An Appraisal of Cashless Policy in Nigeria

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Abstract

This study evaluates the cashless policy in Nigeria, focusing on two key objectives: assessing the extent of electronic card transaction usage and determining the impact of the policy on cash transactions. The population studied includes all electronic and cash transactions from 2005 to 2014. Using a deliberate non-random sampling method, the research relies on secondary data sourced from the 2014 Central Bank of Nigeria (CBN) Statistical Bulletin. Time series data on electronic transactions were analysed using Excel tables and charts. The findings reveal a moderate positive correlation between ATM usage and currency outside banks, indicating increased electronic card transaction usage since the policy's implementation. However, contrary to expectations, cash transactions have also risen. The study concludes that while the cashless policy has boosted electronic transactions, its effect on reducing cash transactions remains limited. It is recommended that the government and CBN intensify awareness campaigns on the benefits of a cashless economy and provide the necessary infrastructure to enhance its adoption for economic growth and business development.

Keywords: Cashless, Electronic Banking, Automated Teller Machine, ATM Ratio, Payment Channels

Introduction

Innovation has evolved today's financial system which has developed over several centuries. It started with the barter system and has transitioned through various stages due to limitations associated with the evolving systems (Ajayi & Ojo. 2006). Changes will continue to occur in response to social and technological advancements. Over the course of history, different forms of payment systems have been in existence. At the onset, trade by barter was common, however, the challenges associated with the barter system such as the double coincidence of wants required the introduction of other forms of money. Nevertheless, experts have long predicted the emergence of a possibly superior substitute for cash exchanges, which would invariably foster a cashless society.

Before the introduction of the electronic payment system into the Nigerian banking sector, the armchair era was in existence whereby customers walked into the banking hall to carry out various kinds of transactions. This facilitated long queues and a lot of time-consuming processes. The inconveniences that arise on account of these long queues discourage most customers from carrying out transactions necessitating the need for stakeholders in the financial sector such as Information technology (ICT) experts, entrepreneurs and others to push for the replacement of the conventional physical cash with the

introduction of an efficient and more flexible retail payment solution (Baddeley. 2004).

This led to massive investments in technology to upgrade banking infrastructures to deliver new electronic information-based banking facilities. Services such as online retail banking are making it possible for individuals and corporate bodies to take advantage of new technologies at reasonable costs. The task of migrating to a cashless economy has been on the front line of the nation's economic agenda. Analysts have speculated that to meet the target of being among the leading world economies, the electronic payment system in its entirety must be fully embraced. The Central Bank of Nigeria (CBN) being the top regulatory body of banking activities introduced a reform policy to check or control the increasing domination of cash in the banking sector to enhance the electronic payment system in the economy (Ajayi, 2014)

The 21st Century is a time when people prefer holding money in liquid form than in cash form. But the type of money you handle is becoming a matter of concern as the world economy is gradually and steadily becoming cashless, and the money-spinning us around is increasingly digital and plastic rather than paper and coin. Every week seems to bring new developments from different corners of the globe that indicate the world heading to closer and closer to being *cashless* – a world where all transactions will be conducted without cash.

Recently, the UK government announced that cashless payments have surpassed the use of physical cash for the first time in history. This came after an announcement from the Danish government that business enterprises such as restaurants, retailers and petrol stations will soon stop accepting cash payments. In Sweden, every transaction that takes place across the country is carried out electronically. A Cashless economy is a utopian concept. No true cashless economy exists in the world today. In most Scandinavian cities, public buses no longer accept cash payments, tickets are now prepaid or purchased with a cell phone via SMS. An increasing number of businesses only accept cards, and most bank offices have stopped transacting with cash altogether. In Sweden there are towns and organizations that only accept electronic payments. UK, USA, France, Switzerland, Philippines and Italy; Notes and coins account for less than 1/6 of total money in circulation in Uganda, Zambia and Kenya.

Nigeria has been lagging in the adoption of e-payments and this is a major disadvantage in many respects (Banking and Payments System Department CBN, 2015). Valentine (2012) describes a cashless society as one in which physical cash is not in use, rather all purchases are carried out with credit cards, cheques or direct transfers from one account to the other. In other words, it refers to the extensive application of ICT in the financial sector. 97% of transactions are globally implemented without the exchange of raw cash and this has greatly decreased cost, corruption and money laundering (Valentine, 2012). By concept, the amount of money held or transacted in cash is irrelevant in a cashless economy. All transactions can be executed using USSD banking, E-cheques, Mobile and Internet banking and Bank transfers. A cashless economy comprises of electronic financial systems like E-money, E-finance, E-brokering and E-exchange which all explain how transactions are affected in a cashless economy (Ashike, 2011).

The reverse seems to be the case in Nigeria where most financial transactions are with raw cash. The Central Bank of Nigeria has introduced various monetary policies aimed at strengthening the financial system and cashless policy which guarantees an efficient payment system geared towards achieving the goal of being among the top world economies. The Cashless Policy in Nigeria is designed to enhance

mobile payment services, eliminate the traditional barriers limiting the financial inclusion of a large percentage of Nigerians and ensure convenient financial services in both urban and rural areas across the nation (Eromosele & Obinna, 2012). This is the prime objective of the cashless policy. A major requirement for the development of the economy of any nation according to (Ajayi and Ojo, 2006) is to ensure a secure payment system that is affordable and convenient. Incidentally, industrialized nations of the world are moving away from paper payment toward electronic instruments, especially payment cards.

In developing countries of the world like Nigeria, the primary mode of payment is with the use of cash which makes the country operate a cash-based economy. Experts and government officials have continued to paint colorful tones of this cashless financial system. Subsequently, Ashike, (2011) noted that a cashless policy enhances faster transactions by reducing queues at the point of sales and improving hygiene on site by eliminating the spread of bacteria through handling notes and coins. It also simplifies cash collection by eliminating the time spent collecting, counting and sorting cash. According to Keck (2012), there are numerous advantages of E-payments which were not available through the conventional mode of payment which include privacy, integrity, compatibility, transaction efficiency, acceptability, mobility, low financial risk, anonymity and convenience.

