

# Influence of Cashless Economic Policy on the Nigerian Economy

\*Yunana Titus Wuyah and James Essien Akpan

Department of Economics and Management Science, Nigeria Police Academy, Wudil, Kano, Nigeria.

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**The paper examined the influence of cashless economic policy on economic growth in Nigeria by the use of ordinary least square technique on quarterly data from first quarter 2012 to first quarter 2015. The findings indicated that automatic teller machine, point on sale, internet banking and mobile banking had positive influence on economic growth in Nigeria. Except for internet banking, all the explanatory variables had significantly influence economic growth. The paper therefore recommended that government through the Central Bank of Nigeria should pursue cashless policy in the country in order to further stimulate growth.**

**Key words:** Cashless policy, economic growth, internet banking, automatic teller machine, mobile banking.

## INTRODUCTION

Cashless economy policy is a policy where transaction is done without necessarily carrying physical cash as a means of exchange of transaction but rather with the use of electronic means such as credit or debit card payment for goods and services. A 'cash-less' economy forms the middle phase of a three-phased economic model of payment systems. This essentially means that developing countries particularly Nigeria would transit from a 'cash-based' economic model to 'cash-less' economic model before achieving the pure state of a 'cashless' economic model. A cash-based economy is one in which day-to-day payments and business activities are predominantly transacted in physical notes and coins [1]. Cash-less economy, on the other hand, is an economy where the physical cash circulating in the economy is minimised while other forms of payment, especially electronic based payments, are utilised [2,3]. In other words, cash-less economy is a combination of the cash-based payment system and electronic payment systems, with the latter exceeding the former in terms of utilisation. A cashless economy represents the pure state of non-cash payment systems where no more sturdy coins and notes are printed for circulation by the Central Bank.

All the money in a cashless economy is private money issued by banks in the form of deposits, or some fancier e-money. According to European Central Bank (ECB) [4], electronic money is broadly defined as an electronic store of monetary value on a technical device that may be widely used for making payments to undertakings other than the issuer without necessarily involving bank accounts in the transactions, but acting as a prepaid bearer instrument. Analogous to this definition is that of cashless economy wherein there exists no notes and coins issued by central banks but by private financial institutions [5]. In line with global trends, the Central Bank of Nigeria (CBN) [6] introduced Cash-less Policy to the Nigerian economy. This Policy aims at reducing the amount of physical cash circulating in the economy whilst encouraging the use of alternative electronic products and channels for financial transactions. The policy would also assist in fostering transparency and curbing corruption and modernisation of the country's payment system. Other advantages are reduction in cost of banking services, reduction of risks and armed robbery as well as meeting the challenges of Vision: 2020.

This policy started in Lagos State on the 1<sup>st</sup> of January, 2012 and later took off in other parts of the country on July 1, 2014. The choice of Lagos state as the starting point is explicable, given that Lagos is ahead of other states in terms of banking penetration and payment infrastructure [6]. The Policy, which has been endorsed

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\*Corresponding Author's E-mail: [inzehty01@gmail.com](mailto:inzehty01@gmail.com).

by the Bankers' Committee, pegs the daily limit for withdrawal of cash in banks at N500, 000 and N3, 000,000 for individuals and corporate bodies respectively. Where individuals and corporate bodies choose to withdraw more than the set limit, charges of 3% and 5% respectively on every N1, 000 above the approved limit would be incurred [6]. According to the apex bank, the policy became necessary to discourage the high usage of cash across the economy which has a number of negative consequences including high cost of cash. In 2009, the direct cost of cash management to the banking industry was N114.5billion, and may be as high as N295.97billion in 2015. This spiralling cost of cash management, most of which is passed onto the consumer in the form of bank charges and lending rates, is as a result of the cash dominant economy existing in Nigeria. For example, in December 2008, Currency-In-Circulation (CIC) was N1.184 trillion but rose by 20.36% in December 2009. As at December 31, 2010 the total CIC value stood at N1.378 trillion, showing an increase of 16.5%. Further reports show that about 90% of daily withdrawals by bank customers are below N150, 000, thus, only about 10% of bank customers are responsible for the cost of cash management borne by all bank customers [6].

