©IDOSR PUBLICATIONS
International Digital Organization for Scientific Research ISSN: 2550-7966

IDOSR JOURNAL OF HUMANITIES AND SOCIAL SCIENCES 2(2): 93-110, 2017.

# Empirical Analysis of the Effect of Cashless Policy on the Performance of Banking Industry in Nigeria (2008-2015)

**Nweze Uchechukwu[1], Eze Eugene Chubuzor[2], Nze Donatus[3] and Ejeagbasi Gloria[4]**

[1.] Rector, Institute of Management and Technology (IMT) Enugu, Nigeria
[2.] Accountancy Dept, Enugu State University of Science and Technology, (ESUT), Enugu Nigeria-
[3.] Accountancy Dept, Enugu State University of Science and Technology, (ESUT), Enugu Nigeria.
[4.] Accountancy Dept, Enugu State University of Science and Technology, (ESUT), Enugu Nigeria.

Email: profaunweze@yahoo.com, eugeneflora16@yahoo.com, donveniero@yahoo.com, eberejideofor28@gmail.com

## ABSTRACT

This study employed the Ex Post Facto research design to compare two periods, before and after the adoption of the cashless policy in 2012. This is to bring out whether any significant difference exists in the post operational variables of bank performance given the adoption of the cashless policy in 2012. This study made use of annual data gathered from the annual reports and accounts of twelve (12) sampled banks arrived at using the purposive sampling technique. To avoid encountering too many gaps in data input and given the length of time after the adoption of the cashless policy in Nigeria, the time frame for the study was truncated to a six (8) year period i.e. 2008 to 2015 divided into two periods (before and after the adoption of the cashless policy). That is three years (2008, 2009, 2010 and 2011) before the adoption of the cashless policy and three years (2012, 2013, 2014, and 2015) after the adoption of the cashless policy for a balance t-test analysis. The study thus adopted the return on asset (ROA), return on equity (ROE) and earnings per share (EPS) as measures of bank performance. In testing our hypothesis, the study employed the parametric statistical pooled variance/ paired sample t-test model. Findings from the study suggests that the cashless policy introduced by the Central Bank of Nigeria in 2012 has not enhanced the return on asset and return on equity of the banks operating in Nigeria but has enhanced banks' earnings per share. Given the findings of this study, the study noted that the cashless policy is not a policy targeted towards enhancing bank performance in terms of profitability specifically. Therefore, Nigerian banks should utilize the benefits of the cashless policy and engage in efficient financial intermediation for enhanced bank performance and specifically bank profitability.

Keywords: Empirical analysis, Cashless policy, Bank, Industry and Nigeria.

## INTRODUCTION

Recent development in technology for financial transactions has increasingly fueled the use of electronic based payment instruments globally. Information technology has influenced every facets of life, transforming subsistence societies. The banking system is not left out of this transformation. The entrance of information technology into the banking industry has redefined banking operations. CBN (2012) [1] state that banks cannot ignore information technology, because it plays a vital role in maintaining competitive edge both local and globally; and that most banks cash flows intricately linked to their adoption of information technology. The adoption of information and communication technology in the banking sector is referred to as electronic banking. The application of its concept techniques, policies and implementation strategies to banking services has become a concern to all banks. It has become a pre-requisite for local and global competitiveness, due to its effects to the management decision making; plans and products and services to be offered by banks. Furthermore, it changes the way banks and co-corporate relationship are organized worldwide and variety of innovations to service delivery.

Recently, "Nigeria financial sector have witnessed a growing chorus of voices calling for a shift from cash-based economy to cash-less economy. The move is fast becoming a top priority for governments, NGOs and companies. Recent statistics shows nearly 2.5 billion people which are almost half of world's adult population do not have access to formal services. Without basic payments and savings account, money is often kept in cash under the pillow and Mattress than circuit around from one person to person, thus increasing the risk of theft or loss. To buttress the point, even common paying bill with cash can be unsafe, costly and the same time consuming. This implies that financial exclusion is significant and far reaching, reinforcing the cycle of poverty and slowing economic progress. Information technology is more than computers. It encompasses the data that a business creates and uses wide spectrum of increasing convergent and linked technologies that process such data. It also relates to the application of technical process in the communication of data. Therefore, information technology can help reduce transaction costs for banks which will translate to lower prices for services to customers. The information technology takes different forms such as; computerization of customer's accounts information storage and retrieval; deposit and withdrawal through Automated Teller Machine (ATMs); Network to facilitate access to the accounts from any branch of bank; Bio-metric use in finger; er-printing and identification which should dispense with the use of passwords and personal identification number (PINS); use of internet and website to bundle a host of services that go beyond traditional; financial services [2].

Central Bank of Nigeria (CBN) introduced the cashless policy in Nigeria in other to ensure that banking services get to everybody and offer all platforms for empowerment that will change the way people transact business and living generally in Nigeria. The cost of transportation and the danger of carrying large sum of money about will drastically reduce. Cashless policy will enhance the integration of our economy according to CBN (2012) [1] statistics 78.8 percent of the country's rural populations are largely unbanked. When this policy is fully implemented, it will drive Nigeria's huge informal economy which is driven largely by farmers, craftsman and other types of small and medium size business and eventually integrate them into the nation's formal economy. The move to use of electronic system known as "cashless" it has its own challenges, which in Nigeria appear to be accentuated by the perennial problem of inadequate physical and social infrastructure. The introduction of cashless policy in Nigeria therefore brings up issues that touch on security, privacy, policy is therefore critical to its sustenance or the tendency to rebel against it by the common man becomes imminent.

