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Effect of Cashless Policy on Bank Efficiency in Ondo North Senatorial District, Ondo State, Nigeria

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Abstract:
The cashless policy has brought confusion among the masses as many misconceived the term to be a policy where there is no more cash in circulation but only credit and debit card and other instruments are used as a mean of transaction. Many still believed that, the cash limit set by Central Bank of Nigeria (CBN) in respect of cashless policy is too low and query how the CBN arrived at the bench-mark. The study was a descriptive survey. Data were collected with a structured questionnaire. The participants were 354 employees selected from 7 commercial banks in the Ondo North Senatorial District of Ondo State. This study employed Probit Model Analysis.
The findings revealed that bank cashless policy had a significant effect, with 84.5% increase of the variations in return on assets. The findings also revealed that automated teller machines (ATM), debit and credit cards, point of sales (POS) and mobile banking had a higher moderating effect than electronic funds transfer and internet services on cashless policy of commercial banks in study area. Based on the findings of the study, it can be concluded that cashless policy affects efficiency of commercial banks in the study area. It is therefore recommended to the management of commercial banks to explore and implement sustainable business linkages and collaborations with automated teller machines, debit and credit cards, point of sales and mobile banking service providers as well as the electronic funds transfer and internet service providers as a way of accelerating the penetration of cashless policy and eventually creating desired impacts in the economy.

Keywords: *Return on assets, automated teller machine, debit & credit cards, point of sale, mobile banking, internet banking*

1. Background to the Study

Cashless policy is a policy where transaction can be done without necessarily carrying physical cash as a means of exchange of transaction but rather with the use of credit or debit card payment for goods and services (Roth, 2010). Despite the undeniable benefits of cashless policy on bank efficiency emanating from empirical or theoretical literature it has attracted the attention of a variety of groups; scholars, investors, public, entrepreneur, banks management, traders, governments and so on in Ondo North Senatorial District of Ondo State, Nigeria. The cashless policy has brought confusion among the populace as many misconceived the term to be a policy where there is no more cash in the circulation but card and other instruments. Many still believe that, the cash limit set by Central Bank of Nigeria (CBN) in respect to cashless policy is too low and query on how the Central Bank of Nigeria arrived at the bench-mark. Notwithstanding the fact that the cashless policy come with enormous benefits; there are also some missing links that confronted the policy such as financial constraints, infrastructure, deficit, literally levels, fraudulent activities and poor power supply in Nigeria.
As more payment systems have been introduced, analysts have predicted the emergence of a 'cashless society'. Today, we still pay with cash and cheques, but several other payment instruments, such as credit and debit cards, are widely used. The use of paper money is declining, but at a rather slow pace. As it were, Nigeria is a country heavily dominated by cash and there are some factors that negatively affect the choice of cash over non-cash instruments. Some of these include time spent in counting and verifying cash, susceptibility to loss, time spent in the banking halls, amongst others (Nader, 2011).

The potential benefits of cashless policy have become a debate about whether and how their adoption improves bank efficiency. Several attempts have been made to investigate the impact of cashless policy on bank efficiency. Kariuki (2015) established that banks with high profit growth are more likely to be using cashless tools like; ATMs, POS and mobile terminal. Oshikoya (2017) suggested that the use of and investment in cashless policy requires complementary investments in skills, introduction and improvement on customer deposits service, investment and change entails risks and costs which might reduce bank profits in shorter term. Hence there is need to use some non-financial efficiency measures such as efficiency and effectiveness to assess the impact of cashless policy investment on banking efficiency. Also, the study seeks to establish whether cashless policy influence return on total assets of commercial banks in Ondo

North Senatorial District of Ondo State. These are the gaps the study seeks addressed in this study.The study is organised into the following sections, section one introduces the study, section two captures empirical literature and theoretical underpinnings. Section three specified the estimated technique method adopted for the study while section four shows the result output and interpretations. Finally, section five contains the summary, conclusion and recommendations.

