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RESEARCH ARTICLE

Motivation Behind E-Trust of Electronic banking Channels by Banks

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Abstract: This quantitative study attempts to validate the adoption of electronic banking channels by commercial banks for operational performance. The study was a survey that adopted a structured self-designed questionnaire to elicit data from management staff selected from commercial banks in Cross River states using proportional and simple random sampling techniques. Descriptive statistics and Pearson Product Moment correlation was used to analyse the collected data. Electronic banking channels were measured by automated teller machines and internet banking to analyse the data, and this was measured continuously. Analyse results validates the adoption of electronic banking channels (Automated teller machines and Internet banking). The study suggests factors that improve digital banking for bank profitability and operational performance based on these findings.

Keywords: Electronic banking channels, Automated Teller machines, internet banking, operational performance

1. Introduction

In recent times the banking sector and other financial institutions have undergone profound transformation owing to the complex and competitive environment that they find themselves in. This change has resulted from a growing customer base, increased competition, and eagerness to meet the increasing needs of modern customers. (Ardakani, Ardakani, & Ardakani, 2015). This change has been the adoption of electronic banking technology and other forms of information technology (Angioha, Erukoha, Agba & Ikuzamah, 2020; Erukoha & Angioha, 2020). Before adopting electronic banking, the banking process was tedious and took a lot of time (Lin, Wang & Hung, 2020; Attah & Angioha, 2018). The adoption of electronic banking platforms has changed the way that banks deliver their products and services globally.

Electronic banking has moved banking into a menu-driven era where robust banking applications are applied to banking services. These banking applications provide virtually all banking functions relying heavily on stored and collected information (Magboul & Abbad, 2018). According to Kim, Adeli, Fang, Vilhalba, Arneeth and Khan (2011), electronic banking is a broad term that represents a wide range of different products and services such as automated teller machines services and direct deposit. Automated bill payment (ABP), Computer banking (PC Banking) and electronic fund transfer (Kolodinsky, Hogart & Hilgart, 2004). These technologies are being adopted to provide better services to their



customers who seeks convenient services and reduce the operational cost of banks (Liao & Cheung,2002). Electronic banking has revolutionised the lives of individuals such that it is now considered a wave of information revolution after the industrial and agricultural revolution.

In Nigeria, the introduction of electronic banking technology to banking operations has brought about a reaction characterised by a fundamental change in the content and quality of services and banking business (Attah & Angioha, 2019; Eukoha & Angioha, 2020). As a result, banking services have been carried out in the simplest form through automated teller machines (ATM), point of sales (POS), internet banking platforms, USSD. This has allowed bank customers to carry out banking transactions even after banking hours (Eukoha & Angioha, Angioha, Eukoha, Agba, & IKhizamah, 2020).

In Nigeria, the introduction of electronic banking technology to banking operations has brought about a reaction characterised by a fundamental change in the content and quality of services and banking business (Attah & Angioha, 2019; Eukoha & Angioha, 2020). As a result, banking services have been performed in the simplest form through automated teller machines (ATM), point of sales (POS), internet banking platforms, USSD. This has allowed bank customers to carry out banking transactions even after banking hours (Eukoha & Angioha, 2019; Angioha, Eukoha, Agba, & IKhizamah,2020).

However, despite the apparent benefits of electronic banking, a closer observation reveals the presence of queues in banking halls, problems of frequent network failures, and inadequate awareness of E-banking products (Balachandher Santha, Norhazlin & Rajendra, 2001). In banking halls in the country, it is common to see bank cashiers complaining of poor network while collecting cash from customers or processing customer complaints. Queues at ATMs are familiar sights, and customers are often frustrated due to the slow nature of dispensing cash. It is also not uncommon to hear bank customers complaining of being debited wrongly or their inability to assess their account balance. Communications over the internet can be insecure and often congested, and banks sometimes have to deal with the challenges that come with the use of internet services such as security, quality of services and various aberration in electronic finance. (Guardian,2001). So, has the adoption of electronic banking platforms been affecting the operational performance of commercial banks? This study seeks to answer this question by assessing the correlation between electronic banking technology and the operating performance of commercial banks.

2. Research Method and Materials

2.1. Design and Instrumentation

The survey method was adopted for this study Survey Method is one of the most widely used non-experimental research designs across disciplines to collect large amounts of survey data from a representative sample of individuals sampled from the targeted population. The survey is proper when research study subjects are asked the same question as possible under the same circumstance. The survey method became eminent since the researcher had to combine the staff of the different banks, and as such same questions was given to all study subjects. In adopting the survey design, the researcher adopted both quantitative and qualitative data collection methods for this study. The goal is to establish a 'representation' of what bank staff think about electronic banking Channels' effect on commercial banks workers' effectiveness. Using both quantitative and qualitative methods, the researcher was able to triangulate the response of the study subjects. A structured questionnaire developed in a Likert scale format and an Interview schedule was used to elicit the necessary data for this study

2.2. Participant Selection

The Research subjects were drawn from the staff of commercial banks in Cross River State that permitted the researchers to carry out the study in their banks. The banks are Access Bank, Fidelity Bank, First Bank, First Monument Bank, Guaranty Trust Bank, Union Bank,



United Bank for Africa, and Zenith Bank. According to information released by the selected banks, the staff strength of all the banks stands at 757. The computation is highlighted in table 1. 400 participants were used for the study. This was derived from applying the Taro Yamane Sample Size Determinant Technique.