Statement of the Research Problem

Despite the various advantages associated with a cashless economy, illiteracy/computerization challenge has remained the major challenge to the full adoption of cashless in Nigeria. As it is commonplace in developing countries, the literacy rate is still quite low in Nigeria especially in the North. Most businessmen/women still prefer to keep their money in personal vaults in spite of banks which are in abundance in the country. Also, ICT knowledge and skills are still very poor even among educated Nigerians. Lack of trust and the Bounced-Cheque Syndrome has also been recognized as a challenge and as a result, business operatives believe in cash and carry business transactions hence it has remained a major constraint to the adoption and implementation of a full-scale cashless economy in Nigeria due to the heavy dependence of the economy on cash oriented transactions of goods and services which is not in line with global trends. Given this background, this study aims to appraise the cashless policy in Nigeria.

Research Questions

In line with the objectives, a few questions will be asked, which will aid in achieving a reasonable degree of success which will also aid in the formulating and testing of our hypotheses. They are.

1. To what extent are electronic card transactions in use in Nigeria?
2. Has there been a decrease in cash transaction with the implementation of cashless policy in Nigeria?

Objective of the Study

The general objective of this study is to evaluate the cashless policy adopted by CBN and determine how it

has fared in Nigeria since its introduction, amidst the bottlenecks in the country. The specific objectives include.

1. To ascertain the extent of electronic card transactions, use in Nigeria
2. To determine if there has been a decrease in cash transactions with the implementation of a cashless policy in Nigeria.

Theoretical Framework

This section explores the basic theories underpinning the advocacy for a "Cashless Policy" across the globe and how it became an issue of public interest in Nigeria. In recent times, there has been a consensus that Central banks (Federal Reserve banks or Government Banks as it is identified in different countries) can control the price level. One of the approaches is through controlling the money supply advocated by monetarists and has led many central banks to implement money-supply- targeting procedures (Claudia, 2001). Okereke and Sanni (2005) defined money supply as "the total sum money in circulating that facilitates the exchange process in an economy at any given time". They added that the money supply would be viewed from either a narrow perspective or from a broader horizon.

They defined money supply in a narrow sense as money in circulation needed as a medium of exchange. This they call M1. In a broader sense money supply (M2) is the store of purchasing power. In other words, M2 = other assets that command liquidity. In Nigeria, M2 = M1+ Qm = Money supply + Quasi money = Money supply + Savings + time deposit i.e. M2 = M1+ Savings Deposits + Time deposit M2 = M1+ SD + TD. Okereke & Sanni (2005) quoting Gurely and Shaw define money supply in the broad sense as M1 = M2S + B Where: M2 = as defined above S = Shares of credit institutions B = Bonds of credit institutions However, the Central Bank of Nigeria (CBN) in its approach to the broad definition of money supply sees money supply M4 = M3 + BA + CP + CD Where: BA = Banker Acceptance CP = Commercial Papers CD = Certificate of Deposit

To effectively regulate the supply of money in the economy, monetary policies must be put in place to enhance balance development and control. Monetary policy refers to a combination of measures designed to regulate the: Value of money, supply and cost of money in an economy (CBN, 1994). The aim of monetary policy is to influence the availability and cost of credit or the control of money supply with a vision to countering undesirable trends in the economy.

Regrettably, the uncontrollable and unregulated state of the informal financial sector makes difficult the execution of the onerous task of controlling the flow of money in Nigeria. The spree of public funds' looting among the political class has worsened this leading to sudden rise in the value of goods and services (inflation), increased spread of poverty among the masses and decline in the value of money. The CBN in the presentation of the cashless policy to the Nigerian economy said that "An efficient and modern payment system is positively correlated with economic development and is a key enabler for economic growth" (CBN, 2011).

There exist some theoretical evidences that support the adoption of the cashless policy as presented by the CBN. This demands that pragmatic evidence should be found to support this. The following empirical questions will be considered in this research paper.

1. Does the relationship or correlation between payment systems (i.e. the medium of exchange) and economic development hold in practice, as it does in theory?

2. If true, what does this imply for a developing economy like Nigeria, in its vision and quest towards the cashless economy?

The Theory of the Monetary Stages of Development

Sen (1983) posits that the process of economic development essentially involves economic growth in addition to the quantitative and qualitative changes in multiple areas of the economy such as critical infrastructure, human capital, health, literacy, etc. Although the concept of economic development was popularized in the 20th century, the term predates this era. Economists in this era supported a common history-based methodology to their economic analyses, as well as the belief that the Primary task of economics was to discover the laws governing the different stages of growth and development in an economy. The forefather of German Historical school of economics, Georg Friedrich (1789-1846), stated that economies of the temperate zone will go through four stages of economic development namely: Pastoral life; Agriculture; Agriculture and Manufacturing; and Agriculture and Commerce.

Economist Bruno Hildebrand (1812-1878) took a different but historical method to the study of the economic growth stages. Economist Bruno postulated three economic growth stages built on barter, money and credit. This postulation is known as 'the theory of the monetary stages of development' and this forms a core theoretical ground on which this work is built.

Bruno envisioned a society advancing from barter (a natural state of economy where goods were exchanged for goods) through exchange of money (monetary stage) and finally reaching its peak to a credit system economy.

Although Bruno failed to develop a coherent economic system, his vision of a barter-money-credit economic development model contains theoretical evidence of the existing relationship between mediums of exchange and economic development.

Empirical Review

Literature on cashless policies is rather scarce; this may be because the phenomenon is a new development, compared to other topics in economics. But recently the topic has gained more attention both by central Banks and academic researchers. In other to achieve the main objective of this study, this study is dedicated to review some existing studies by ways of theoretical and empirical frameworks on the major terms of this study such as cashless policy, cashless economy/society, E-banking, electronic transactions etc., as it deals with the Nigeria society. In recent years, many authors have investigated the introduction of electronic banking and its implications on the economy in both developed and developing countries. In his work, Putrevu (2002), employed descriptive survey to determine the origin of technology and information difference between man and woman. He found out that there exist differences in information processing between women and men hence, both genders will have different technology acceptance rate.