2. Theoretical Underpinnings and Empirical Literature

The study is based on Technology Acceptance Theory (TAT) propounded by Davis, Bagozzi, and Warshaw (1989).The theory explains the conceptual model that users' intention or acceptance degree towards information system or new technology. TAT is constructed on the foundations of perceived usefulness and perceived ease of use. Perceived usefulness refers to individual belief to improve the degree of job performance through using particular new technology and information system. Perceived ease of use indicates how easy an individual learns how to operate or use new technology or information system (Davis *et al* 1989; Gefen and Helleiner, 2003). The model places more emphasis on how perceived ease of use would positively affect perceived usefulness. Exogenous variables such as environment are also the antecedent that induces perceived usefulness and perceived ease of use. Thus, TAT is based on both important perceptive factors as perceived usefulness and perceived ease of use.TAT is widely applied on the research of information technology. Liu and Arnett (2000) examined the significant variables to build a successful website based on TAT theory. Gefen and Helleiner (2003) combined TAT and rust to propose an integrated model for explaining online consumer behavior. Pavlou (2003) proposes e-commerce acceptance model of online consumers by separating and applying experiment designs and survey.

Relevant literature has come out strongly from several writers like Dew (2007), Lerner (2016), Nader (2011), Agboola (2006), Malhotra and Singh(2009), Hernando and Nieto (2007), DeYoung (2005), Oshikoya (2017), Olatokun and Igbinedion (2009), Tunji (2013), Akhalumeh and Ohiokha (2012), Muyiwa(2013) and James (2013)that cashless policy have positive effects on bank performance indicators. They have agreed on the transformational effects of cashless policy on bank performance and operational efficiency. However other scholars like; Ayoola (2013), Oyewole and Abiodun (2013), Delgado (2007), Hernando and Nieto (2007), Onay, Ozsoz and Heivacroglu(2008),Malhotra and Singh (2009),Cheng (2011), Mohammad and Saad (2011), Alsmadi and Al-wabel (2014), found out that cashless policy has a negative effects on bank performance efficiency indicators. These mixed results and alternative views from different countries and writers are mainly as a result of lack of comprehensive analysis of multiple cashless policy and bank efficiency indicators. This study intends to take a departure from past studies and incorporate additional vital variables that were omitted by previous studies like electronic funds, transfer systems, mobile banking and point of sale terminal. Also, most of the reviewed studies in the context of cashless policy on bank efficiency in Nigeria did not critically consider the effects on regional banking (Muyiwa, 2013; Oshikoya, 2017) which this study intended doing. There is also concentration of cashless-efficiency studied on profitability and mostly in developed and emerging economies leaving a paucity of bank efficiency literature for Africa and Nigeria specifically. This literature gap is addressed by this comprehensive study.

3. Methodology

3.1. Area of Study

The study was conducted in OndoNorth Senatorial District, Ondo State, Nigeria. The district is made up of six (6) Local Government Areas (LGAs) which include Akoko South West, Akoko North West, Akoko South East, Akoko North East, Ose and Owo. It has three (3) federal constituencies, namely; Akoko South West/Akoko North West, Akoko South East/Akoko North East and Ose/Owo. The major towns in the district are: Ikare, Oka, Akungba, Supare, Oba, Okeagbe, Arigidi, Ogbagi, Ikaramu, Akunu, Igasi-Eriti, Isua, Idoani, IfonOrolu, Owo and Emure. The people of the district are predominantly Yoruba.

3.2. Research Design

This study made used of survey research design. The research techniques used were both quantitative and descriptive to estimate the parameters of the specified variables, which showed the effect of cashless policy on bank efficiency in Ondo North Senatorial District and testing the stated research questions of the study. The questionnaire is divided into two sections in order to capture the objectives of the study. The questionnaire is for commercial bank staffs/employees as following: The first section requires the respondents' identification/bio data information such as gender, marital status, age, assess and years of experience etc. The second section contains a number of response items on the effect of cashless policy on return on total income of commercial banks in Nigeria.

3.3. Sources of Data and Method of Data Collection

To achieve the objectives and answer research questions raised for the study, the study collected information from junior employees and senior employees from selected commercial banks in the study area through a well-structured and validated questionnaire. The questionnaire was administered on 354 sample size randomly selected from commercial banks in Ondo North Senatorial District, Ondo State Nigeria. The questionnaire was used to obtain information on demographic characteristics of the respondents on effect of cashless policy on bank efficiency in Ondo North Senatorial Districtin the study area.