The computation of how the sample size was arrived at is given below;

Taro Yamane sample determination technique formula =

$$n = \frac{N}{1 + N(e)^2}$$

Where n = Sample size
 N = Finite population
 e = Level of significance (or limit of tolerable error)
 1 = Unity (a constant)

Therefore, the population of the selected bank stands at 757 (Bank report, 2019) at a level of 0.05 significance.

$$n = \frac{757}{1 + 757(0.05)^2}$$

$$n = \frac{757}{758(0.0025)}$$

$$n = \frac{757}{1.895}$$

$$n = 400$$

the proportional stratified and simple random sampling technique in selecting the sample from the study institutions. Proportional sampling technique was used in selecting the number of samples that were used from each bank. This was used because the proportional sampling technique allows for a fair selection of samples according to the population of a particular stratum. In this study, the organisations were stratified according to the banks, and the samples were selected according to the population of the bank. This is highlighted in table 2.

Also, the proportional sampling technique was used to select the sample from each bank branch. This was done by using the proportion of each bank that was arrived at. This is shown in table 3. Finally, the simple random sampling technique was used in selecting the sample in each bank branch. The method was used because it gives every member of each bank branch the opportunity to be selected for the study

Table 1: Population Distribution bank

S/N	Bank	Population size (N)
1	First Bank	259
2	Fidelity Bank	41
3	GT Bank	64
4	Access Bank	58
5	First City Monument Bank	80
6	Zenith Bank	157
7	United Bank of Africa	54
8	Union Bank	44
	Total	757

Source: Field Work, 2021



Table 2: Sample of Banks

S/N	Bank	Bank Population size (N)	Proportion of Staff	Sample Size (n)
1	First Bank	259	0.34	137
2	UBA	54	0.07	28
3	GTB	64	0.08	34
4	FCMB	80	0.11	42
5	Access Bank	58	0.08	31
6	Zenith Bank	157	0.21	83
7	UBN	44	0.06	23
8	Fidelity Bank	41	0.05	22
	Total	$\sum N=757$		$\sum n= 400$

Source: Fieldwork, 2021

Table 3: Sample of Bank Branch

Bank	Branch	Bank Branch Population Size (N)	Proportion of Staff	Sample Size (n)
FBN	Calabar Main	66	0.25	40
	Obudu	36	0.14	19
	OGoja	17	0.06	9
	Akamkpa	15	0.06	8
	Ekorinim	17	0.06	9
	8miles	20	0.08	11
	Main Avenue	20	0.07	11
	Ndidem Usang	32	0.12	10
	EPZ	19	0.07	6
	Iman	17	0.06	5
Total		$\sum N= 259$		$\sum n=137$
UBA	Calabar Rd main	18	0.33	10
	Calabar Rd.	14	0.30	8
	Calabar Rd	12	0.22	6
	Ikom	10	0.2	5
Total		$\sum N=54$		$\sum n=29$
GTB	Calabar main	34	0.53	10
	Calabar Mariam	27	0.42	8
	Ikom	3	0.04	1
Total		$\sum N=64$		$\sum n=19$
Access Bank	Calabar Rd.	17	0.46	9
	Calabar Gbogobiri	13	0.35	7
	Ogoja	7	0.19	4
Total		$\sum N=37$		$\sum n=20$
FCMB	Calabar Rd.	40	0.5	22
	New secretariat	25	0.31	12
	Ikom	15	0.18	8
Total		$\sum N=80$		$\sum n=43$
UBN	Calabar	26	0.59	14
	Akampka	8	0.18	4
	Ogoja	10	0.23	5
Total		$\sum N=44$		$\sum n=23$
Fidelity Bank	Unical	15	0.36	8
	Calabar Main	16	0.39	9
	Ikom	10	0.24	5
Total		$\sum N=41$		$\sum n=22$
Zenith Bank	Mary Slessor	27	0.17	8
	Calabar Main	53	0.33	16
	Ikom	25	0.15	7
	Ogoja	26	0.16	8
	Chamley	26	0.16	8
Total		$\sum N=157$		$\sum n=47$

Source: Fieldwork, 2021



2.3. *Data Analysis Procedure*

After the reliability test and all necessary modifications, the instrument was administered directly to the chosen sample for the study with the help of research assistants. The researchers and research assistants gave out four hundred copies of the questionnaires. The possibility of retrieving back a large portion of the instrument and covering the entire state necessitated the employment of five research assistants. The researchers and the research assistants divided themselves into three groups of three each. Each group covered a Senatorial District. The researchers carried out the oral interview on four of the employees of commercial banks who held management positions. The collection of data covered five months. Data collected for the distribution of the questionnaire from the field was first coded, then entered coded data into the statistical package for Social Science. Data were analysed using descriptive analysis before subjecting the result to correlation analysis.

2.4. *Ethical procedure*

A letter seeking approval for the study was obtained from the office of the Head of Department, and copies were sent to the management of 12 commercial banks in Cross River State. Eight of the banks approved for the study to be carried out. The researcher also attached a letter of ethical approval to each research instrument distributed to the research participants. A verbal explanation of the reason behind the research was also explained to the participants. Their anonymity was also assured.

A total of 400 copies of the questionnaires were administered, out of which only 393 were retrieved for analysis, which accounts for a 98.3 per cent response rate. Seven (7) copies of the questionnaire were either wrongly filled or not completed.