Olatokun and Igbindion (2009), using DOI (Diffusion of Innovation) theory investigated the adoption of Automatic Teller Machines in Nigeria. They found out that the constraints Relative Advantage, Complexity, Observe Ability, Compatibility, and Trial ability were positively related to attitude toward the use of ATM cards in Nigeria. Olorunsegun (2010) using the cluster sampling technique studied electronic banking impact in the Nigerian banking system. His findings revealed that a bank has an effective electronic banking system which has improved its customer relationship and satisfaction.

Similarly, James (2012) using Linear Multiple Regression Analysis determined the effect of Age,

Educational Background, Income, Perceived Benefits, Perceived Ease of Use, Perceived Risk and Perceived Enjoyment on Acceptance of E-banking. His findings revealed that acceptance of e-banking in Nigeria is significantly influenced by Age, Educational Background, Income, Perceived Benefits, Perceived Ease of Use, Perceived Risk and Perceived Enjoyment. Similarly, Morufu and Taibat (2012) employed a qualitative survey in ascertaining banker's perception of electronic banking in Nigeria. Their findings revealed that Nigerian bankers perceive electronic banking as a tool for reducing transaction costs, minimizing inconvenience, saving customers banking time and altering customers queuing pattern. Olajide (2012) theoretically investigated cashless banking in Nigeria and its implications on the Nigerian economy. His findings revealed that cashless banking will boost the economy on the long run. Lee*, et al* (2002) used the qualitative survey to ascertain the influence of communication source and mode on consumer adoption of technological innovations in Nigeria. They discovered the older the adopters the lower the rate of technological adoption. Egwali (2008) using consumer acceptance theory investigated customers' perception of security indicators in online banking Sites in Benin, Edo, Nigeria. His study revealed that SI (Security Indicators) are not very effective in alerting and shielding users from revealing sensitive information to fool banking sites in Benin.

Karjaluoto, *et al* (2002) employed consumer acceptance theory in determining online banking acceptance. Their results revealed that attitude towards online banking and its usage is significantly affected by Prior Computer Experience, Prior Technological Experience, Personal Banking Experience and Reference Group Influence.

Knowledge Gap in Reviewed Literature

The above empirical study as comprehensive as it looks is not entirely exhaustive on the subject matter 'An Appraisal of Cashless Policy in Nigeria'. Cashless is becoming the language of the world economy. But what effect has it on the growth and development of the economy of developing nations such as Nigeria? Has the populace embraced this development? This can only be found out if proper research is done in this area. So many authors have put forward work as to how this can be done but it is noteworthy that little or no work has been done to know if the policy has impacted positively on the economy and as well as to know the rate of acceptance of the policy, that is, the extent of electronic transactions in the country. This is the gap which this research work intends to fill. Thus, this study will address in turn the above gaps. This study will begin by examining the extent of electronic card transactions in Nigeria and address the issue of whether there has been a decrease in cash-based transactions since the implementation of the cashless policy in Nigeria.

Methodology

Research design has to do with the structure and planning of the entire approach to a problem for research. This research design is concerned with the methods of collection of information in other to obtain genuine and straight forward data that will be used in the analysis for the subsequent chapter which is of great importance to the attainment of the goals of this research work. In the words of Onwumere (2009), a research design is a kind of blueprint that guides the researcher in his or her investigation and in analysis. According to Onodugo *et al* (2010), it is a format which the researcher employs to systematically apply the scientific methods in investigating problems. In other words, it is a master plan specifying the methods and procedures for collecting and analyzing data needed. The method of collecting data was selected after a lot of factors were put into consideration. Primary data

could not be used because of the nature of the subject matter and the unreliability of some of these data. This study employed a descriptive research design, which focuses on summarising existing phenomena through numerical data that characterise individuals or groups. It aims to evaluate and understand the nature of current conditions and events. The population of the study comprises all electronic and cash transactions that have taken place from the period of 2005 to 2014. The research focuses on the general evaluation of cashless policy in Nigeria. A non-random sampling technique was employed in this study, characterised by a deliberate and focused selection process based on the researcher's judgment. This method aims to gather findings that allow for generalisations about the broader population. It involves selecting a fixed, predetermined number of participants from the population to conduct the survey. Participants are chosen because they are deemed representative of the wider population. However, since the selection is not random, the extent to which the sample accurately reflects the population being studied is uncertain. The data were obtained from the statistical bulletin of the central bank of Nigeria, 2014. Time series data of the country's electronic transactions were extracted from Statistical bulletins of the CBN and excel tables and charts were used to present the results.