3.4. Population of the Study

A population consists of all conceivably or hypothetically possible observations relating to a given phenomenon, while a sample is simply a part of a population (Freund & Williams, 1982). The targeted population of the study oneffect of cashless policy on bank efficiency in Ondo North Senatorial District of Ondo State. For the purpose of this study a total population of 3,100 staff of commercial bank was used for the study. The target population for this work includes both senior and junior staff of the selected banks

S/No	Names of Bank	Senior Staff	Junior Staff	Total
1.	Access bank	300	150	450
2.	First Bank	300	150	450
3	Eco Bank	300	100	400
4	Heritage Bank	300	150	450
5	Skye Bank	300	150	450
6	Zenith Bank	300	150	450
7	WEMA Bank	300	150	450
	Total	2, 100	1,000	3, 100

Table 3.1: Population Distribution
Source: Fieldwork 2018

3.5. Sample Size and Sampling Technique

The study employed multi-stage stratified sampling technique inselectingthe sample for the study. In the first stage, a local government was randomly selected from each of the six local governments from the study area has been stratified into the following areas; Akoko South West, Akoko North West, Akoko South East, Akoko North East, Ose and Owo. The second stage was random selection of LGA headquarters and any notable towns in the local government from each of the six (6) local government areas. That is, in Akoko South West LGA: Oka, and AkungbaAkoko was randomly chosen; in Akoko North East LGA: IkareAkoko was chosen, Akoko North West: OkeagbeAkoko and Ogbagi Akoko wasselected, Ose local government: Ifon and Idoani wasselected while Owo will be selected in Owo LGA. The final stage was random selection of fifty-nine (59) respondents per commercial bank in each local government area giving a total of 354 respondents in all.

The list of commercial bank present inOndo North Senatorial District was assessed and a sample was determined from using the Taro-Yamani (1976) formula. The study applied simple random sampling procedures to obtain the respondents for the questionnaires on cashless policy and its effect on bank performance in Ondo North Senatorial District of Ondo State.

Determination of the Sample Size for the study, Taro Yamane's formula was used thus;

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

Where;
N = Total Population
E = Level of error of tolerance (0.05)
1 = Constant
n = Total Sample Size
Substituting the various surveyed population in the above formula:
N = 3100

$$n = \frac{3100}{1 + 3100(0.05)^2} = \frac{3100}{8.75}$$

$$= \frac{3100}{8.75}$$
$$= 354$$
n = 354 respondents

S/No	Local Government	Notable Town	Banks	No Questionnaire	Sample	Sample Size
1.	Akoko North West	OkeagbeAkoko&OgbagiAkoko	First bank Skye bank Heritage bank	20 20 19	59	$\frac{354}{6} = 59$
2.	Akoko South East	IsuaAkoko	First bank Skye bank Wema bank	20 20 19	59	$\frac{354}{6} = 59$
3.	Akoko South West	Oka Akoko&AkungbaAkoko	First bank Skye bank Access bank Zenith bank	15 15 15 14	59	$\frac{354}{6} = 59$
4.	Akoko North East	IkareAkoko	First bank Skye bank Heritage bank Eco bank Wema bank	12 12 12 12 11	59	$\frac{354}{6} = 59$
5.	Ose	Ifon&Idoani	First bank Skye bank Wema bank	20 20 19	59	$\frac{354}{6} = 59$
6.	Owo	OwoTown	Wema bank Skye bank First bank	20 20 19	59	$\frac{354}{6} = 59$
Total				354	354	59

Table 1: Shows the Breakdown of the Population and the Sample Size for This Study
Source: Research Field Work, 2018

However, it was cumbersome to assess the entire population due to time and financial constraints as highlighted in the limitations of the study. The study applied simple random sampling procedures to obtain the respondents for the questionnaires in Ondo North Senatorial District of Ondo State.Simple random sampling method was employed in selecting the respondents for the research study.

3.9. Model Specification

Multinomial Probit model (MPM) model has been used in many studies including those of Maddala, 1983; Weingartner 1977. The class of probalistic choice models, multinomial logit model describes the cashless policy and its effect on bank performance when allows the simultaneous comparison of more than one contrast (i.e. dependent variable with more than two categories). The generalized probits are defined as log of the probability of each category over the probability of the response category. The probit model is a widely used statistical model for technology adoption study. Its employment in the social sciences goes back at least to econometrics in the early 1960s (Maddala, 1983; Weingartner, 1977). Probit models are generalized linear models with a probit link:

$\eta = \Phi\text{-}1\ (\mu)$ ---------- (1)