In as much as financial institution have implemented such things as debit cards, credit cards

internet banking and so many others, it has slowly brought society into the acceptance zone whereby another step could be taken. Without society being able to understand the pros and cons of electronic cash, the full benefit of the cashless society may never be realized. It has been argued that cashless transactions are viable and more op payment in any economy. Nowadays, about 63.7 percent of Nigerians do not have account but the new initiative would enhance banking habit among individuals, especially among the rural dwellers so that they can easily transfer money to their people whenever they might be. The high cost of minting the Naira has also necessitated an alternative economic system where less or no cash is required for various transactions [3].

However cashless policy is not all roses; it has many challenges as its benefits, experts and many Nigerians have expressed doubts about the capacity of Nigeria to move truly as cashless society. Various issues have been raised about the viability of the policy in view of the enormous confronting its effective implementation and ability of CBN to mention the policy as planned. One of the aims of the cashless policy is to make the unbanked populace key into formal financial services. The cardinal question is therefore how will the cashless policy affect the profit of banks bearing in mind that they have been profitable under cash policy base. In other words, is the cashless policy going to significantly affect bank performance? This study thus examines bank performance using variables including return on asset, return on equity and earnings per share after the adoption of cashless policy in Nigeria in 2012 [4].

## STATEMENT OF THE PROBLEM

An efficient and modern payment system is expected to reduce the cost of banking services (including cost of credit) and drive financial inclusion by providing more efficient transaction options and greater reach and to improve the effectiveness of monetary policy in managing inflation and driving economic growth. In addition, the cash policy aims to curb some of the negative consequences- associated with the high usage of physical cash in the economy, including: high cost of cash: high risk of using cash, high subsidy, informal economy and inefficiency & corruption (CBN, 2012)[1]. According to Cobb (2004) [4], the value of electronic payment goes way beyond the immediate convenience and safety of cards to a greater sphere of contributing to overall economic development. Consequently, this is expected to enhance efficient financial intermediation. Undoubtedly the last three decades have witnessed major advancement in payment technologies as Nigeria electronic payment (e-payment) landscape is on a new threshold with banks, switching and transaction companies, vendors of Automated Teller Machine (ATMs), Point of sale (POS) and third party companies all jostling to expand the scope of market. Thus, these imply that the cashless policy is expected to result in enhanced and efficient financial intermediation thereby bringing about a reduction in cost of banking. Hence, this study examines bank performance and specifically ascertains whether significant difference exists in bank return on asset, return on equity and earnings per share after the adoption of the cashless policy in Nigeria in 2012 [4].

## OBJECTIVES OF THE STUDY

The objective of this study is to ascertain if there is a significance difference in the performances of Nigerian banks given the adoption of the cashless policy in Nigeria. The specific objectives include:

1. To ascertain if there is a significant difference in the return on asset of Nigerian banks after the adoption of the cashless policy in 2012.
2. To determine if there is a significant difference in the return on equity of Nigerian banks after the adoption of the cashless policy in 2012.
3. To ascertain if there is a significant difference in the earning per share of Nigerian banks after the adoption of the cashless policy in 2012.

## RESEARCH QUESTIONS

1. To what extent does Nigerian banks return on asset differ after the adoption of cashless policy in 2012?
2. To what extent does Nigerian banks return on equity differ after the adoption of cashless policy in 2012?
3. To what extent do Nigerian banks earning per share differ after the adoption of cashless policy in 2012?

## HYPOTHESES OF THE STUDY

1. There is no significant difference in the return on asset of Nigerian banks after the adoption of the cashless policy in 2012.
2. There is no significant difference in the return on equity of Nigerian banks after the adoption of the cashless policy in 2012
3. There is no significant difference in the earning per share of Nigerian banks after the adoption of the cashless policy in 2012.

## CONCEPTUAL OVERVIEW OF CASHLESS POLICY IN NIGERIA

Money is often described as having three functions: (i) a unit of account function, (ii) a medium-of-exchange function, and (iii) a store-of-value function. In a cashless economy, the third is not operative and, probably, neither is the second. Cashless economy is a global issue apart from the fact that Nigeria just launched itself into the system. Cashless economy does not refer to an outright absence of cash transactions in the economic setting but one in which the amount of cash-based transactions are kept to the barest minimum (Yaqub, Bello, Adenuga and Ogundeji, 2013) [5]. According Adewale (2013) [6] a cashless society rightly illustrates a gradual movement of the entire payment system of an economy from the use of physical cash for all levels of personal, corporate, governmental including local and international commercial settlement activities to a systemic adoption of other non-physical cash mode payment in settlements of all types of transaction both in the public and private sectors of an economy. It is an economic system in which transactions are not done predominantly in exchange for actual cash [7].

However, as much as there is the need to change into a society where cash will no longer be dominant in the payment system, proponents of cash money have on the other hand claim that in the developing and the underdeveloped nations physical cash money is still the most convenient means of settlement of transactions as a result of illiteracy, and Nigeria is very guilty in this regard. In a Nation with over 150 Million inhabitants, the proponents of a cashless society in "Nigeria argued that it will aid in the drastic reduction in money laundering, terrorist financing and other economic and financial crimes (Soyemi, Soyemi and Hammed, 2015)[8]. Others believe that a cashless society will encourage financial inclusion for most Nigerians since less than 30 per cent of bankable Nigerian adults own bank accounts. A larger percentage of the population rather keeps their money under their mattresses, in their pockets and probably in old cooking pots [9], [10],[11]. Scholars also opined that a cashless Nigeria will promote and implement realistic monetary and fiscal policies that will reduce inflation and encourage investments [11],[12].