2.5. *Description of Research variable*

The content objective of the study is to validate the motivation behind the adoption of electronic channels for the operational performance of commercial banks. The study specifically seeks to;

- 1) Examine the correlates between Automated Teller machines (ATM) and the operational performance of commercial banks.
- 2) Investigate the relationship between internet banking and the operational performance of commercial banks.

Two hypothetical research questions were raised based on the specific objectives and are stated in the null form.

- 1) Automated Teller Machines (ATM) does not significantly correlate with the operational performance of commercial banks.
- 2) There is no significant relationship between internet banking services and the operational performance of commercial banks

3. **Results and Discussion**

3.1. *Biographic distribution of data*

A total of 400 copies of the questionnaires were administered, out of which only 393 were retrieved for analysis, which accounts for a 98.3 per cent response rate. Seven (7) copies of the questionnaire were either wrongly filled or not completed. Table 4 shows the respondent's distribution by gender. Out of 393 study subjects, 203 (51.6%) were female, while only 190 (48.4%) were male. This clearly showed that most study subjects who work in the organisation were females. This is not surprising because there are more in the population.

Also, Table 4 shows the study subjects' distribution by age. Out of 393 study subjects, 19 (4.8%) were between 18-24 years of age, 89 (22.6%) were between 25-31 years of age, 175 (44.5%) were between 32-37 years of age, 50 (12.7%) were between 38-44 years, 40 (10.2%)

were between 45-51years, and 20 (5.1%) were 52 years of age and above. Similarly, Table 4 shows that, out of the 393 study subjects, 119 (30.3%) were single, 215 (54.7%) were married, 49 (12.5%) were divorced, and only 10 (2.5%) of the study subjects were widowed.

From Table 4, out of 393 study subjects, 137 (34.9%) study subjects have HND as their highest educational qualification, 147 (37.4%) have bachelor's degree as their highest academic qualification, and 109 (27.7%) have master's degree as their highest educational qualification. Equally, Table 4 shows the religious affiliation of study subjects. From the table, out of 393 study subjects, 353 (89.8%) study subjects were Christians, 30 (7.6%) were Muslim, and 10 (2.5%) were African Traditional worshippers. Correspondingly, all the 393 (100%) study subjects used for this study agreed that they use electronic banking.

Table 4: Personal data of study subjects

Variables	Units	Frequency	Percentages (%)
Sex of study subjects	Male	190	48.4
	Female	203	51.6
	Total	393	100.0
Age of study subjects	18-24 years	19	4.8
	25-31 years	89	22.6
	32-37 years	175	44.5
	38-44 years	50	12.7
	45-51 years	40	10.2
	52 years and above	20	5.1
Total	393	100	
Marital status	Single	119	30.3
	Married	215	54.7
	Divorced	49	12.5
	Widowed	10	2.5
	Total	393	100
Education level	HND	137	34.9
	Bachelor's degree	147	37.4
	Master's degree	109	27.7
	Total	393	100
Religion	Christianity	353	89.8
	Muslim	30	7.6
	ATR	10	2.5
	Total	393	100
Do you use electronic banking	Yes	393	100
	No	0	0
	Total	393	100

Source: Fieldwork, 2021

3.2. Data Analysis

3.2.1. Analysis of the Objective One

Examine the correlates between Automated Teller machine (ATM) and the operational performance of commercial banks? The questions in section B subsection 1 of the instrument were generated from this objective. Frequency and percentages were first used to answer this research question and reported in Table 5 and figure 1 before the data were subjected to parametric statistics to test for statistical significance and reported in Table 6.

Table 5: Response on Automated Teller Machine (ATM)

S/N	Statements	SA		A		D		SD	
		N	%	N	%	N	%	N	%
1	ATM gives bank customers access to funds at ease without entering the bank building	187	47.6	206	52.4	0	0	0	0
2	ATM permits customers to enter the bank's bookkeeping system with a plastic card containing a PIN	138	35.1	246	62.6	9	2.3	0	0
3	ATM offers plenty of banking services to	129	32.8	214	54.5	50	12.7	0	0



S/N	Statements	SA		A		D		SD	
		N	%	N	%	N	%	N	%
4	customers ATMs go to the extent of given accounts balances and bill payments to customers	116	29.5	158	40.2	119	30.0	0	0
5	Banks use ATMs to gain a competitive advantage	135	34.4	229	58.3	29	7.4	0	0