The inverse of the normal CDF is in effect a standardized variable, or a Z score. As with the probit model, the probit model is used for studying a binary outcome variable. We may express probit model in probability as:

$$Prob(y = 1) = F\left[-\sum_{k=1}^{k} \beta_{kX_k}\right] = F\left[\sum_{k=1}^{k} \beta_{kX_k}\right] = \varphi\left[\sum_{k=1}^{k} \beta_{kX_k}\right] ----------(2)$$

where the more general form of distributive function, *F*, is replaced by the standard normal cumulative distribution function, Φ. Unlike the logit model, which may take on two major forms – one expressing the model in logit (and a transformed version expressed in odds) and the other expressing the model in event probability – the probit model takes on only one intuitively meaningful form, because a probit model expressed in η is a linear regression of the Z score of the event probability. The equation for probability of movement is then

$$Prob\ (y\ =\ 0) =\ 1 - \Phi\ \left[\sum_{k=1}^{k} \beta_{kX_k}\right] ----------(3)$$

3.9.1. Return on Assets Model

Following Hasan, Schmiedel and Song (2010), the empirical relationships between cashless policy and total income of commercial banks is specified as follows:

In this study the following were the regression equations that were used to test the significance of the study hypotheses:

3.9.1.1. Objective

To establish whether cashless policy influence return on total assets of commercial banks in Nigeria. The following is a multiple linear regression equation used to determine the effect of cashless policy on the return on assets of commercial banks.

The Return on Assets model in this study is expressed as follows:

$$RAS = \beta_0 + \beta_1 ATM_1 + \beta_2 DCC_2 + \beta_3 POS_3 + \beta_4 MB_4 + \beta_5 IB_5 + \beta_6 EFT_6 + \quad --(4)$$

Return on assets will be measured by total mean result from strongly agreed (AS) from the questionnaire divided by 4-likert scale to get a percentage return on assets.

Where:

$\beta_1 - \beta_6$ = regression coefficients (parameters)
RAS = Return on Assets
EFF = Efficiency
TD = Total Deposit
ATM = Automated teller machine
DCC = Debit & Credit Cards
POS = Point of Sale
MB = Mobile Banking
IB = Internet Banking
ε= Error term, which is identically and independently normally distributed with mean zero and constant variance σ^2

4. Data Analysis and Discussions

4.1. Response Rate

Primary data was collected between June and August 2018 using a questionnaire while a self-constructed data collection sheet was used to collect secondary data. Three hundred and fifty-four (354) questionnaires were issued to randomly selected bank senior and junior staffs from seven (7) commercial banks. Three hundred and thirty-five (335) questionnaires were returned representing a 92% response rate. The response rate is considered adequate given the recommendations by Saunders, Lewis and Thornhill (2007) who suggested a 30-40% response, laud Mugenda and Mugenda (2003) advised on response rates exceeding 50% and Hager, Wilson, Pollack and Rooney (2003) recommend 50%. Based on these assertions, this implies that the response rate for this study was adequate.

4.2. Analysis of the Objective

This section presents the findings and discussion in the order of the objective of the study. Frequencies and descriptive statistics are presented first followed by inferential statistics. The questionnaire responses were based on a Likert scale which was coded with numerical values for ease of data analysis. The values assigned to the Likert were SD=strongly disagree, D=disagree, A=agree and SA=strongly agree.

4.3. Effect of Cashless Policy on Return on Assets

The objective of the study was to determine the influence that cashless policy have on return on assets of commercial banks in Ondo North Senatorial District. The objective was assessed by use of statements which were on the questionnaire where the respondents indicated their degree of agreement with the statements.

S/N	ITEMS	SA	A	SD	D	Mean	STD
1.	ATMs influence reduction of operational costs and hence better return on assets for the bank	107 (32.0)	136 (40.7)	39 (11.7)	52 (15.6)	2.10	1.02
2.	ATMs investments have payback period of less than 3 years and hence good return on assets	99 (29.6)	175 (52.4)	58 (17.4)	2(0.6)	1.88	0.68
3.	Incomes from ATMs have had positive impact on bank income margins	78 (23.4)	154 (46.1)	26 (7.8)	76 (22.8)	2.29	1.06
	Average total					3.135	1.38

