efficient internet banking services that can facilitate transactions more quickly and easily than traditional banking services has a significant effect on customer trust. This was in line with a research by [26] that looked at the impact of perceived e-service quality on customer trust and discovered that the efficiency of internet banking had a big impact on trust. This was consistent with a study by [26] that examined the effect of perceived e-service quality on customer trust and found that internet banking's efficiency had a significant influence on trust.

B. Internet banking availability and customer trust

The third research question asks what effect the availability of internet banking has had on customer trust. This has been addressed by the second hypothesis, which holds that the efficiency of internet banking has a significant effect on customer trust. It is significant at less than 5% (p=0.023) and has a t-value of 2.294, proving its importance. According to the premise, giving customers access to cutting-edge technology and internet banking services around-the-clock would have a significant and direct effect on their level of trust. Thus, it becomes evident that having greater access to a variety of internet banking choices has a major positive effect on customers' trust. According to the study by [28], site efficiency, reliability, and stability in performance are essential in developing consumer trust in an online retail firm when it comes to internet banking.

The results of the study show that each of the two criteria has a direct and significant relationship with customers' trust. If these elements are enhanced, users' level of trust in internet banking services would surely rise.

This study provided evidence in favor of a study by [26] that examined the relationship between customer trust and perceived e-service quality and found a sizable association between the two. According to the survey, service quality is the main element affecting customer trust, which is in line with a research by [27]. The quality elements of the e-service have a direct influence on e-trust since they operate as markers of trust for customers. Finally, the study provided evidence in favor of a study by [28] that discovered that in the context of internet banking, site efficiency, reliability, and stability of performance are essential for developing consumer trust in an online retail firm.

C. Summary of Findings

The results of the examination of the measurement model show that the research model has achieved reliability, convergent validity, and discriminant validity. All loadings of composite reliability over the threshold of >7.0 and discriminant validity were shown by the square root of each construct's AVE being bigger than its greatest correlation with any other construct. Furthermore, convergent validity was reached (AVE of not less than 0.4). In the second portion of the investigation, the structural model was examined, and the assumptions were also examined. According to the thumb rule [37], it has a substantial coefficient of determination with an R2 value of 0.472, which demonstrates that 50% of the variance in the DV (customer trust) is explained by both components. The effect size (f 2) reveals that all two IVs had a minimal influence on the DV based on the standard set out by [37]. A useful measure of the research model's predictive relevance is its predictive relevance (Q2) value of 0.213, which satisfies the condition of being greater than zero and demonstrates the model's high predictive relevance [35]. The two hypotheses have all been accepted or supported due to their high significance levels. At the 5% level of significance, two of the hypotheses have p-values of 0.023 and 0.032 (p0.05).

VII. CONCLUSION & RECOMMENDATION

The study's conclusions showed how crucial e-service features are for establishing customers' trust in internet banking. The response indicates that the variables have a considerable effect on consumer trust. Because they frequently open their first accounts and, with the proper care, have the potential to become profitable retail customers for banks in the future, students at tertiary institutions represent an alluring market segment that serves as a barometer for the potential profitability of the banking and financial services industries. Therefore, if banks want to succeed in higher education, they should focus more on discovering the best methods to satisfy students with their services. They must be concerned with the features of the SERVQUAL model by necessity (availability and efficiency). Customers assess quality along its dimensions, and banks may decide which areas of their service offerings need improvement based on those dimensions, which explains why this is the case. Conclusion: The efficiency of the banks' services has a significant effect on customer trust, which is crucial to their overall performance.

The bank needs to make sure that customers have access to ATMs and pin pads for cash withdrawals, deposits, and utility bill payments outside of usual business hours. Internet banking services ought to be especially effective in cutting down on the time, effort, and tension involved in transactions. By installing these devices outside of banking

institutions, such as airports, hospitals, schools, restaurants, and retail malls, among other locations, the system will be more easily available to customers. This will greatly increase consumer trust.

DEDICATION

This paper is dedicated to my late mom (Maryam Bint Halima).

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