Source: Fieldwork, 2021

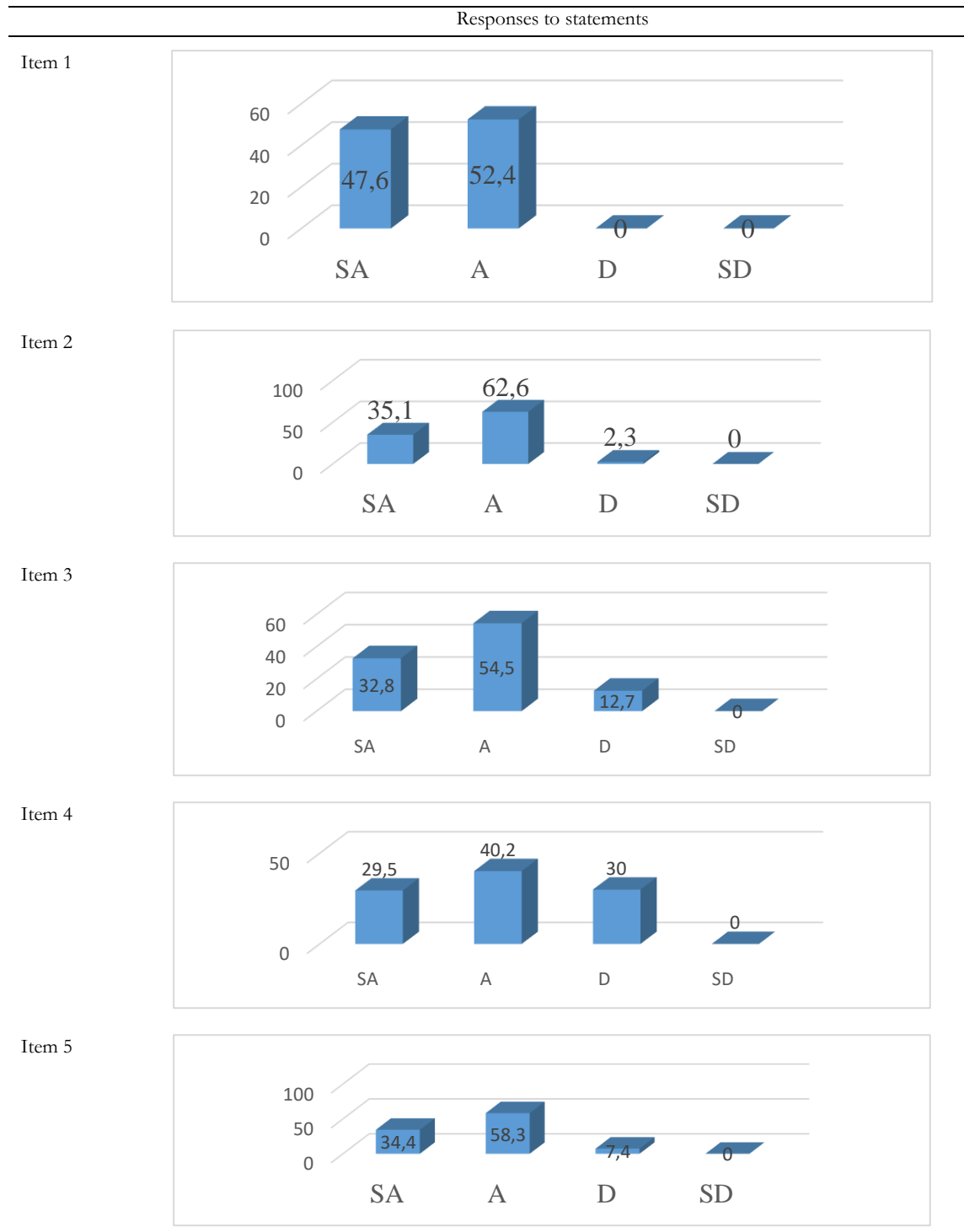


Figure 1: Graphical Presentation of Response on Automated Teller Machine (ATM)

For reporting purposes, strongly agree and agree was reported as agreed, while disagree and strongly disagree was reported as disagreed to each of the statements in the sub-scale. As presented in Table 4.3, there are five items in this sub-scale used to measure the level of extent Automated Teller Machines (ATM) correlates with the operational performance of commercial banks. Out of these five (5) items, most of the study subjects' 60% and above, agreed to all the items in the sub-scale.

As presented in Table 5, out of the 393 study subjects used for this study, all the study subjects, 393 (100%), agreed that ATMs gives bank customers access to funds at ease without entering the bank building. Whether ATM permits customers to enter the bank's bookkeeping system with a plastic card containing a PIN, 384 (97.7%) study subjects agreed while only 9 (2.3%) disagreed with the statement. Also, for item 3, 343 (87.3%) of study subjects agreed that ATMs offers many banking services to customers, while 50 (12.7%) disagreed with the statement. Item 4 shows that 274 (69.7%) of study subjects agreed that ATMs go to the extent of giving accounts balances and bill payments to customers, while 119 (30.3%) disagreed with the statement. On whether Banks use ATMs to gain competitive advantage, 364 (92.6%) study subjects agreed while only 29 (7.4%) disagreed with the statement.

Based on this result in Table 5 and figure 1, overall, the extent of association between automated teller machines (ATM) and operational performance of commercial banks in Cross River State, Nigeria, is high. This result was further subjected to parametric statistics (Pearson Product Moment Correlation) to establish whether the extent of the relationship is statistically significant, and the result is presented in Table 6

3.2.2. Hypothesis Testing

The first hypothesis states that Automated Teller Machines (ATM) does not significantly correlate with the operational performance of commercial banks. The independent variable in this hypothesis is Automated Teller Machine (ATM). This was measured continuously, while the dependent variable is the operational performance of commercial banks. This variable was measured continuously too. The items used to test this hypothesis were derived from the items in Section B, subsection 1 of the research instrument analysed using descriptive analysis. Pearson product-moment correlation coefficient was used to test this hypothesis at 0.05 level of significance, and the result is presented in Table 6.