The infrastructures in Nigeria over the years have not been reputable and have thus given way to ineffectiveness to the sincerity in financial transactions in the banks. The technology available for carrying out banking transactions are not as effective as they ought to be therefore leaving people with no other choice than to keep cash in their houses. On these bases, this study aims at assessing the influence of the cashless policy on the Nigerian economy. We structure the research work into five sections - we explained the background to the study in section one; the second section reviewed related literature and theory that supported the work, while section three looked at the methodology of the study. We present and analysed the results in section four while the final section drew conclusion and made vital recommendations of the study.

### **Cashless economic policy in Nigeria**

The cashless economic policy commenced implementation in Lagos in 2012 and other parts of the country on July 1, 2014 and applies to all accounts, except all embassies, diplomatic missions and multilateral and aid donor agencies in Nigeria. The policy provided that from March 30, 2012 in Lagos and July 1, 2014 in other parts of the country, a daily cumulative limit of N500, 000 and N3, 000,000 on free cash withdrawals and lodgements by individual and corporate customers respectively was imposed. Where individuals and corporate organizations carry out cash transactions above the limits, charges would be incurred. By this, banks are authorized to deduct 3% for every N1, 000

above N500, 000 transacted by individual customers, and 5% per N1, 000 above the N3 million limit transacted by their corporate customers. The contravention of this provision by the bank shall attract a fine of five times the amount that the bank waives as a first offender and subsequently, the bank shall pay ten times the charges waived. It is imperative to note that the limit is set to apply to the account irrespective of the channel by which the cash was either withdrawn or deposited. Thus withdrawals or deposits made from over the counter, ATM and 3rd party cheques encashed over the counter all make up the cumulative limit. Furthermore, the limit applies to cash brought through Cash-in-Transit (CIT) companies, as the CIT companies only serve as a means of transportation [6].

Under the policy, third party cheques above the sum of N150, 000 shall not be eligible for encashment over the counter. Rather, value for such cheques shall be received through the clearing house. Thus any cheque issued with a value above N150, 00 to a third party can only be deposited into an account, as such cheques cannot be cashed. If a bank allows 3rd party cheque encashment, it shall be liable to a sanction of 10% of the face value of the cheque or N100, 000 whichever is higher. Nigeria is a heavily cash oriented economy with retail and commercial payments primarily made in cash. Indeed, cash is a strong motivator in Nigeria's highly informal economy. According to the CBN [7], cash related transactions represented over 99% of customer's activity in Nigerian banks as at December 2011. In 2009, the CBN spent about N34b in printing currency notes, but as at December 2012, it was N17.97b. Recent report from CBN indicates that over 85% of the cash in circulation in Nigeria is outside the banking System while only about 15% are within the system [7].