A cashless society possesses the following characteristics; all the money used is issued by private financial institutions (banks, and possibly other firms). It is conceivable that the central bank continues to operate like other banks, issuing its own deposits that could be used as money in the same way as other bank deposits are. However, in that case the central bank has no monopoly in the issue of Money [13]. In a cashless society the unit of account (e.g. Dollar, euro) remains a national affair and is provided by the state. The followings among others enhance the functioning of cashless economy; e-finance, e-banking, e-money, e-brokering, e-exchanges etc.

In a modern economy, the use of noncash payment methods such as cards (credit and debit) dominates the use of cash in payments. The card based payment system has several players. On the one hand, are the providers of the card based payment system- first of which is the card companies like MasterCard and Visa who provide their payment network for the system to function. The second sets of providers are the banks that act as acquirers for merchants and issuers for cardholders and reach the card payment services to the ultimate users. On the other side of the system are the users- both merchants and cardholders. The benefits these two players derive from the system are manifold- the convenience of electronic transactions, the ease of credit availability, increased sales, increased purchasing power, to list a few [13]. Since they are the end users of the convenience the card payment system generates, they are the ones who bear the cost of the system. Apart from these four players there is the regulator of the payment system, usually the central bank of the country. The card based payment system cannot function in absence of any of its players. The global volume of non-cash transactions totaled 260 billion in 2009 [14]. citing World Payments Report, 2011), after sustained average annual gains of 6.8% since 2001. The outright volume of these payments only remains heavily concentrated in developed markets. Developing countries are just improving their payments infrastructures, enabling wider adoption and greater usage of non-cash means and channels.

Ejoh *et al.,* (2014) noted that in the new cash policy, the Central Bank of Nigeria (CBN) recently pegged daily cash withdrawals and lodgments by individual to NGN 150,000.00 and corporate bodies NGN 1m respectively with effect from the 1st of June 2012. Other key reasons for introducing the cash policy include, driving development and modernization of our payment system in line with Nigeria's vision 2020 goal of being amongst the top 20 economies by the year 2020. An efficient and modern payment system is positively correlated with economic development, and is a key enabler for economic growth. Also to reduce the cost of banking services (including cost of credit) drive financial inclusion by providing more efficient transaction options and greater reach. Moreover, it arms at improving the effectiveness of monetary policy in managing inflation and driving economic growth.

## THEORETICAL FRAMEWORK

Merton and Bodie (1995)[16] developed the modern theory of financial intermediation which comprises traditional theory and the changes in financial environment. The modern theory of financial intermediation emphasizes six core functions of financial intermediaries to include: provision of means for clearing and settling payments to facilitate exchange of goods and services; provision of mechanism for polling resources; resources allocation; risk management; provision of price information to help in coordinating decentralized decision making in various sectors of the economy and provision of means to tackle the problem of moral hazard, physical hazard and information asymmetry. For the purpose of this study, the enumerated functions by Merton and Bodie (1995)[16] could be expressed as resources accumulation, resource allocation, managing various risks and facilitation of exchange. It is by realizing these functions that banking sector financial intermediation contributes to economic growth.

The growth theory states that well developed financial intermediation can promote economic growth through marginal productivity of capital, efficiency of channeling savings to investment, savings rate and technological innovations.

Buttressing further, Jatau (2014)[17] confirmed that financial development promotes economic growth through channels of marginal productivity of capital, efficiency of channeling savings to investment, saving rate and technological innovation. Affecting economic growth through these channels is realized by functions of financial intermediaries. These functions include the provision of means for clearing and settling payments to

facilitate the exchange of goods, services and assets, the provision of a mechanism for pooling resources together and channeling them to the most productive sector of the economy for investment, risk management, and price information to help coordinate decentralized decision making in various sectors of the economy, among others (Merton and Bodie, 1995)[16]. Among financial intermediaries, the banking firms play important role, they mobilise funds in terms of deposit and transfer them to deficit economic units for financing real investment.

Theoretical studies and empirical evidence have shown that countries with better-developed financial systems enjoy faster and more stable long-run growth. Well-developed financial markets have a significant positive impact on productivity, which translates into higher long-run growth. Merton (1995)[18] citing King (1993) noted that in the absence of a financial system that can provide the means for transforming technical innovation into broad implementation, technological progress will not have significant and substantial impact on the economic development and growth. Theoretical conceptions explain that financial systems influence savings and investment decisions and hence long-run growth rates through the following functions (i) lowering the costs of researching potential investments, (ii) exerting corporate governance, (iii) trading, diversification, and management of risk, (iv) mobilization and pooling of savings, (v) conducting exchanges of goods and services, and (vi) mitigating the negative consequences that random shocks can have on capital investment (Levine, 2004). Financial intermediaries support development through the improvement of these functions (i.e., the amelioration of market frictions such as the costs of acquiring information, making transactions, and enforcing contracts and allowing economies to more efficiently allocate resources (savings) across investments). However, the positive effects of financial development are tailored by the macro policies, laws, regulations, financial infrastructures and enforcement norms applied across countries and time.

## EMPIRICAL REVIEW

Various studies on cashless policy and electronic payments and banking have been carried out since the inception of the policy in 2012. Muhammad (2012)[2] in an article titled analysis of value creation of electronic banking in Nigeria examined trends of banking habit in Nigeria across banking regimes of regulation and deregulation hinged on historical perspective of banking development in Nigeria, from independence to 2012. Relevant secondary data covering 1960 to 2010 were collected from Central Bank of Nigeria annual reports and analysed using the descriptive trend analysis. Muhammad (2012)[2] finding suggests a static behavior across the monetary policy regimes and thus cautioned rushing the cashless program until measures are in place to encourage and push fast the banking culture change for the success of the cashless Nigeria program.