Presentation of Result

Table 4.1 USES OF ELECTRONIC CARD PRODUCTS 2008 - 2014

MARKET SHARE IN THE E-PAYMENT MARKET IN 2008-2014

	Volume (Million)				**Value (N' Billion)**			
E-Card Transaction Channels	**ATM**	**WEB (Internet)**	**POS**	**Mobile**	**ATM**	**WEB (Internet)**	**POS**	**Mobile**
2008	60.1	1.6	1.2	3.2	399.7	25.1	16.1	0.7
% of total	***(3%)***	***(8%)***	***(3%)***	***(6%)***	***(3%)***	***(7%)***	***(3%)***	***(0%)***
2009	109.2	2.7	0.9	1.8	548.6	84.2	11.0	1.3
% of total	***(6%)***	***(13%)***	***(2%)***	***(3%)***	***(4%)***	***(24%)***	***(2%)***	***(0%)***
2010	186.2	1.6	1.1	1.2	954.0	25.1	12.7	6.6
% of total	***(10%)***	***(8%)***	***(3%)***	***(2%)***	***(8%)***	***(7%)***	***(2%)***	***(1%)***
2011	347.6	3.6	2.1	1.9	1,561.8	58.0	31.0	20.5
% of total	***(20%)***	***(18%)***	***(5%)***	***(3%)***	***(13%)***	***(17%)***	***(5%)***	***(4%)***
2012	375.5	2.3	2.6	1.5	1,984.7	31.5	48.0	31.5
% of total	***(21%)***	***(11%)***	***(7%)***	***(3%)***	***(17%)***	***(9%)***	***(8%)***	***(6%)***
2013	295.3	2.9	9.4	15.8	2,828.9	47.3	161.0	142.8
% of total	***(17%)***	***(14%)***	***(25%)***	***(29%)***	***(24%)***	***(14%)***	***(27%)***	***(26%)***
2014	400.1	5.6	20.8	29.2	3,679.9	74.0	312.1	346.5
% of total	***(23%)***	***(28%)***	***(55%)***	***(54%)***	***(31%)***	***(22%)***	***(53%)***	***(63%)***

TOTAL	**1774**	**20.3**	**38.1**	**54.6**	**11,957.60**	**345.2**	**591.9**	**549.9**

***Source*: Computed from CBN Statistical Bulletin, 2014 and CBN Annual Financial Report, 2013**

Table 4.1 above shows the trend in volume (in millions) and in value (N' Billons) of electronic-card transactions in 2008 – 2014 and the percentages of each variable in the various years under study. From the above, it can be observed that electronic-card transactions recorded a significant increase from the year 2011 when the cashless policy was introduced compared to the level of its use in the years before the implementation of the policy. The volume and value of each variable in the various years under study are better explained in the graphs below.

Fig. 4.1

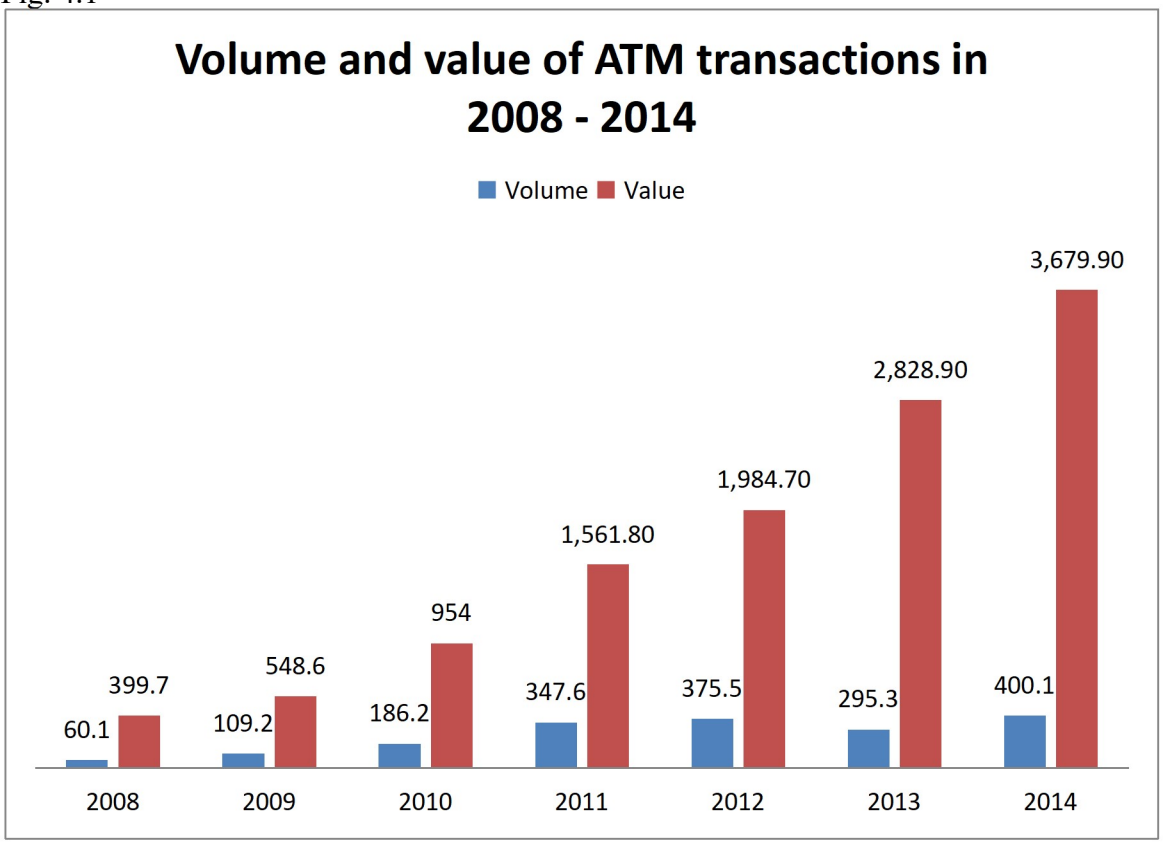


Fig. 4.1 above shows the volume and value of ATM transactions in 2008 – 2014. The volume and value of ATM transactions in 2008 stood at 60.1 million uses and N399.7 billion respectively, in 2009 it increased to 109.2 million uses which amounted to N548.6 billion, 2010 recorded 186.2 million uses which amounted to N954.0 billion, in year 2011 which the cashless policy was introduced, the number of ATM uses increased from 186.2 million uses and N954.0 billion in the previous year to 347.6 million uses which amounted to N1,561.80 billion, in 2012 it increased to 375.5 million uses with a value of N1,984.70 billion, though there was a decrease in the number of uses (295.3 million) of ATM in 2013 compare to the previous year, it still maintained increase in value at N2,828.90 billion, and in 2014 there was a record of 400.1 million in the number of ATM uses which amounted to N3,679.90 billion. From

the above it can be observed that there has been a significant increase in the level of ATM uses and in value since the cashless policy was introduced.