Table 2: Automated Teller Machines (ATMs)
Source: Field Survey, 2018

Data on Table 4 showed responses on statements regarding the effects of ATMs on thereturn on assets of commercial banks. 72.7% of the respondents agreed that ATMs influence reduction of operational costs and hence better

return on assets for the bank while 27.3% were disagreed with the statement. Also, ATMs investments have payback period of less than 3 years and hence good return on assets, 82% agreed, while 18% disagreed with the statement. On the Incomes from ATMs have had positive impact on bank income margins, 69.5% agreed while 30.5% disagreed. The mean score of responses regarding ATMs was 3.13 on a 4-point scale. The average overall standard deviation of 1.38 infers that 8% of the responses were spread within one standard deviation of the overall mean. The standard deviation for each response line is also shown on the Table 4. The standard deviation statistical rule of 58%, 68% and 60% indicated in all the interpretations in the study. This means that one standard deviation has58% of the data spread around the mean and 68% for two standard deviations and 60%for three standard deviations.

The findings indicate that ATMs have the potential to generate income for banks and hence the aggressive ATM network expansion by commercial banks in Nigeria. Another development relates to partnerships between banks and intermediate financial institutions in terms of sharing ATM platforms indicating the potential that ATM machines have in enhancement of bank incomes. Moreover, ATM machines are now located at nontraditional locations like at the petrol stations, supermarkets, universities and colleges and in the rural areas, indicating the importance that banks attach to ATM machines in reaching and maintaining customers and strategically earning fees for their use.

S/N	Items	SA	A	SD	D	Mean	STD
4.	Debit & credit cards influence reduction of operational costs and hence better return on assets for the bank	107 (32.0)	165 (49.4)	38 (11.4)	24 (7.2)	1.93	0.84
5.	Debit & credit cards investments have payback period of less than 3 years and hence good return on assets	37 (11.1)	228 (68.3)	61 (18.3)	8(2.4)	2.11	0.61
6.	Incomes from debit & credit cards have had positive impact on bank income margins	181 (54.2)	108 (32.3)	30 (9.0)	15 (4.5)	1.63	0.82
	Average total					2.83	1.13

Table 3: Debit and Credit Cards
Source: Field Survey, 2018

Debit and credit cards were seen to influence bank profitability through bank charges, this showed that about 81.4% of the respondents agreed while 18.6% were disagreed with the statement as laid on Table 5 on whether debit and credit cards influence reduction of operational costs and hence better return on assets for the bank, 79.4% agreed that debit & credit cards investments have payback period of less than 3 years and hence good return on assets while 20.6% were disagreed with the statement and 86.5% agreed that incomes from debit & credit cards have had positive impact on bank income margins about while 13.5% disagreed with the statement. The mean score of the responses was 2.83 which indicate that majority of the respondents agreed with the statements on the assertion that debit and credit cards had the potential of improving bank return on assets. The average standard deviation of 1.13 means.

S/N	ITEMS	SA	A	SD	D	Mean	STD
7.	POS terminals influence reduction of operational costs and hence better return on assets for the bank	67 (20.1)	165 (49.4)	78 (23.4)	24 (7.2)	2.64	1.94
8.	POS terminals investments have payback period of less than 3 years and hence good return on assets	157 (47)	82 (24.6)	52 (15.6)	43 (12.9)	1.94	1.06
9.	Incomes from POS terminals have had positive impact on bank income margins	67 (20.1)	165 (49.4)	78 (23.4)	24 (7.2)	2.17	0.83
	Average Total					3.37	1.91

Table 4: POS Terminals
Source: Field Survey, 2018

Table 4 showed that 69.5% agreed with the assertion that POS terminals influence reduction of operational costs and hence better return on assets for the bank while 30.5% disagreed with the statement, 71.6% agreed that POS terminals investments have payback period of less than 3 years and hence good return on assets while 28.4% were

disagreed with the statement. Also 69.5% agreed that incomes from POS terminals have had positive impact on bank income margins while only 30.5% agreed. The mean score of the responses is 3.37 which show that POS terminals influence positively reduction in return on bank assets. The average standard deviation of 1.91 indicates that average total of the responses was spread within one standard deviation from the mean score.