Table 6: Pearson product-moment correlation between Automated Teller Machine (ATM) and the operational performance of commercial banks

Variable	N	Mean	SD	r-value	Sig.	R ²
Automated Teller Machine (ATM)	393	12.21	2.02	0.649	.000*	0.42
Operational performance of commercial banks	393	18.08	2.09			

*Significant at 0.05 level; $df = 391$; Critical r -value = 0.098
Source: Field survey, 2021

As presented in Table 4.8, the result was statistically significant $r(391) = 0.649$; $p < 0.05$. This was because the calculated r -value of 0.649 was greater than the critical r -value of 0.098, at 0.5 alpha (α) level of significance. This means that the null hypothesis, which states that Automated Teller Machines (ATM) does not significantly correlate with the operational performance of commercial banks, is rejected while the alternate hypothesis is retained. The squared correlation $(0.649)^2$, which is a measure of effect size, indicates the proportion of explained variance on the dependent variable. Therefore, 42.1% of the variance in the operational performance of commercial banks is accounted for by Automated Teller Machine (ATM). The magnitude of the effect is large. This means that Automated Teller Machine (ATM) correlates positively with the operational performance of commercial banks (this is because of the sign of the r -value). Therefore, an increase in the use of Automated Teller Machine (ATM) directly leads to an increase in the operational performance of commercial banks. Thus, we can conclude that there is a statistically

significant correlation between automated teller machines (ATM) and the operational performance of commercial banks.

3.2.3. Analysis of Objective Two

Investigate the relationship between internet banking and the operational performance of commercial banks? The questions in section B subsection 2of the instrument was generated from this objective. Frequency and percentages were first used to answer this research question and reported in Table 7 and figure 2 before the data were subjected to parametric statistics to test for statistical significance and reported in Table 8. For reporting purposes, strongly agree and agree was reported as agreed, while disagree and strongly disagree was reported as disagreed to each of the statements in the sub-scale. As presented in Table 4, there are five items in this sub-scale used to measure the relationship between internet banking and the operational performance of commercial banks. Out of these five (5) items, most of the study subjects' 60% and above, agreed to all the items in the sub-scale.

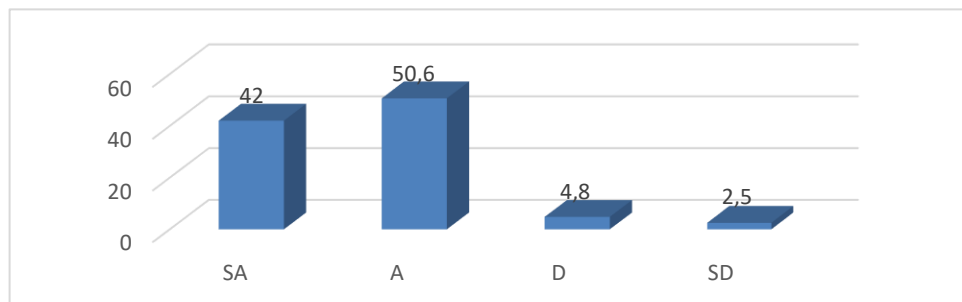
Table 7: Response on internet banking

S/N	Statements	SA		A		D		SD	
		N	%	N	%	N	%	N	%
1	Through the help of computer gadgets, banks render easy services to their customers	165	42.0	199	50.6	19	4.8	10	2.5
2	Telephone banking is used to resolve customers complains	97	24.7	266	67.7	20	5.1	10	2.5
3	The bank electronically connects with the customer	119	30.3	196	49.9	59	15.0	19	4.8
4	Electronically financial transactions can be managed appropriately without a customer physical presence in my bank	116	29.5	208	52.9	59	15.0	10	2.5
5	Electronic connections help banks to control financial transactions from far destinations	196	49.9	140	35.6	28	7.1	29	7.4

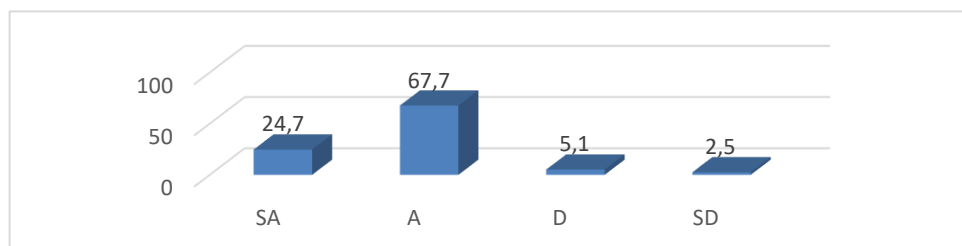
Source: Fieldwork, 2021.