Fig. 4.2

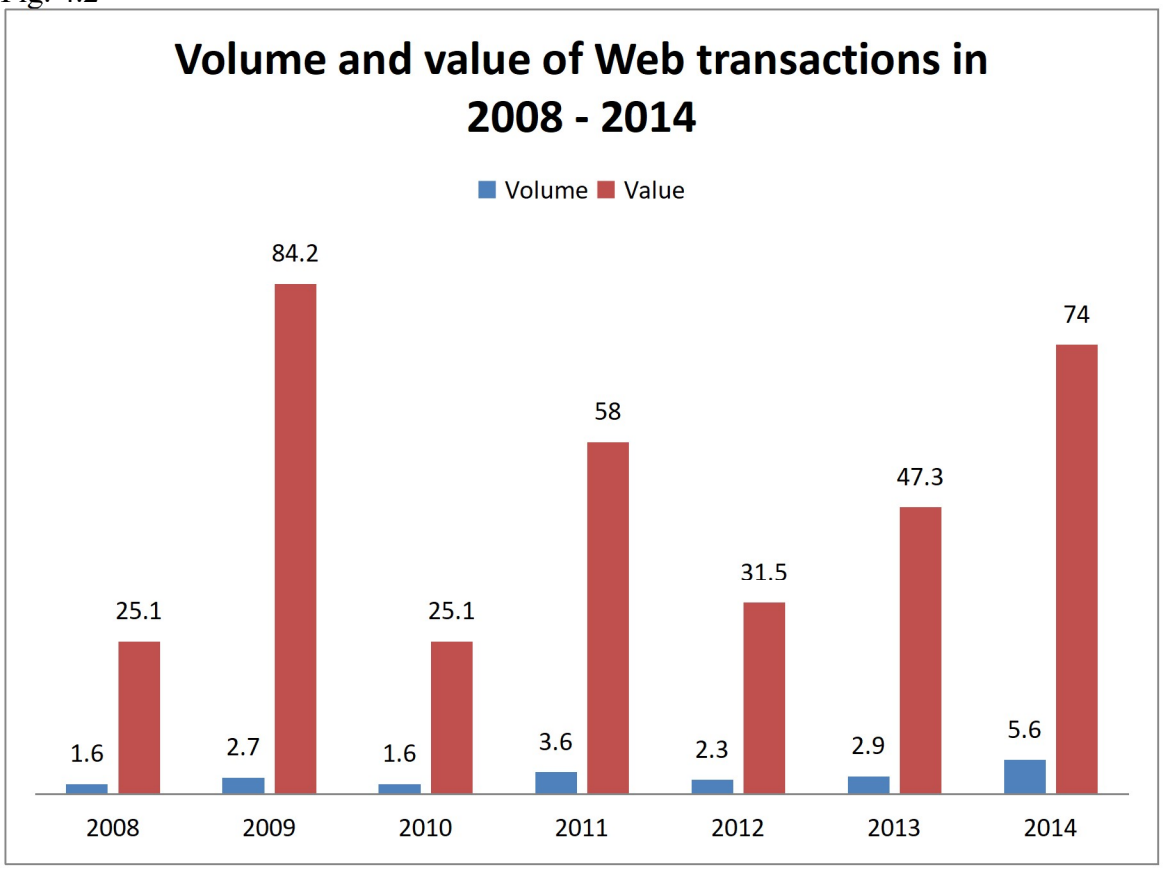


Fig. 4.2 shows the volume and value of web (internet) transactions in 2008 – 2014. The year 2008 had a total of 1.6 million web transactions which amounted to N25.1 billion, and in 2009 the number web transactions increased to 2.7 million which amounted to a significant value of N84.2 billion, in 2010 surprisingly, there was yet another 1.6 million web transactions which amounted to N25.1 billion, but in 2011 the number of web transactions increases 3.6 million which the was N58.0 billion, but decreased to 2.3 million web transactions in 2012 which amounted to N31.5 billion, and in 2013 the number of web transactions increased to 2.9 million which amounted to N47.3 billion, while in 2014 there was a record of 5.6 million internet transactions which amounted to N74.0 billion. The above records show that there has been a fluctuation in the level and value of web (internet) transactions even prior to the introduction of the cashless policy.