S/N	ITEMS	SA	A	SD	D	Mean	STD
10.	Mobile banking influence reduction of operational costs and hence better return on assets for the bank	76 (22.8)	176 (52.7)	40 (12)	39 (11.7)	2.50	4.05
11.	Mobile banking investments have payback period of less than 3 years and hence good return on assets	181 (54.2)	108 (32.3)	30 (9.0)	15 (4.5)	1.63	0.82
12.	Incomes from mobile banking have had positive impact on bank income margins	72 (21.6)	202 (60.5)	34 (10.2)	26 (7.8)	2.24	1.12
	Average total					3.18	2.99

Table 5: Mobile Banking
Source: Field Survey, 2018

Data on Table 5 showed that mobile banking influence reduction of operational costs on return on assets. Those who agreed that mobile banking influence reduction of operational costs and hence better return on assets for the bank were 75.5% while only 24.5% disagreed. The mean score of 3.18 indicated that majority of the respondents agreed that mobile banking influence reduction of operational costs and hence better return on assets for the bank. The standard deviation of 2.99 means that majority of the responses were spread within one standard deviation around the mean. Banks have managed to create collaborations with mobile telephony providers whichhave increased the type and number of transactions that banks and customers canconduct on the mobile phone and thus creating more opportunities for income generationfor banks.

S/N	Items	SA	A	SD	D	Mean	STD
13.	Internet banking influence reduction of operational costs and hence better return on assets for the bank	56 (16.8)	48 (14.4)	41 (12.3)	189 (56.6)	2.24	0.89
14.	Internet banking investments have payback period of less than 3 years and hence good return on assets	28 (8.4)	106 (31.7)	53 (15.9)	147 (44.0)	1.88	0.96
15.	Incomes from internet banking have had positive impact on bank income margin	75 (22.2)	181 (54.2)	69 (20.7)	10 (3.0)	2.04	0.73
	Average Total					3.08	1.29

Table 6 : Internet Banking
Source: Field Survey, 2018

Table 4.4 showed that 68.9% of the respondents disagreed on whether internet banking influence reduction of operational costs and hence better return on assets for the bank while 31.1% agreed. On whether Internet banking investments have payback period of less than 3 years and hence good return on assets 59.9% disagreed and only 40.1% agreed. The mean score for the responses was 3.08 on a 4-point scale indicating that internet banking did not lead to increased return on assets in view of the respondents' opinions. The responses were spread within a standard deviation of 0.915 from the mean.

Notable recent examples include banks like Nigeria Commercial Bank, Access Bank and Skye bank changed their core banking platforms. This shows the value that banks have on online systems of banking. Due to the investment in internet banking, banks in Nigeria have managed to serve corporate customers from their offices through internet links which involves accessing their bank accounts and transacting from their office premises. This has led to reduction and control of banks' operational costs and hence better profits leading to improved return to assets.

S/N	Items	SA	A	SD	D	Mean	STD
16.	Electronic funds transfer influence reduction of operational costs and hence better return on assets for the bank	62 (18.6)	52 (15.6)	151 (45.2)	69 (20.7)	2.3	1.01
17.	Electronic funds transfer investments have payback period of less than 3 years and hence good return on assets	32 (9.6)	24 (7.2)	92 (27.5)	186 (55.7)	1.96	0.81
18.	Incomes from electronic funds transfer have had positive impact on bank income margins	184 (55.1)	34 (10.2)	50 (15.0)	66 (19.8)	2.1	0.85
	Average total					3.18	1.33

Table 7: Electronic Funds Transfer (EFT)
Source: Field Survey, 2018

Table 7 showed a mean score of 34.2% which indicates that few of the respondents disagreed that EFT has the ability to influence return on bank assets positively. For example, 16.81% agreed that EFT influenced positively commission fee incomes of banks while 83.2% disagreed. Electronic funds transfer investments have payback period of less than 3 years and hence good return on assets by 65.3% of the respondents while 34.7% disagreed. The results show that 68% of the responses were within one standard deviation from the mean as supported by an actual standard deviation.

Hasan, Schimiedel and Song (2010), Hernado and Nieto (2006) and DeYoung (2005) in studies done in Italy, Spain and USA respectively, concluded that investment in electronic technology seemed to influence positively the performance of banks as measured by return on assets and return on equity. The conclusions also suggested that electronic technology like the internet and EFT were used more as a complement than as a substitute for physical branches, suggesting the dominance of a multi-channel banking model.

4.4. Testing of Hypotheses

- Hypothesis: Cashless Policy has no significant effect on return on total assets of commercial banks

		Chi-Square	df[a]	Sig.
PROBIT	Pearson Goodness-of-Fit Test	0.8456	327	0.000
a. Statistics based on individual cases differ from statistics based on aggregated cases.				