Responses to statements

Item 1



Item 2



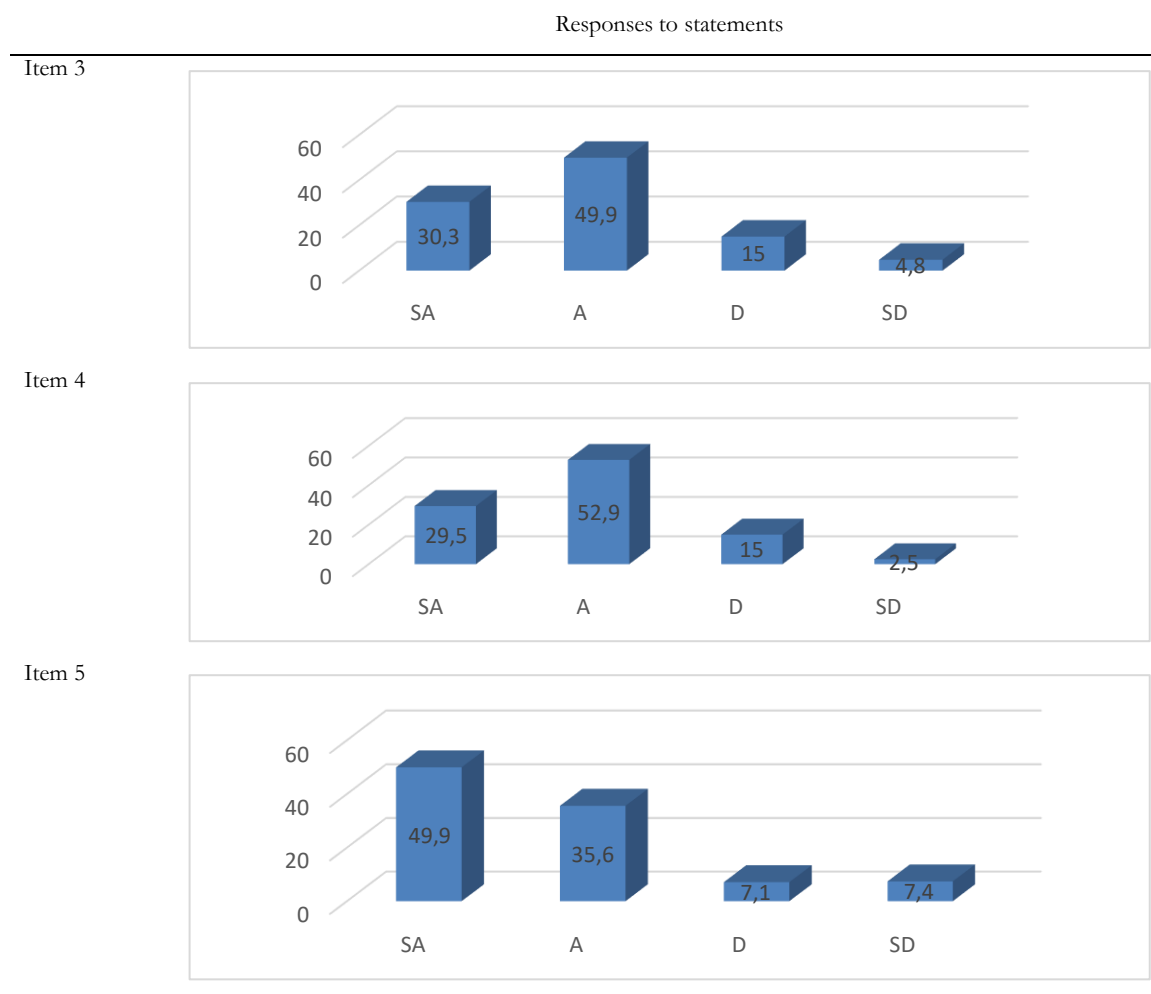


Figure 2. Graphical Presentation of Response on internet banking

As presented in Table 7, out of the 393 study subjects used for this study, many study subjects 364 (92.6%) agreed that through the help of computer gadgets, banks render easy services to their customers. On whether telephone banking is used to resolve customers complaints, 363 (92.4%) study subjects agreed while only 30 (7.6%) disagreed with the statement. Also, for item 3, 315 (80.1%) of study subjects agreed that the bank connects with the customer electronically, while only 78 (19.9%) disagreed with the statement. Item 4 shows that 324 (82.4%) of study subjects agreed that electronically financial transactions could be managed appropriately without a customer physical presence in my bank, while 69 (17.5%) disagreed with the statement. Whether Electronic connections help banks control financial transactions from far destinations, 336 (85.5%) study subjects agreed while only 57 (14.5%) disagreed with the statement.

Based on this result in Table 7 and figure 2, overall, there is a relationship between internet banking and the operational performance of commercial banks in Cross River State, Nigeria. This result was further subjected to parametric statistics (Pearson Product Moment Correlation) to establish whether the extent of the relationship is statistically significant, and the result is presented in Table 8.

3.2.4. Hypothesis Testing

The second hypothesis states that there is no significant relationship between internet banking services and the operational performance of commercial banks. The independent variable in this hypothesis is internet banking; this was measured continuously, while the dependent variable is the operational performance of commercial banks. This variable was

measured continuously too. The items used to test this hypothesis were derived from the items in Section B, subsection 2 of the research instrument analysed using descriptive analysis. Pearson product-moment correlation coefficient was used to test this hypothesis at 0.05 level of significance, and the result is presented in Table 8

Table 8: Pearson product-moment correlation between internet banking and the operational performance of commercial banks

Variable	N	Mean	SD	r-value	Sig.	R ²
Internet banking	393	14.38	2.87	0.268	.000*	0.07
Operational performance	393	18.08	2.09			

*Significant at 0.05 level; $df = 391$; Critical r-value = 0.098
Source: Field survey, 2020

As presented in Table 8, the result was statistically significant $r(391) = 0.268$; $p < 0.05$. This was because the calculated R-value of 0.268 was greater than the critical R-value of 0.098, at 0.5 alpha (α) level of significance. This means that the null hypothesis, which states that there is no significant relationship between internet banking and the operational performance of commercial banks in Cross River State, Nigeria, is rejected while the alternate hypothesis is retained. The correlation coefficient is a standardised measure of an observed effect. It is a commonly used measure of effect size, and R-values of ± 0.1 represent a small effect, ± 0.3 represent a medium effect, while ± 0.5 is a large effect.