Fig 4.3

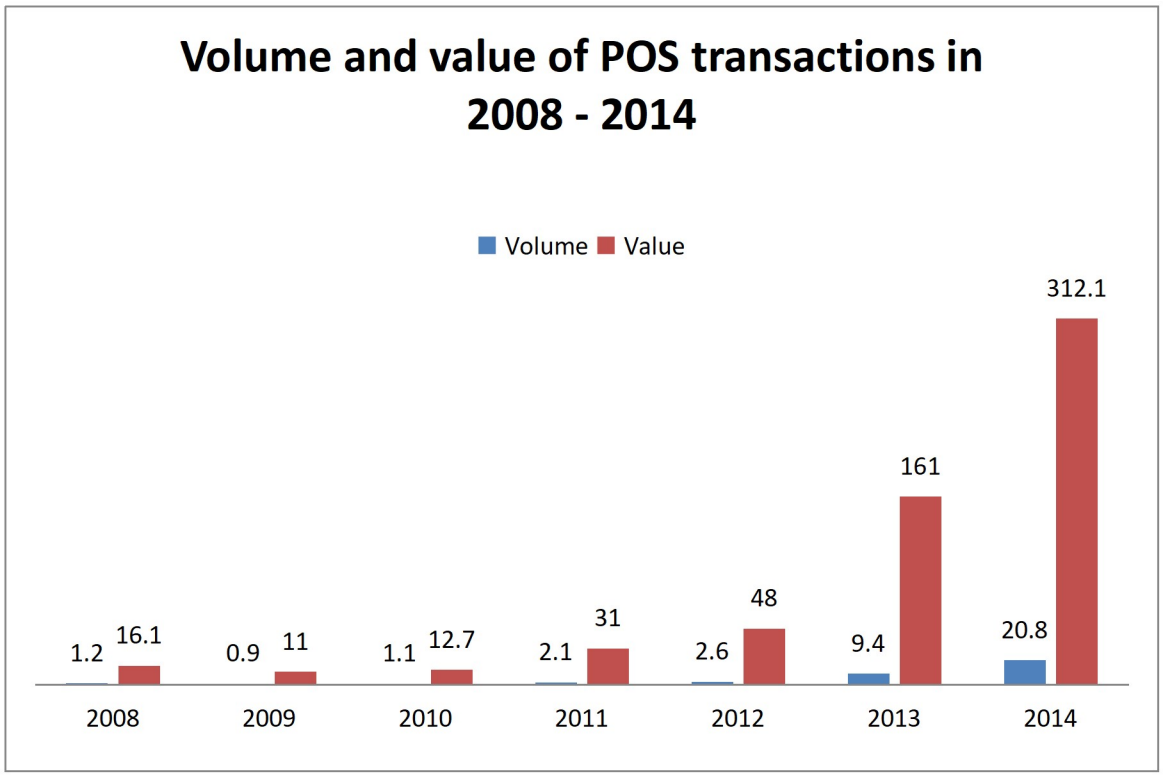


Fig. 4.3 shows the volume and value of POS transactions in 2008 – 2014. In the year 2008 there was total number of 1.2 million POS transactions which amounted to N16.1 billion, 2009 had a 0.9 million uses which amounted to N11.0 billion, and in 2010 there were 1.1 million number of POS transactions which resulted to N12.7 billion, in 2011 the number of POS transactions increased to 2.1 million which amounted to N31.0 billion, the number of uses further increased to 2.6 million in 2012 which amounted to N48.0 billion, the increase in the number of POS uses continued in 2013 with a total of 9.4 million transactions which amounted to N161.0 billion, further more in 2014 there a significant record of 20.8 million transactions which amounted to N312.1 billion in the year. The above record indicated that there has been a great rise in the number of POS uses since 2011 when cashless was introduced into the country

Fig. 4.4

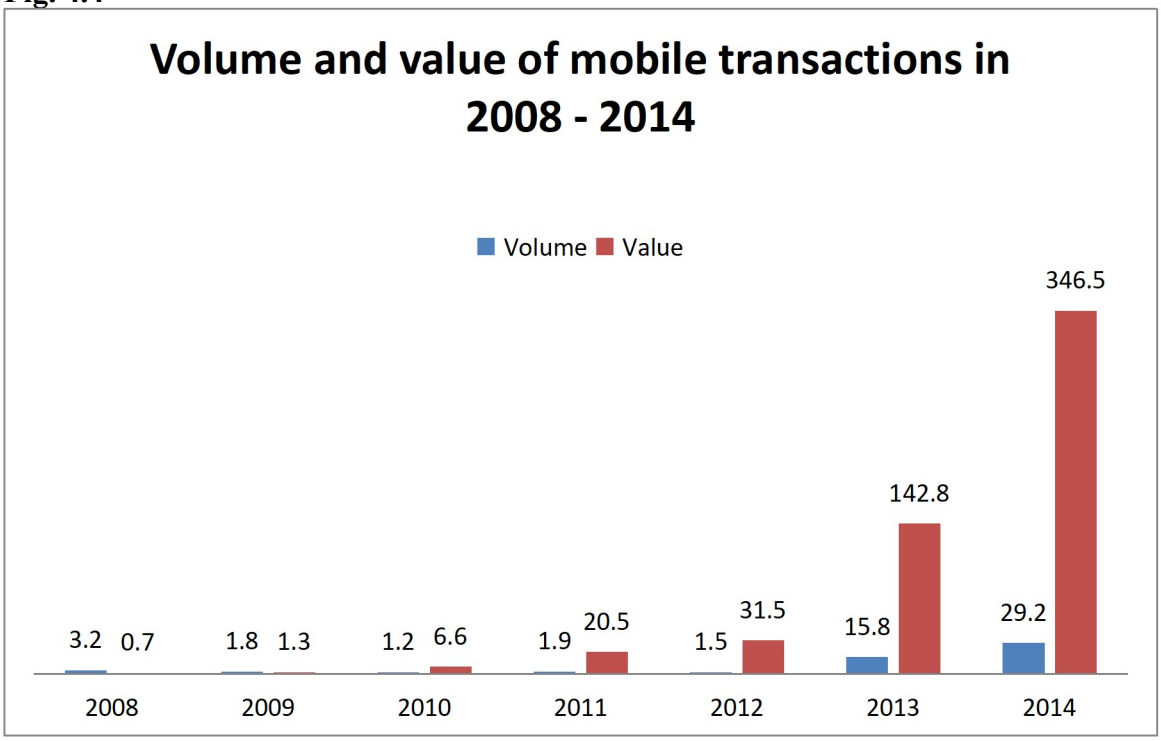


Fig. 4.4 above shows the volume and value of mobile transactions in 2008 – 2014. In 2008 there was a total number 3.2 million mobile transactions which amounted to only N0.7 billion, 2009 had a 1.8 million mobile transactions which amounted to N1.3 billion, and in 2010 there was a total number of 1.2 million mobile transactions which amounted to N6.6 billion, in 2011 the total number of mobile transactions increased to 1.9 million amounting to N20.5 billion, although there was a decrease in the number of transactions (1.5 million) in 2012 the value of transactions still increased to N31.5 billion, and in 2013 there a significant increase in the number of uses which was 15.8 million transactions amounting to N142.8 billion, the increase continued in 2014 with a total number of 29.2 million transactions which amounted to N346.5 billion. The above shows that there has been significant increase in the number and value of mobile transactions as from the year 2011 when the cashless policy was introduced.

4.2 Computation of ATM Ratio on Currency outside the Banks

Objective One:

To ascertain the extent of electronic card transactions, use in Nigeria

Step One: Data presentation for the computation of ATM ratio on currency outside the banks.