Nwankwo and Eze (2013)[17] ascertained the extent to which electronic payment affect cashless economy of Nigeria using a descriptive research design. Nwankwo and Eze (2013)[17] indicates that the electronic system of payment has a great implication in cashless economy of Nigerian but that it will lead to significant decrease in deposit mobilization and credit extension by Nigerian deposit money banks. They concluded that cashless system of payment need to be examined and the e-payment system developed system, so that people will be used to it before talking of cashless economy. This is because; bulk of the Nigerian economy is driven by SME and petty traders. To retain this policy of cashless economy in Nigeria, the authors recommended that the migration of our payments system towards a cashless society would require some reforms and a lot of effort and sensitization especially for low income group, who are currently deeply rooted in using cash and see it as a convenient and easy way of receiving and making payments.

Jatau and Dung (2014)[17] in their paper titled the Central Bank of Nigeria's cashless policy: a major panacea for eliminating corruption and enhancing sustainable development in Nigeria aimed at unveiling how electronic payment which is the constituent of the cashless

policy can be instrumental in eliminating corruption in Plateau State and Nigeria at large, hence, enhancing sustainable development. They noted that the cashless policy involves adopting of electronic processes to documenting all payments (e-payment) thereby providing an effective data base for optimal revenue generation. The process is capable of reducing financial corruption because funds are no longer channeled through cash which is easily diverted but once paid into the revenue account directly by the payers withdrawal is only made by authorized signatories who provide audit trail that will enhance monitoring and auditing. This encourages transparency and accountability; thus, making fund available for developmental projects they concluded.

Yaqub, Bello, Adenuga and Ogundeji (2013)[5] in their paper titled the cashless policy in Nigeria: prospects and challenges pointed out the prospects and challenges of such policy, in a developing economy like Nigeria. In concluding their exploratory study, Yaqub et al., (2013)[5] posits that the move towards a cashless Nigeria brings with it numerous benefits but there is still the need to create more awareness to entice the numerous unbanked Nigerians into the banking system.

Okoye and Ezejiofor (2013)[21] examined the significant benefits and essential elements of cashless policy, and the extent to which it can enhance the growth of financial stability in the country. The descriptive research design was adopted for the study with a sample size of 68 questionnaires arrived at using the convenience sampling technique. The data collected was subjected to face validity test, and was tested with ANOVA and chi - square (x2) technique and the results indicate that: majority of Nigerians are already aware of the policy and majority agree that the policy will help fight against corruption/money laundering and reduce the risk of carrying cash. Major problems envisaged to hamper the implementation of the policy are cyber fraud and illiteracy. Based on the findings Okoye and Ezejiofor (2013)[21] recommended that government should adopt a different strategy to educate the non-literate Nigerians about the cashless economy; and a framework should be worked out to provide cyber security in Nigeria.
Ajayi (2014)[13] examined the effect of cashless monetary policy on Nigerian banking industry using a sample 370 Guaranty Trust Bank (GTBank) staff in Ekiti State, Nigeria selected based on Taro Yemane's formula for sample size.

The data collected was analyzed using frequency table and percentages while the non-parametric statistical test, Chi-square was used to test the formulated hypothesis. The results of the study showed that there are significant reasons and benefits inherent in the implementation of cashless policy as it facilitates ease of operations and reduces queue and congestion in the banking hall, among others. However, inadequate technological infrastructures, high rate of cyber crime and high rate of illiteracy, among others are hindering the full implementation and benefits of the policy during the period of the study. It was therefore recommended that government should put in place a law preventing cyber crime and intensify public enlightenment campaign about the cashless system. Bank officials should also be properly trained about the operations of the policy in order to be efficient with the services rendered to customers. Olanipekun, Brimah and Akanni (2013)[22] examined the benefit and advantages of the cashless policy and identified (increased convenience, reduce cash handling cost, reduce risk of using cash) as benefits and advantages, while noting challenges hindering the successful achievement of the policy's objectives to include amongst others (inadequate infrastructure, high rate of illiteracy, lack of unique national identity).

Alagh and Ene (2014)[14] examined the impact of cashless banking on the profitability of banks in Nigeria. The study used proxies for cashless banking such as Automated teller machine (ATM), Point of sale (POS), and web based transaction (WBT) to examine its impact on the aggregate return on equity (ROE) of deposit money banks in Nigeria, through an

ordinary least square (OLS) multiple regression method of analysis. The result showed that ATM and POS are positively related to ROE, while WBT related negatively to ROE. This is as-a result of high rates of bank charges on online deposits and as a result, most customers do not patronize the product. Non-usage of the WBT for online deposits had created a negative impact on profitability of Nigerian banks. Alagh and Ene (2014)[14] recommends among others that banks should provide a sufficient standby generator that could be used in case of electricity failure, provide adequate 1CT infrastructure and management framework, and enlighten the public on the importance of using ICT banking products.

Osazevbaru, Sakpaide, and Ibubune (2014)[23] examined the impact of cashless policy on the profitability of Nigerian banks against the backdrop that these banks in a cash based economy are known for their huge profits even in the face of associated high cost of operations. To achieve the objective of the study secondary data were collected and analyzed using content analysis comparing profits under cash based policy with a cashless regime. The results revealed that cashless economic policy positively impact on banks' profit through reduction in cost of operations and banking the unbanked populace (Osazevbaru, *at al.,* 2014)[23] concluded.