The squared correlation $(0.268)^2$, which is a measure of effect size, indicates the proportion of explained variance on the dependent variable. Therefore, internet banking accounts for 7.1% of the variance in commercial banks' operational performance. The magnitude of the effect is negligible. This means that internet banking correlates positively with the operational performance of commercial banks (this is because of the sign of the r-value). Therefore, banks that encourage their customers to increase the use of internet banking directly leads to an increase in operational performance of such banks. Thus, we can conclude that there is a statistical significant relationship between internet banking and the operational performance of commercial banks.

3.3. Discussion of Findings

This study tries to validate the motivation behind the adoption of electronic banking channels by commercial banks. Data was collected from 400 bank employees using a questionnaire survey instrument. Data were analysed using descriptive and parametric statistics. From the analysis of the respondent's biographic data, it was discovered that a large majority of them (66.9%) were between the ages of 25 and 37 years of age. Also, the percentage of women bankers used was slightly more (51.6%) than that of men (48.4%). In terms of qualification, all the study subjects had at least a Higher National Diploma, which is considered the equivalent of a B.Sc. this is because to be qualified to work in a commercial bank, one must have attended a higher institution. Most of the study subjects (89.8%) per cent are practising Christians. This is due to the study being carried out in the Southern part of Nigeria, where Christianity is mostly practised. Working in a financial institution requires an employee to have at least a minimum knowledge of information technology. Hence all study subjects (100.00%) know the use of electronic banking practice.

From the descriptive analysis carried out to check the extent to which Automated Teller Machines (ATM) correlates with the operational performance of commercial banks. The result revealed that all study subjects (100.00%) agreed that the introduction of ATMs has drastically reduced the number of customers they deal with daily. ATM innovation in the banking industry has helped stimulate expansion. It provides various services to bank clients hitherto performed by a bank teller or cashier in a banking hall in public areas far from the bank. The introduction of electronic banking channels has created opportunities that give commercial banks a competitive advantage over other banks and financial service providers. This is evident in the response of the study subjects, where a large percentage of study subjects (92.6%) argued that the introduction of ATM Machines had given commercial banks a competitive advantage, allowing customers to have access to cash with

going through the stress of going into the banking hall. The availability of automated teller machines in public spaces has alleviated the problem of customers visiting bank premises to make simple bank transactions. Using an ATM card, bank customers can electronically have access to their account to perform various transactions such as deposit money, withdrawals, check balance, transfer, make payments, pay bills, and even make subscriptions (Jegede, 2014). This assertion is confirmed by this study where 83.7 per cent reported that ATM offers plenty of banking services to customers

This result from the descriptive statistic was further subjected to parametric statistics (Pearson Product Moment Correlation) to establish if the extent of the relationship is statistically significant. The result from the analysis revealed that there was a statistically substantial $r(391) = 0.649$; $p < 0.05$. This result also indicated that 42.1% of the variance in the operational performance of commercial banks is accounted for by Automated Teller Machine (ATM). The magnitude of the effect is significant. This means that Automated Teller Machine (ATM) correlates positively with the operational performance of commercial banks. Therefore, we can conclude that an increase in the use of Automated Teller Machine (ATM) directly leads to an increase in operational performance of commercial banks.

Akpan (2016) study findings are in accordance with this. Analysing the correlation between ATM service quality and customer satisfaction in the banking sector found that the better the quality of service, the better the satisfaction. Massoud, Saunders & Scholnick (2003), using the database from the 1996 – 2001 period, analyzed the effect of ATM surcharges on large versus small banks found that ATM increases the market share of large deposit banks.

Banks' introduction of internet banking channels provided bank clients with real-time, convenient and fast service that enabled them to carry out their transactions through a portable internet-connected device. Internet banking has provided commercial bank customers with access to online transactions such as payment of bills, transfers, checking of balance and much more. As confirmed by this study, internet banking has enhanced the operational performance of commercial banks in the study area. According to the study subjects (92.6%), computer devices and internet connections have made it easy to attend to customers. This is because, with an internet connection, bank employees can render services that were hitherto difficult and took a lot of time quickly and at a perfect turnaround time. Also, 92.6 per cent of the study subjects reported that internet banking allows bank employees to resolve customer complaints effectively and at a speedy turnaround time. Also, most of the study subjects (80.1%) reported efficiently responding to a customer not present through an internet connection. The result from the descriptive analysis was subjected to parametric statistics at 0.05 confidence level.

This result from the descriptive statistic was further subjected to parametric statistics (Pearson Product Moment Correlation) to establish if the extent of the relationship is statistically significant. The result was statistically significant $r(391) = 0.268$; $p < 0.05$. This implies that internet banking accounts for 7.1% of the variance in commercial banks' operational performance. This is in accordance with the findings of Ciciretti, Hasan and Zazzara (2008), who found that providing Internet banking services significantly improves the operational efficiency of banks. The performance is measured by return on average assets (ROAA) and average equity (ROAE). Giordani and Floros (2013) study revealed a positive relationship between the adoption of internet banking services by Greek banks and the diminishing of their overall operating expenses. The study by Dinh, Le and Le (2015) revealed that internet banking had improved the profit outcome of commercial banks.