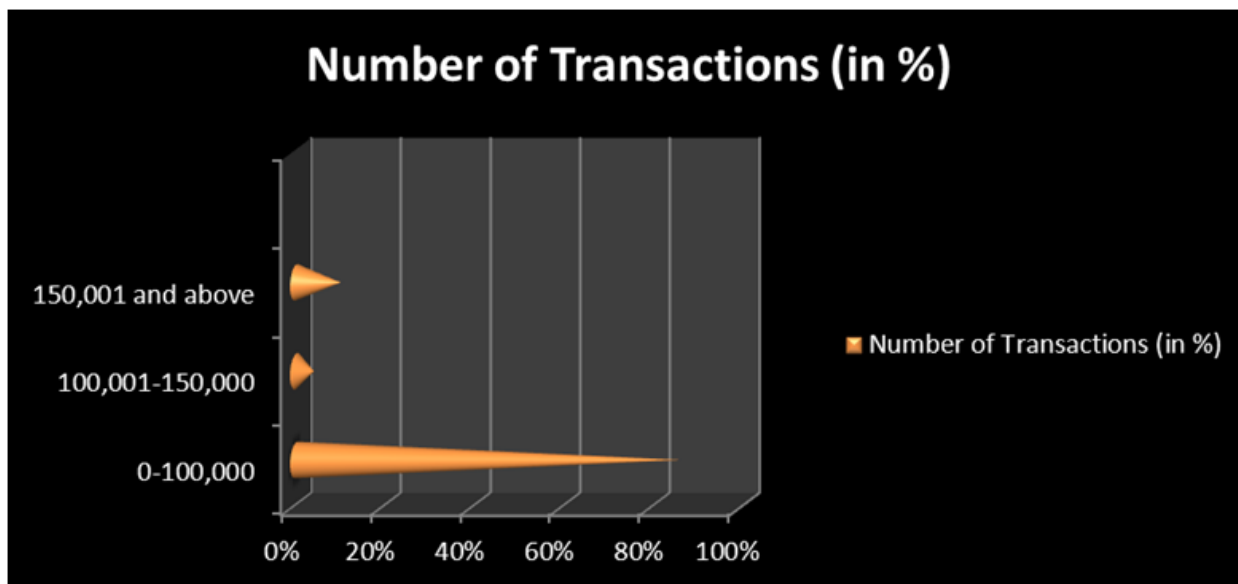
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Table 1 and Figure 1 above show that "only 10 per cent of banks' cash transactions are above N150, 000, but they make up 71% of the value of cash transactions. About 90% of Nigerians carry out transactions below N150, 000. This means that the high patronage Nigerian banks receive is majorly from customers who carry out transactions below N150, 000. There are so many alternative payment systems in Nigeria which are even more convenient and safe, but people are not using them. If bank customers are encouraged to use the cashless policy instruments such as the ATMs, Mobile money, Point on Sale (POS), internet banking (Web), etc, then the banking halls will be more welcoming and less crowded. Cash – based economy is not without cost to the

**Table 1:** Cash Transactions.

Withdrawal / Lodgement band	Volume of Transactions (%)	Value of Transactions (N'Bn)
0-N100,000	86%	491
N100,001-N150,000	4%	115
Above N150,000	10%	1469
<b>Total</b>	<b>100%</b>	<b>2076</b>

Source: CBN, 2011.



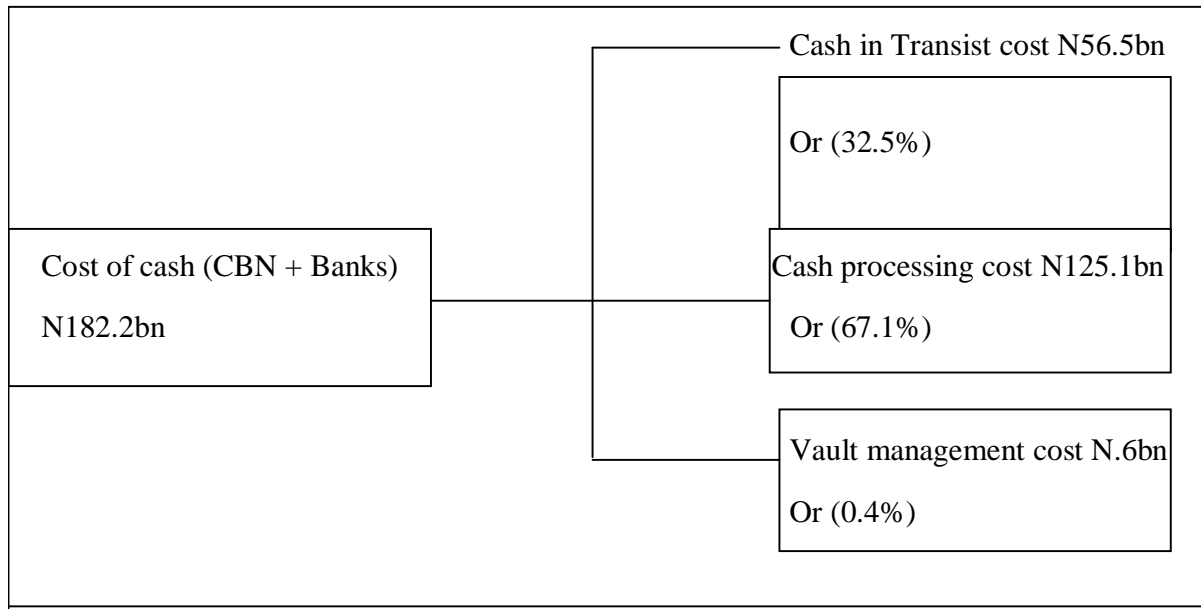
**Figure 1:** Cash Transactions.  
Source: CBN, 2011.