Ejoh, Adebisi and Okpa (2014)[15] examined the cash-less economic system so as to assess the relationship between Information and Communication Technology (ICT) and the implementation of cash-less policy. In order to achieve the primary objective of the study, the study used structured questionnaire as a means of data collection from 120 respondents randomly selected. The data was analyzed using simple percentage procedure, and the collated data tested using chi-square technique. Their study revealed that there exist a significant relationship between ICT and cash-less policy implementation in the Nigerian financial environment. Based on the findings it was recommended that the federal government of Nigeria should collaborate with all the states ICT centers and other private institutions to provide mass ICT education for the computer illiterates and banks should invest more in e-banking technology in order to enhance public awareness which would in turn encourage cash-less economy in Nigeria.

## RESEARCH DESIGN, NATURE AND SOURCES OF DATA

This study employed the Ex Post Facto research design to compare two periods i.e. before and after the adoption of the cashless policy. The model for the study is structured in a way to enhance comparisons of the pre and post periods, and to bring out whether any significant difference exist between the pre and post operational variable of profitability given the adoption of the cashless policy. This is in line with past empirical studies that have considered two samples before and after the implementation of a policy specifically the bank consolidation exercise[3],[24].

In line with the general approach adopted in empirical studies, this study made use of annual data and gathered from the annual reports and accounts of sampled banks. Thus the nature of data used is secondary and sourced from the annual reports of selected deposit money banks in Nigeria. The sample of the study arrived at through non-probabilistic (purposive) sampling technique is made up of twelve (12) banks operating in Nigeria whose shares are quoted and traded on the Nigerian Stock Exchange. To avoid encountering too many gaps in data input and given the length of time after the adoption of the cashless policy in Nigeria, the time frame for the study was truncated to an eight (8) year period i.e. 2008 to 2015 divided into two periods (before and after the adoption of the cashless policy). That is three years (2008, 2009, 2010 and 2011) before the adoption of the cashless policy and three years (2012, 2013, 2014 and 2015) after the adoption of the cashless policy for a balance t-test analysis.

## DATA ANALYSIS TECHNIQUE AND MODEL SPECIFICATIONS

The study thus hypothesized that there is no significant difference in the profitability of
Nigerian banks given adoption of the cashless policy in 2012. The study thus adopted the return on asset (ROA), return on equity and earnings per share as measures of performance.
The ROA is a functional indicator of bank's profitability. It is a ratio calculated by dividing profit before tax by total assets. ROA shows the profit earned per dollar of assets which reflects bank's management ability to utilize the banks' financial and real investment resources to generate profits [25].

Thus ROA is calculated as $\frac{\text{Profit before Tax}}{\text{Total Asset}}$ ..... (1)

The return on equity (ROE) measures the rate of return on the money invested by common stock owners and retained by the company. It demonstrates a firm's ability to generate profits from shareholders' equity (also known as net assets or assets minus liabilities).

It is calculated as Profit After Tax/ Total Equity..... (2)

The earnings per share, also called net income per share, is a market prospect ratio that measures the amount of net income earned per share of stock outstanding. In other words, this is the amount of money each share of stock would receive if all of the profits were distributed to the outstanding shares at the end of the year. It is usually calculated and specified in the firm's financial report.

In testing our hypothesis, the study employed the parametric statistical pooled variance/ paired sample t-test model. This statistical tool focuses on the significant difference of chosen operational variable between two sample means observed at two points in time. In this version, the two samples are combined (pooled) to get a pooled variance and base the standard error of the difference in means on that single estimate; the resulting t can be compared directly to critical values from the *t* distribution table. The choice of this technique is that it suits the analysis since a significance test of two sampled means (before and after the adoption of the cashless policy) is being compared. It is also based on the conditions for using the t-test that:-

i. The population from which the sample is drawn is (approximately) normally distributed.
ii. The two population variances are identical, whatever value they happen to have in other words, there is homogeneity of variances.
iii. The sample size is small (that is n < 30).
iv. The population standard deviation (S) is unknown.

The decision is informed by comparing the paired p-value (significance level) with the 0.05 level of significance. The decision rule is to accept Ho, if calculated p-value > 0.05 and otherwise to reject Ho, if calculated p-value < 0.05.
The t-test statistics process is specified thus;

$$t_{n_1+n_2-2} = \frac{\bar{X}_1 - \bar{X}_2}{S(X_1 - X_2)} \quad (3)$$

Where;

$\bar{X}_1$ = Sample mean value of the specified variable in the pre-consolidation period.

$\bar{X}_2$ = Sample mean value of the specified variable in the post-consolidation period.

S $(X_1 - X_2)$ = the standard deviation of the difference in the pooled variance and thus calculated as:

$$S(X_1-X_2)= \sqrt{\sqrt{s^2_{x1}-S^2_{X2}}} \quad \text{.....(4)}$$

$$= \sqrt{\frac{(n_1-1)S^2 + (n_2-2)S^2}{n_1 + n_2 - 2}} \quad \text{.....(5)}$$

**Where;**

S $(X_1 - X_2)$ = Population standard deviation.

$S^2x_1$ = Sample variance value of variable in the pre-consolidation period.

$S^2x_2$= Sample variance value of variable in the post-consolidation period.

$S^2P$ = Pooled variance of the two samples $= \frac{(n_1 - 1)S^2 + (n_2 - 2)S^2}{n_1 + n_2 - 2}$ .....(6)

$n_1$ = Sample size of the pre-consolidation period.

$n_2$= Sample size of the post-consolidation period.

$N_1 + n_2 - 2$ = Degree of freedom.