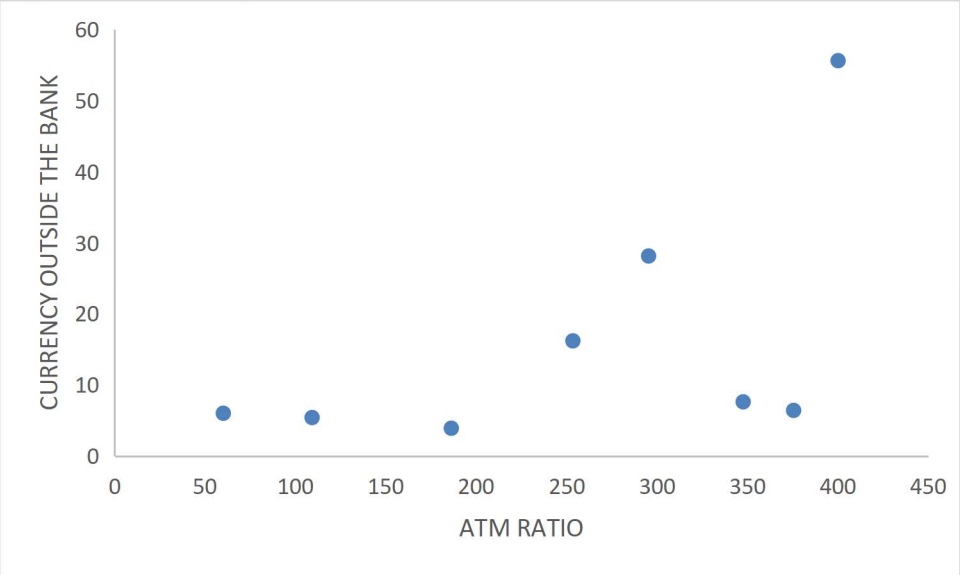
Table 4.2.1: Data Presentation for the Computation of ATM Ratio on Currency outside the Banks.

YEAR	*ATM RATIO (X)*	*CURRENCY OUTSIDE THE BANK (Y)*
2008	60.1	6
2009	109.2	5.4
2010	186.2	3.9
2011	347.6	7.6
2012	375.5	6.4
2013	295.3	28.2
2014	400.1	55.6

Source: Researcher's computation, from CBN statistical Bulletin 2014 and CBN annual financial report 2013

Step Two: Construct a Scatter Plot for ATM ratio and currency outside the banks in MS Excel

Fig. 4.2.1: Scatter plot



Step Three: Based on the scatter plot, predict the strength (i.e. weak, moderate or strong) and direction (positive or negative) of the correlation between ATM ratio and currency outside the banks.

Positive Associations

Scatter plots visually represent the distribution of data points and reveal any apparent relationships (correlations) between two variables, such as the ATM ratio and currency outside banks. These relationships can be classified into three main types: positive correlation, negative correlation, and no correlation.

In this study, there is a positive relationship between the ATM ratio and currency outside the banks- for every increase in ATM ratio, there is a corresponding increase in currency outside the banks (i.e. the more the ATM ratio, the higher the currency outside the banks). An association sometimes called a correlation is a relationship between two data sets. For example, in the above star scatter plot in Fig.1, there appears to be a relationship between the ATM ratio and currency outside the banks. There is an association because most of the data follows a pattern (except for those pesky outliers). The more tightly clumped the data is, the stronger the association is. There is a weak positive association between the ATM ratio and currency outside the banks. The scatter plot on Fig.1 has a weak positive association because it appears that the electronic card transactions uses that scored higher on the ATM ratio also scored higher on currency outside the banks. As one variable (ATM ratio) increased, the other variable (currency outside the banks) also increased. This means there is a positive association.

Step Four: Use MS Excel to calculate the correlation coefficient for the relationship between ATM ratio and currency outside the banks.

Table 4.2.2: Correlation Coefficient for the Relationship between ATM Ratio and Currency outside the Banks.

	ATM RATIO (X)	CURRENCY OUTSIDE THE BANK (Y)
ATM RATIO (X)	1	
CURRENCY OUTSIDE THE BANK (Y)	0.550763929	1

Step Five: Based on the correlation output from MS Excel, what is the correlation coefficient strength (i.e. weak, moderate or strong) of the correlation and the direction (positive or negative) of the correlation between ATM ratio and currency outside the banks?

Interpretation of Correlation Coefficient

The sign of the correlation coefficient determines whether the correlation is positive or negative. The magnitude of the correlation coefficient determines the strength of the correlation.

$0 < |r| < .3$ weak correlation

$.3 < |r| < .7$ moderate correlation

$|r| > 0.7$ strong correlation

From table 4.2.2, the correlation between the ATM ratio and ATM ratio is 1 because it is the same variable; the correlation between currency outside the banks and currency outside the banks is 1 because it is the same variable and the correlation between ATM ratio and currency outside the banks is 0.55(positive moderate correlation).

Decision

Since there is a positive moderate correlation between ATM ratio and currency outside the banks, the extent of electronic card transactions uses in Nigeria has increased.

Objective Two:

To determine if there has been a decrease in cash transaction with the implementation of cashless policy in Nigeria.

Step One: Data presentation for the computation of ATM ratio on currency outside the banks.