banking system, government and individuals. High cash usage, results in high cost of processing, borne by every entity across the value chain (i.e. from the CBN, to banks, to the operating entities and individuals as well). For example, the cost of printing new bank notes as a result of frequent handling of cash is said to cost the CBN a colossal amount annually. Generally, cost of cash to Nigeria's financial system is high and increasing. It is estimated to reach N295.97billion in 2015 [6]. Figure 2 presents direct cost of cash to financial system in Nigeria in 2011. The figure indicates that cash in transit cost and cash processing cost stood at N56.5billion and N125.1 billion, representing 32.5% and 67.1% respectively, while vault management cost amounted to N.6billion representing 0.4 percent of the total direct cost of cash to the financial system. The grand total of cost of cash to both the CBN and other banks in 2009 reach a terrifying amount of N182.2billion. The volume of cash in circulation also plays a vital role in reaching the set goals of the cash-less policy in Nigeria. In 2008, total volume of currency notes in circulation was over 5.78billion and as at 2012, it was 7.10billion. The value of cash as at 2009

was 1184billion and 1632billion in 2012 [7]. A reduction in the volume of currency in circulation is an indication that the cash-less policy if fully implemented will reduce the cost incurred by CBN to produce physical cash as stated above. The excess amount can then be injected into the economy for viable economic activities.

#### Literature Review and theoretical framework

The CBN introduced a new policy on cash-based transactions which stipulates cash handling charge on daily cash withdrawals that exceed N500, 000 for Individuals and N3, 000,000 for corporate bodies. The new policy on cash-based transactions (withdrawals) in banks, aims at reducing (not eliminating) the amount of physical cash (coins and notes) circulating in the economy, and encouraging more electronic-based transactions (payments for goods, services, transfers, etc.) [7]. Omotunde *et al.* [8] studied the influence of cashless policy in Nigeria. Responses from the respondents show that cashless policy will increase employment; reduce cash related robbery thereby



**Figure 2:** Highlight of Industry cost of cash management 2011.  
**Source:** CBN, 2011.

reducing risk of carrying cash; cashless policy will also reduce cash related corruption and attract more foreign investors to the country. The study, therefore, shows that the introduction of cashless economy in Nigeria can be seen as a step in the right direction. It is expected that its influence will be felt in modernization of Nigeria payment system, reduction in the cost of banking services, reduction in high security and safety risks and also curb banking related corruptions

Olajide [9] used descriptive survey to investigate cashless banking in Nigeria and its implications on the economy. The study found out that cashless banking would boost the economy in the long run if the Nigerian technological infrastructures were put in place. Morufu and Taibat [10] used qualitative survey to ascertain banker's perceptions of electronic banking in Nigeria. The results suggested that bankers in Nigeria perceive electronic banking as a tool for minimizing inconvenience, reducing transaction costs, altering customers queuing pattern and saving customers banking time. Olatokun and Igbinidion [11] used diffusion of innovation (DOI) theory to investigate 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 to the use of the Automated Teller Machine (ATM) cards in Nigeria.

Hogarth *et al.* [12] used diffusion innovation theory to investigate the consumer payment choices: paper, plastics or electrons. They found out that increases in income and education also elicit a positive effect on adoption of electronic banking, regardless of the technology. On the other hand, the influences of other

demographic characteristics on adoption were less clear. Karjaluo *et al.* [13] used consumer acceptance theory to determine online banking acceptance. They found out 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. De Grauwe [5] examined the costs of cash and payment cards in Iceland and Belgium. These countries were selected because they provide a clear contrast as Iceland has one of the lowest rate of cash usage while Belgium is at the other extreme. For the cash payment system in Iceland, the study estimates the cash production and distribution costs incurred by Central Bank and subtract the revenues obtained through interest foregone on cash in circulation whereas, for the card-based system, they examine the card companies, commercial and savings banks, cardholders and merchants.