However, in the actual analysis, the Statistical Package for Social Sciences (SPSS) was used at a 95% confidence interval for the difference in means and at four and/or three degrees of
Freedom (df)

## DATA PRESENTATION, ANALYSIS AND INTERPRETATION

The objective of this study is to ascertain if there is a significance difference in the performance of Nigerian banks given the adoption of the cashless policy in Nigeria in year 2012. The study used the return on asset, return on equity and earnings per share as bank performance measures. The decision rule that guided the rejection or otherwise of the null hypothesis tested using the paired sample t-test is to reject the null hypothesis if the significance (2-tailed) value of the resulting *t* is > 0.05 otherwise the null hypothesis is accepted and the alternate accepted accordingly.

## TEST OF HYPOTHESES

**Hypothesis One**

**RESEARCH'S HYPOTHESIS $H_1$:** There is a significant difference in the return on asset of Nigerian banks after the adoption of the cashless policy

**Table 1: Paired Samples Test for Return on Asset**

| | Paired Differences | | | | | t | df | Sig. (2-tailed) |
|---|---|---|---|---|---|---|---|---|
| | Mean | Std. Deviation | Std. Error Mean | 95% Confidence Interval of the Difference | | | | |
| | | | | | Upper | | | |
| **Pair 1 roapost-roapre** | .01190 | .05112 | .00746 | -.00311 | .02691 | 1.596 | 46 | .117 |

**Source:** Author's SPSS Output, 2016

The decision rule is to accept the null hypothesis if the significance (2-tailed) value of the resulting *t* is > 0.05 otherwise, reject the null hypothesis and accept the alternate accordingly. Table 1 suggests that the significance (2-tailed) value of the resulting *t* of .117 > .05. Thus, we accept the null hypothesis that there is no significant difference in the return on asset of Nigerian banks after the adoption of the cashless policy in 2012.

## RESEARCH HYPOTHESES TWO

$H_1$ There is a significant difference in the return on equity of Nigerian banks after the adoption of the cashless policy

### Table 2: Paired Samples Test for Return on Equity

| | Paired Differences | | | | | t | Df | Sig. (2-tailed) |
|---|---|---|---|---|---|---|---|---|
| | Mean | Std. Deviation | Std. Error Mean | 95% Confidence Interval of the Difference | | | | |
| | | | | | Upper | | | |
| **Pair 1 roepost-roepre** | .15512 | .76608 | .11057 | -.06732 | .37757 | 1.403 | 47 | .167 |

**Source:** Author's SPSS Output, 2016.

The decision rule is to accept the null hypothesis if the significance (2-tailed) value of the resulting *t* is > 0.05 otherwise, reject the null hypothesis and accept the alternate accordingly. Table 2 suggests that the significance (2-tailed) value of the resulting *t* of .167 > .05. Thus, we accept the null hypothesis that there is no significant difference in the return on equity of Nigerian banks after the adoption of the cashless policy in 2012.

## RESEARCH HYPOTHESES THREE

$H_1$ There is a significant difference in the earning per share of Nigerian banks after the adoption of the cashless policy

### Table 3: Paired Samples Test for Earning per Share

| | Paired Differences | | | | | t | df | Sig. (2-tailed |
|---|---|---|---|---|---|---|---|---|
| | Mean | Std. Deviation | Std. Error Mean | 95% Confidence Interval of the Difference | | | | |
| | | | | Lower | Upper | | | |
| **Pair 1 epspost-epspre** | 6.15115E1 | 94.92353 | 16.27925 | 28.39109 | 94.63186 | 3.779 | 33 | .001 |

**Source:** Author's SPSS Output, 2016.

The decision rule is to accept the null hypothesis if the significance (2-tailed) value of the resulting *t* is > 0.05 otherwise, reject the null hypothesis and accept the alternate accordingly. Table 3 suggests that the significance (2-tailed) value of the resulting *t* of .001 < .05. Thus,
we reject the null hypothesis that there is no significant difference in the earning per share of Nigerian banks and thus conclude that there is a significant difference in the earning per share of Nigerian banks.

## SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATION

1. There is no significant difference in the return on asset of Nigerian banks after the adoption of the cashless policy in 2012
2. There is no significant difference in the return on equity of Nigerian banks after the adoption of the cashless policy in 2012
3. There is a significant difference in the earning per share of Nigerian banks

## CONCLUSION

Undoubtedly the last three decades have witnessed major advancement in payment technologies as Nigeria electronic payment (e-payment) landscape is on a new threshold with banks, switching and transaction companies, vendors of Automated Teller Machine (ATMs), Point of Sale (POS) and third party companies all jostling to expand the scope of the market. All these advancements require huge capital investment to provide an efficient and modern payment system. The effect of the move into cashless economy with its consequence on banks in terms of capital investment and its attendant consequences on bank performance is the aim of this study. Findings from the study suggest that the cashless policy introduced by the Central Bank of Nigeria in 2012 has not enhanced the return on asset and return on equity of the banks operating in Nigeria. Findings from the study further indicate that the introduction and adoption of the cashless policy in Nigeria has enhanced banks earning per share.

## RECOMMENDATIONS

Given the findings of this study, the study noted that the cashless policy is not a policy targeted towards enhancing bank performance in terms of profitability specifically. Therefore, Nigerian banks should utilize the benefits of the cashless policy and engage in efficient financial intermediation for enhanced bank performance and specifically bank profitability.

## REFERENCES


1. CBN Annual Activity Report. (2012).

2. Muhammad A.H. (2012). Analysis of value creation of electronic banking in Nigeria. *International Journal of Advanced Research in IT and Engineering,* Vol. 1(2), 29-46.