Table 8: Chi-Square Tests – Cashless Policy on Return on Assets

Table 8 showed the effectiveness of the model in measuring the effect of bank cashless policy on return on assets of commercial banks in Nigeria. The overall Pearson Goodness-of-Fit Test between return on assets and cashless policy is a strong positive correlation of 0.8456. The coefficient of Pearson Goodness-of-Fit Test indicates that the cashless policy in the regression model can explain 84.5% of the variations in return on assets of commercial banks in Nigeria holding other factors constant.

	Parameter	Estimate	Std. Error	Z	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
PROBIT[a]	ATM	. 560	. 110	5.090	.000	.035	.077
	POS	.231	.112	2.062	.006	.027	.004
	Mobile banking	.204	.083	2.457	.005	.050	.002
	Internet Banking	.300	.110	2.706	.007	.008	.052
	Electronic transfer	-.034	.012	-2.826	.005	-.058	-.010
	Debit Card	.314	.114	2.754	.002	.042	.013
	Intercept	-2.168	.094	-23.062	.000	-2.262	-2.074

Table 9: Probit Parameter –Cashless policy on Return on Assets
a. PROBIT model: PROBIT(p) = Intercept + BX

Table 9 showed the regression coefficients of the individual independent variables. The results indicate that automated teller machine, point of sales, mobile banking, internet banking and debit and credit cards, are significant in

explaining the return on assets of commercial banks in Nigeria. The other banks' cashless policy is not significant in explaining variation in the return on assets of commercial banks in Nigeria. This leads us to fail to accept the null hypothesis and conclude that automated teller machine, point of sales, mobile banking, internet banking and debit and credit cards have a positive influence on return on assets of commercial banks in Nigeria and also we therefore reject the null hypothesis and conclude that cashless Policy has significant effect on return on total assets of commercial banks in Ondo North Senatorial District of Ondo State.

5. Summary, Conclusions and Recommendations

Cashless policy is relatively new to banking sector in most African countries, it is policy adopted by both developed and developing countries all over the world. Cashless policy is a policy where transaction can be done without necessarily carrying physical cash as a means of exchange of transaction but rather with the use of credit or debit card payment for goods and services. Therefore, the focus of this study was to examine the effect of cashless policy on bank efficiency in Ondo North Senatorial District, Ondo State Nigeria. The senatorial district was purposively selected for the study as a result low level of banks inclusion in the area. The descriptive analysis of data revealed that most of the respondents were matured, married people with average education, fairly large family size and low level of income. The probit regression result revealed that bank cashless policy had a significant effect, with 84.5% increase of the variations in return on assets, The findings revealed that automated teller machines (ATM), debit and credit cards, point of sales (POS) and mobile banking had a higher moderating effect than electronic funds transfer and internet services on cashless policy ofcommercial banks in study area.

Based on the result from findings of the study, it can be concluded that effect of cashless policy affects bank efficiency in Ondo North Senatorial District of Ondo State positively. The adoption of cashless policy by commercial banks has a high potential of improving bank efficiency and hence better returns to the shareholders. The versatility of cashless policy has made their adoption rate to be high among both the banks and their customers. Cashless policy was found to have a high prediction power in terms of grouping banks using predictive discriminates analysis. Therefore, it is recommended that the government should pursue a strategy to provide incentives for technology transfer from more developed economies in order to promote the adoption of world class cashless policy.

6. References

i. Agboola, A. (2006). Cashless policy systems and tele banking services in Nigeria; *Journal of internet banking and commerce* Dec. 2006.11(2).3-5.

ii. Akhalumeh, P., & Ohiokha, F. (2012). Nigeria's cashless economy; The imperatives. *International journal of management & business studies.* 2(2). 12 – 17.

iii. Alsmadi, G. & Al-wabel, R. (2014). Assessing the Risk and Performance of the GCC Banking Sector. *Journal of Finance and Economics, 65*, 72-81.

iv. Ayoola, T. (2013). The Effect of Cashless Policy of Government on Corruption in Nigeria. *International Review of Management and Business Research, 2(3), 682-690.*

v. Cheng, C. (2011). Critical factors influencing the adoption of data warehouse technology' a study of banking industry in Taiwan; *Decision Support System, 37, (1), 1- 21*

vi. Davis, F. Bagozzi, D. &Warshaw, B. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly 13(3):* 319–340

vii. De Young, R. (2005). *The performance of Internet-based business models*: Evidence from the banking industry. *Journal of Business* 78 (3), 893–947.