The findings from the analysis of the two variables validate the adoption of electronic banking channels by commercial banks and support Enoruwa, Ezeum, and Nwani (2019), who examined the impact of electronic banking and the performance of commercial banks. From the regression analysis carried out, the result revealed that electronic channel products significantly relate to the performance of banks. Rabi, Ladan, Usman, and Garba

(2019) found that the adoption of electronic banking channels by commercial banks have improved their efficiency in terms of electronic services, reduced the time that customers are attended to, allowed new customers to open account without visiting the banking premises.

4. Conclusion and Policy Implication

Commercial banks' adoption of electronic channels is designed to give them a competitive edge and meet the diverse needs of their growing customer base. Though, not all reports are glowing About the adoption of electronic channels. Evidence exists about the lack of trust in E-channels and many customers not being comfortable with E-channels for transactions, especially in rural areas. Hence, bank management needs to build confidence in digital banking through improved customer relationship management (CRM) And improved personalised banking services. Nigeria is yet to fully harness the full potentials of electronic banking channels like most developed nations. This can be done by improving service efficiency, network stability, stable electricity, customer disputes on time and security.

References

- Akpan, S. J. (2016). The Influence Of ATM Service Quality On Customer Satisfaction In The Banking Sector Of Nigeria. *Global Journal of Human Resource Management*. 4 (5), pp.65-79
- Angioha, P. U., Enuokoha, C. U., Agba, R. U., & Ikhizamah, G. U. (2020). Information Technology Predictor Variables and Employee Productivity in Commercial Banks. *JINAV: Journal of Information and Visualization*, 1(1), 44-52. <https://doi.org/10.35877/454RI.jinav178>
- Ardakani, S. H. M., Ardakani, M. S., & Ardakani, M. F. (2015). A study about customer satisfaction of e-service quality of point of sale (POS). *Academic Journal of Economic Studies*, 1(2), 120-131.
- Attah, F. M., & Angioha, P. U. (2019). Examining The Level Of Relationship Between Working Condition Predictor Variables; Remuneration, Working Hours, Office Design, Job Security And Workers Wellbeing And Productivity In Commercial Banks. *International Journal of Scientific and Research Publications (IJSRP)*, 9(5), 552-557.
- Balachandher K. G., Santha V, Norhazlin I. & Rajendra P, (2001).Electronic Banking in Malaysia: *A Note on Evolution of Services and Consumer Reactions*.
- Ciciretti, R., Hasan, I. & Zazzara, C. (2008). Do Internet Activities Add Value? Evidence from Traditional Banks. *Journal of Financial and Services Research*, 35, 1, pp. 81-98.
- Dinh, V., Le, U., & Le, P. (2015). Measuring the impacts of internet banking to bank performance: Evidence from Vietnam. *The Journal of Internet Banking and Commerce*, 20(2), 1-5.
- Enoruwa, K. O., Ezeum, D. M., & Nwani, C. O. (2019). Electronic Channels and Bank Performance: Empirical Evidence from Nigeria. *International Journal of Economics and Management Studies*, 6(5), 37-46. <https://doi.org/10.14445/23939125/ijems-v6i5p107>
- Enuokoha, C. U., & Angioha, P. U. (2019). Management Support for the Use of Information Communication Technology in Commercial Banks in Cross River State, Nigeria: Examining Its Relationship with the Productivity of Workers. *Journal of Banking and Finance Management*, 2(3), 1-7.
- Giordani, G. & Floros, C. (2013). How the internet affects the financial performance of Greek banks. *International Journal of Financial Services Management*, 6, (2), pp. 170-177.
- Jegede, C.A. (2014). Effects of Automated Teller Machine on the Performance of Nigerian Banks. *American Journal of Applied Mathematics and Statistics*, 2(1), 40-46. <https://doi.org/10.12691/ajams-2-1-7>
- Kim, T.H., Adeli, H., Fang, W.C., Villalba, J.G., Arnett, K.P. and Khan, M.K. (2011). Security technology in Kim, T.H., Villalba, J.G. & Arnett, K.P (eds.), *International Conference, SecTech 2011 proceedings, Jeju Island, Korea, December 8-10, 2011*, pp. 106-123.

- Kolodinsky, J. M., Hogarth, J. M., & Hilgert, M. A. (2004). The adoption of electronic banking technologies by US consumers. *International Journal of Bank Marketing*, 22(4), 238–259. <https://doi.org/10.1108/02652320410542536>
- Liao, Z.Q. & Cheung, M.T. (2002). Internet-based e-banking and consumer attitudes: An empirical study', *Information and Management*, 39(4), 283–292.
- Lin, W. R., Wang, Y. H., & Hung, Y. M. (2020). Analyzing the factors influencing adoption intention of internet banking: Applying DEMATEL-ANP-SEM approach. *PLOS ONE*, 15(2), e0227852. <https://doi.org/10.1371/journal.pone.0227852>
- Magboul, I., & Abbad, M. (2018). Antecedents and adoption of e-banking in bank performance: The perspective of private bank employees. *Interdisciplinary Journal of Information, Knowledge, and Management*, 13, 361- 381
- Massoud, N., Saunders, A. & Scholnick, B. (2003). The impact of ATM surcharges on large versus small banks: Is there a customer relationship effect?
- Rabiu, I. D., Ladan, S., Usman, H. A., & Garba, M. (2019). Impact of E-banking on the Operational Efficiency of Banks in Nigeria. *International Journal of Academic Research in Business and Social Sciences*, 9(2). <https://doi.org/10.6007/ijarbss/v9-i2/5527>