3. Adegbaju, A.A. and Olokoyo, P.O. (2008). Recapitalizations and bank performance: A casestudy of Nigerian banks. *African Economic and Business Review, 6(* 1), 222-234.

4. COBB Anne. (2004). http://www.ameinfo.com/50050.html

5. Yaqub, J.O., Bello, H.T. Adenuga, I.A. and Ogundeji, M.O. (2013). The Cashless-Policy in Nigeria: Prospects and Challenges, *International Journal of Humanities and Social Science,* 3( 3), 200-212.

6. Adewale, A.A. (2012). *Evaluating the systemic transition to a cashless economy in Nigeria.*Social Science Research Network. Social Science Electronic Publishing.

7. Daniel, D.G., Swartz, R.W. and Fermar, A.L. (2004). *Economics of a cashless society: an analysis of costs and benefits of payment instruments,* AEI-Brookings Joint Center

8. Soyemi, J., Soyemi, B.O. and Hammed, M. (2015). Nigeria cashless culture: the open issues. *International Journal of Engineering Sciences,* 4 (4), 51-56.

9. Nahimah, A.M. (2012). *Attaining cashless society in Nigeria.* Lagos Daily Trust Newspaper Monday, 06 February 2012.

10. Abimbola, A. (2012). *The imperative of a cashless society.* The NEWS. Retrieved 14 June, 2012from http://tlienewsafrica.com/2011 /05/23/the-imperative of-a-cashless-society.

11. Adanna, A. (2011). *Nigeria moves towards a cashless society.* FACE2faceAfrica. Retrieved 20 June, 2012 from http://face2faceafrica.com/article/nigeriamoves-towards-being-a-cashless-society.

12. Nnamdi, O. (2011). *Cashless society is possible in Nigeria.* Retrieved June, 2012 from http://wwvv.vanguardngr.eom/2011/l1/cashlesssociety-is-possible-in-nigeria-intermarc-boss

13. Ajayi, S. I., & Ojo, O. O. (2006). *Money and Banking: Analysis and Policy in the Nigerian Context.* Ibadan; Daily Graphics.

14. Alagh, J. I. and Ene, E. E. (2014). Impact of cashless banking on banks' profitability (Evidence from Nigeria). *Asian Journal of Finance & Accounting,* 6(2), 362-376.

15. Ejoh, N. O., Adebisi, A. W. and Okpa, I. B. (2014). Information and communication technology- an indispensable tool for the implementation of cash-less policy in Nigeria. *International Journal of Economics, Commerce and Management,* **11**(10), 1-18.

16. Merton, R. C. and Bodie, Z. (1995). A conceptual framework for analyzing the financial environment, in eds. D. B. Crane et. al., The global financial system, a functional perspective, Oxford, Harvard Business School Press.

17. Jatau, V. S. and Dung, K. L. (2014). The Central Bank of Nigeria's cashless policy; a major panacea for eliminating corruption and enhancing sustainable development in Nigeria. *African Research Review,* 8(4), 198-206.

18. Merton, R.C. (1995). A conceptual framework for analyzing the financial environment. Oxford, Harvard Business School Press.

19. King, R. and Levine, R. (1993). Finance and growth: Schumpeter might be right. *The Quarterly Journal of Economics* 108, 681-737.

20. Nwankwo, O. and Eze, O.R. (2013). Electronic payment in cashless economy of Nigeria: problems and prospect. *Journal of Management Research,* 5(1), 138-151.

21. Okoye, P. V. C. and Ezejiofor, R. (2013). An Appraisal of Cashless Economy Policy in Development of Nigerian Economy. *Research Journal of Finance and Accounting,* 4(7), 239-242.

22. Olanipekun, W. D., Brimah, A. N. & Akanni, L. F. (2013). Integrating cashless economic policy in Nigeria: challenges and prospects. *International Journal of Business and Behavioral Sciences,* 3(5), 1-8.

23. Osazevbaru, H.O., Sakpaide, E. J. and Ibubune, R.O. (2014). Cashless policy and banks' profitability in Nigeria. *European Journal of Accounting and Auditing and Finance Research, 2(3)*1-12

24. Ugwunta, D. O., Ani, W. U., & Ugwuanyi, G. (2012). The effect of bank consolidation on bank credit reduction: evidence from selected banks in Nigeria. *International Journal of Business and Management Tomorrow,* 2(3), 1-8.

25. Naceur, S. B. and Goaied, M. (2001). *The determinants of commercial bank interest margin and profitability: evidence from Tunisia.* Working paper 856365. htpp://www.papers.ssrn.com/soI3/papers.cfm