Table 4.2.3: Data Presentation for the Computation of ATM Ratio on Currency outside the Banks

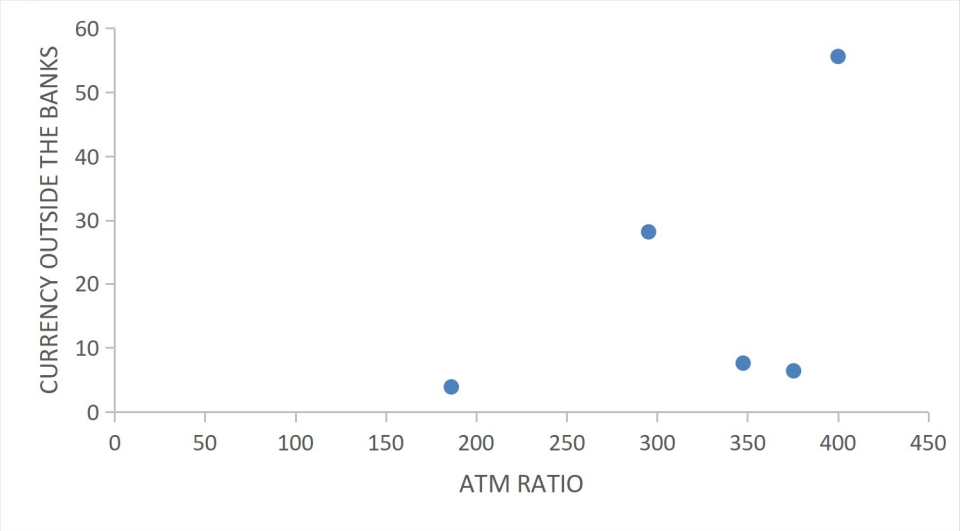
of Cashless Policy in Nigeria.

Year	*ATM RATIO*	*CURRENCY OUTSIDE THE BANKS*
2011	*347.6*	7.6
2012	*375.5*	6.4
2013	*295.3*	28.2
2014	*400.1*	55.6

Source: Researcher's computation, from CBN statistical Bulletin 2014 and CBN annual financial report 2013

Step Two: Construct a Scatter Plot for ATM ratio and currency outside the banks of cashless policy in Nigeria using MS Excel.

Fig. 4.2.3: Scatter Plot



Step Three: Based on the scatter plot, predict the strength (i.e. weak, moderate or strong) and direction (positive or negative) of the correlation between ATM ratio and currency outside the banks.

Positive Associations

Scatter plots are the distribution of data points and any apparent relationship (correlation) that exists between two variables (i.e. ATM ratio and currency outside the banks of cashless policy in Nigeria from 2011 to 2014). There are three basic classifications for the relationships of scatter plots: positive relationship, negative relationship and no relationship.

In this study, there is a positive relationship between ATM ratio and currency outside the banks- for every increase in ATM ratio, there is a corresponding increase in currency outside the banks of cashless policy in Nigeria (i.e. the more ATM ratio, the higher the currency outside the banks of cashless policy in Nigeria). An association sometimes called a correlation is a relationship between two data sets. For example, in the above star scatter plot in Fig.1, there appears to be a relationship between the ATM ratio and currency outside the banks. There is an association because most of the data follows a pattern (except for those pesky outliers). The more tightly clumped the data is, the stronger the association is. There is a strong positive association between ATM ratio and currency outside the banks. The scatter

plot in Fig.1 has a strong positive association because it appears that the electronic card transaction uses that scored higher on the ATM ratio also scored higher on currency outside the banks of cashless policy in Nigeria. As one variable (ATM ratio) increased, the other variable (currency outside the banks) also increased. This means there is a positive association.

Step Four: Use MS Excel to calculate the correlation coefficient for the relationship between ATM ratio and currency outside the banks.

Table 4.2.4: Correlation Coefficient for the Relationship between ATM Ratio and Currency outside the Banks of Cashless Policy in Nigeria.

	ATM RATIO (X)	CURRENCY OUTSIDE THE BANK (Y)
ATM RATIO (X)	1	
CURRENCY OUTSIDE THE BANK (Y)	0.550763929	1

Step Five: Based on the correlation output from MS Excel, what is the correlation coefficient strength (i.e. weak, moderate or strong) of the correlation and the direction (positive or negative) of the correlation between ATM ratio and currency outside the banks of cashless policy in Nigeria?

Interpretation of Correlation Coefficient

The sign of the correlation coefficient determines whether the correlation is positive or negative. The magnitude of the correlation coefficient determines the strength of the correlation.

$0 < |r| < .3$ weak correlation

$.3 < |r| < .7$ moderate correlation

$|r| > 0.7$ strong correlation

From Table 4.2.2, the correlation between ATM ratio and ATM ratio outside the banks is 1 because it is the same variable; the correlation between currency outside the banks and the banks is 1 because it is the same variable and the correlation between ATM ratio and outside the banks is 0.55 (positive moderate correlation).

Decision

Since a positive moderate correlation exists between ATM ratio and currency outside banks under Nigeria's cashless policy, the implementation of this policy has been accompanied by an increase in cash transactions.

Conclusion

Since there is a positive moderate correlation between ATM ratio and currency outside the banks, the extent of electronic card transactions use in Nigeria has increased and there have been increases in cash transaction with the implementation of cashless policy in Nigeria. The introduction of electronic banking in Nigeria has a strong influence on the development of payment system. However, it involves commitment of huge amount of financial resources on constant electricity, computer technology and telecommunication facilities. The ATM has been the best and the most common means of effecting cashless policy in Nigeria by learned and unlearned, poor and rich, so the government should adopt these suggestions to achieve desired results like other developed countries.

RECOMMENDATIONS

1. Government and CBN should create awareness on the benefits derivable from cashless policy for the improvement of businesses and economic development.

2. Skilled manpower and computer experts should be employed by every bank to prevent fraud and hacking of banks' data to steal customers' fund.
3. Electronic payment system is capital intensive, therefore banks are encouraged to collaborate to finance some of the infrastructures needed for the smooth implementation of the policy by sharing cost to reduce the initial cost of setting up electronic banking;
4. Governments should provide adequate security to create a safe environment that will make people imbibe the policy.
5. Since the sector has been privatised under a neoliberal reform, it is incumbent on the private sector to increase investment in the power sector. Banks can partner with electrical distribution companies and powerholding companies to provide more efficient power to their bank or deploy alternative power sectors to their bank
6. Government should also support banks in the aspect of financing the payment system which requires a lot of capital to maintain.

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