viii. Delgado, J. (2007). Do European primarily Internet banks show scale and experience efficiencies? *European Financial Management*, 13(4), 643-671.

ix. Dew, K. (2007). Innovation Segregation by two Australian merchant banks: A private alternative to the financial patent for protecting financial innovations and informing investors. *Working Paper*, available at http://ssrn.com/abstract=995960, accessed on 22 September 2011.

x. Gefen, S. & Helleiner, E. (2003). Electronic Money: A challenge to the sovereign state? *Journal of international affairs* 5(1):23-30.

xi. Hassan, I., Schmiedel, H., & Song, L. (2010). Return to retail banking and payments. Working Paper series 1135, European Central Bank

xii. Hernando, I.&Nieto, M. (2007). The impact of E-banking on the profitability of banks: A study of Pakistani banks. *Journal of public administration and Governance*, 1(1).23-30.

xiii. James, A. (2013). Going cashless: Adoption of mobile banking in Nigeria. *Telematics and informatics, 19,* 315-330

xiv. Kariuki, S. (2015).*Electronic Cash and the End of National Markets"* Foreign Policy. 107(2). 65-67

xv. Lerner, J. (2016). The new financial thing: The origins of financial innovations, *journal of financial Economics* 79, 233-255.

xvi. Liu, H. & Arnett, S. (2000). Cashless policy systems: chance only in the medium term, Deutsche Bank Research, Taunusanlage 12, D-60262 Frankfurt/ Main, Germany, stefan. hengc

xvii. Maddala, G. (1983). Limited-Dependent and Qualitative Variables in Econometrics. Cambridge: Cambridge University Press.

xviii. Malhotra, P., & Singh, B. (2009). The Impact of internet banking on bank performance and risk: The Indian experience. Eurasian. *Journal of Business and Economics, 43-62.*

xix. Mohammad, K., & Saad, A. (2011). The impact of E-banking on the profitability of banks: A study of Pakistani banks. *Journal of public administration and Governance*, 1(1). 23-30

xx. Mugenda, O., & Mugenda, A. (2003). Research methods: Quantitative and Qualitative methods. *Revised in Nairobi*.

xxi. Muyiwa, O., (2013). The Impact of Cashless Economy in Nigeria. *Greener Journal of Internet, Information & Communication Systems*, *1(2), 40-43*.

xxii. Nader, A. (2011). The effect of banking expansion on profit efficiency of Saudi banks. 2nd *International Conference on Business and Economic Research* (2nd ICBER 2011) Proceeding 269.

xxiii. Olatokun, W. & Igbinedion, L. (2009). The Adoption of Automatic Teller Machines in Nigeria: An Application of the Theory of Diffusion of Innovation', *Issues in Informing Science and Information Technology,* 6(2): 373 – 393.

xxiv. Onay, C., Ozsoz, E., & Helvacıoğlu, A. (2008). The impact of internet-banking on bank profitability- The case of Turkey. 2008. *Oxford Business & Economics Conference Program.*

xxv. Oshikoya, D. (2017). Impact of mobile banking on service delivery in the Nigerian commercial banks. Int. Rev. Manage. Bus. Res. 2(2):333-344.

xxvi. Oyewole, E. & Abiodun, D. (2013). Electronic Payment Systems and Economic Growth: A Review of Transaction to Cashless Economy in Nigeria*. International Journal of Scientific Engineering and Technology, 2(9), 913- 919.*

xxvii. Pavlou, C. (2003). Market failure and resource use: economic incentives to use different payment instruments, New York, monograph series in finance and economics.

xxviii. Pollack, T., & Rooney, P. (2003). Management and general expenses: The other half of overhead. *The Nonprofit Quarterly* (Spring), 30–32

xxix. Roth, B. (2010). The future of money: the cashless economy–part1. [online] available: https://www.x.com/.../future-money-cashless-economy part-i.

xxx. Saunders, M., Lewis, P., & Thornhill, A. (2007). Formulating the research design. *Research methods for business students*, 130-161.

xxxi. Tunji, S. (2013). The Effect of Cashless Banking on Nigeria Economy, *eCanadian Journal of Accounting and Finance. 1 (2), 9-19.*

xxxii. Weingartner, I. (1977). Capital rationing theory and competition in transition economies, e-banking policy. 30(2).349-367.