## APPENDIX

| | | Access Bank | | |
|---|---|---|---|---|
| | PBT | TA | PAT | Total |
| **2015** | 65,177,914 | 2,411,944,061 | 65,868,773 | 360,428,904 |
| **2014** | 46,142,422 | 1,981,955,730 | 39,941,126 | 274,155,786 |
| **2013** | 31,365,396 | 1,704,094,012 | 26,211,844 | 245,181,997 |
| **2012** | 37,028,147 | 1,515,754,463 | 35,815,611 | 237,624,211 |
| **2011** | 12,141,462 | 949,382,097 | 5,248,866 | 187,037,078 |
| **2010** | 17,668,584 | 726,960,580 | 12,931,441 | 182,504,814 |
| **2009** | 41,723,000 | 647,574,719 | -880,752 | 173,151,023 |
| **2008** | 19,042,106 | 1,043,465,021 | 22,885,794 | 184,830,757 |
| **2007** | 8,043,165 | 328,615,194 | 16,056,464 | 172,002,026 |
| | | Diamond | | |
| **2015** | 5,171,592 | 1,555,183,067 | 3,833,749 | 208,076,384 |
| **2014** | 24,413,014 | 1,750,270,423 | 22,057,198 | 205,660,767 |
| **2013** | 33,250,472 | 1,354,930,871 | 29,754,52 | 138,303,224 |
| **2012** | 28,364,965 | 1,178,103,754 | 23,073,427 | 107,316,415 |
| **2011** | -27,132,209 | 796,231,792 | 22,868,254 | 84,136,434 |
| **2010** | 9,468,016 | 548,402,560 | 6,522,455 | 116,881,159 |
| **2009** | 8,343,73.8 | 650,891,836 | -4,883,446 | 110,358,704 |
| **2008** | 15,059,114 | 603,326,540 | 6,931,127 | 116,544,920 |
| **2007** | 8,792,775 | 312,249,721 | 11,822,011 | 116,983,008 |
| | | ECOBANK | | . |
| **2015** | 205,239 | 23,553,919 | 107,464 | 2,523,245 |
| **2014** | 519,549 | 24,243,562 | 394,770 | 2,655,085 |
| **2013** | 221,778 | 22,532,453 | 147,773 | 2,134,648 |
| **2012** | 348,024 | 19,950,335 | 286,732 | 2,173,917 |
| **2011** | 277,422 | 17,161,912 | 206,840 | 1,459,336 |
| **2010** | 169,026 | 10,466,871 | 131,819 | 1,292,610 |
| **2009** | 101,066 | 9,006,523 | 64,600 | 1,235,565 |
| **2008** | 340,900 | 8,963,203 | 111,140 | 1,157,622 |
| **2007** | 247,077 | 5,929,408 | 138,936 | 651,760 |
| | | Fidelity | | |
| **2015** | | | | |
| **2014** | 15,515 | 1,187,025 | 13,796 | 173,118 |
| **2013** | 9,028 | 1,081,217 | 7,721 | 163,380 |
| **2012** | 36,637 | 1,333,031 | 17,924 | 161,744 |
| **2011** | 14,274 | 1,029,926 | 3,911 | 156,307 |
| **2010** | 6,831,645 | 650,318,227 | 5,828 | 143,003 |

| | | | | |
|---|---|---|---|---|
| **2009** | 3,074,418 | 362,098,549 | 2,296,799 | 129,373,824 |
| **2008** | 15,795,951 | 533,122,233 | 12,986,570 | 135,863,988 |
| | | FBN | | J |
| **2015** | 2,180 | 282,831 | 2,180 | 282,831 |
| **2014** | 92,884 | 4,342,666 | 5,683 | 287,770 |

| | | | |
|---|---|---|---|
| **2013** | 206 | 0.21514 | 0.02454 |
| **2012** | 159 | 0.215004 | 0.024077 |
| **2011** | -158 | -0.2718 | -0.03408 |
| **2010** | 45 | 0.055804 | 0.017265 |
| **2009** | -34 | -0.04425 | 0.012819 |
| **2008** | 48 | 0.059472 | 0.02496 |
| **2007** | 110 | 0.101058 | 0.028159 |
| **2015** | 0.28 | 0.04259 | 0.008714 |
| **2014** | 1.69 | 0.148685 | 0.02143 |
| **2013** | 0.6 | 0.069226 | 0.009843 |
| **2012** | 1.67 | 0.131896 | 0.017445 |
| **2011** | 1.76 | 0.141736 | 0.016165 |
| **2010** | NA | 0.101979 | 07616149 |
| **2009** | NA | 0.052284 | 0.011221 |
| **2008** | NA | 0.096007 | 0.038033 |
| **2007** | NA | 0.21317 | 0.04167 |
| **2015** | NA | NA | NA |
| **2014;** | 48 | 0.079691 | 0.01307 |
| **2013** | 27 | 0.047258 | 0.00835 |
| **2012** | 62 | 0.110817 | 0.027484 |
| **2011** | 14 | 0.025021 | 0.013859 |
| **2010** | 20 | 0.040754 | 0.010505 |
| **2009** | 8 | 0.017753 | 0.008491 |
| **2008** | 45 | 0.095585 | 0.029629 |
| **2015** | 6 | 0.007708 | 6.667708 |
| **2014** | 16 | 0.019748[T] | 0.021389 |
| **2013** | 216 | 0.2265197 | 0.023607 |
| **2012** | 3 | -0.00302 | 0.012764 |
| **2011** | 140 | 0.125285 | 0.009577 |
| **2010** | 95 | 0.092026 | 0.017135 |
| **2009** | 16 | 0.014894 | 6.664338 |
| **2008** | 51 | 0.037252 | 0.032622 |
| "2007; | 184 | 0.104245 | 0.028965 |
| **2015** | 0 | 0.004033 | 0.006627 |
| **2014** | 1.12 | 0.137593 | 0.020475 |
| **2013** | 0.81 | 0.110835 | 0.018035 |
| **2012** | 1 | 0.113876 | 0.013947 |
| **2011** | -0.57 | -0.05689 | -0.02255 |
| **2010** | 0 | 0.058228 | 0.014271 |

| | | | |
|---|---|---|---|
| **2009** | 5 | 0.004355 | 0.039633 |
| **2008** | 25 | 0.030952 | 0.02812 |
| **2007** | 135 | 0.113064 | 0.034129 |
| **2015** | 3 | 0.23251 | 0.049625 |