Echekoba and Ezu [14], in their study on cashless policy and growth in Nigeria, observed that 68.2% of the respondent complained about long queues in the bank, 28.9% complained of bad attitude of teller officers (cashiers) while 2.89% complained of long distance of bank locations to their home or work places. Likewise, in her 24th NCS national conference in December 2011, CBN data shows that 51% of withdrawal done in Nigeria was through ATM, while 33.6% was through over the counter (OTC) cash withdrawals and 13.6% through cheques. Payment was also done through point of sales machine (POS) which accounted for 0.5% and web 1.3%. Therefore, if the introduction of ATM in Nigeria cash withdrawals system reduced OTC withdrawal; then it will implies that introduction of cashless policy supported by

application of information technology can achieve more to reduce over dependent on cash payment in Nigeria economy system.

**Theories of cashless economic policy**

**Technology Acceptance Model**

The theory of Technology Acceptance Model was proposed by Fred Davis in 1989. The theory has been developed to provide a better understanding of the usage and adoption of information technology. It is presently a prominent theory used in modelling technology acceptance and adoption in Information systems research. Technology Acceptance Model is an information systems theory that models how users come to accept and use a technology that will encourage economic growth. The model suggests that when users are presented with a new technology, a number of factors influence their decision about how and when they will use it. The factors are: perceived usefulness (PU) and perceived ease-of-use (PEOU). According to Technology Acceptance Model, one's actual use of a technology system is influenced directly or indirectly by the user's behavioral intentions, attitude, perceived usefulness of the system, and perceived ease of the system.

**Diffusion of Innovation Theory**

This theory was developed by Gabriel and Rogers in 1962. DOI's theory seeks to explain how, why, and at what rate new ideas and technology spread through cultures. He said diffusion is the process by which an innovation is communicated through certain channels over time among the members of a social system. Rogers explained the process of Innovation diffusion as one which is dictated by uncertainty reduction behaviour amongst potential adopters during the introduction of technological innovations. Innovation Diffusion Theory (IDT) consists of six major components: innovation characteristics, individual user characteristics, adopter distribution over time, diffusion networks, innovativeness and adopter categories, and the individual adoption process. Arguably the most popular of the six components of IDT centres on the characteristics of the innovation itself.

**Quantity Theory of Money**

Quantity Theory of Money said that the level of prices in the economy is directly related to the quantity of money in the economy. Hetzel [15] stated that the Quantity Theory of Money is one of the oldest and most useful ideas in economics which explains the determination of variables measured in dollars (or naira) such as the price level. He further stated that Milton Friedman and Anna Schwartz had given the quantity theory a specific form, known as

monetarism, through their hypothesis that shifts in the money supply schedule have been large relative to shift in the money demand schedule. The quantity theory of money is an economic idea that states that the supply of money in an economy determines the level of prices and changes in the money supply result in proportional changes in prices. Using the Irving Fisher's equation as:

$$MV = PT \dots\dots\dots 1$$

The above equation is interpreted as follows

- M = Money supply or stock of money in a given country.
- V = Velocity of circulation i.e the number of times the money supply circulates around the economy in a given period of time.
- P = Average price level of goods and services.
- T = Transactions total number of goods and services sold or added to stock in a given period of time. [16]

MV is the money supply multiplied by the number of times it flows around the economy buying goods and services over a particular period of time. It is the same as the total expenditure, GNE, over that period of time. PT is the total of goods and services produced multiplied by the price at which they are on average sold. This is the same as total production GNP, over the particular period of time:

$$GNE = GNP \dots\dots\dots 2$$

$$\text{Therefore, } MV = PT \dots\dots\dots 3$$

Money spent on goods is necessarily the same as the value of which the goods were sold. Therefore, the quantity theory of money is adopted for this study.

**RESEARCH METHODOLOGY**

To analyze the influence of cashless economy policy on the Nigeria economy, multiple regression model was adopted. The data sets used for this analysis is the quarterly time series of the selected variables from 1<sup>st</sup> quarter 2012 to 1<sup>st</sup> quarter 2015. The choice for the period was as a result of the introduction of the cashless policy in January 1<sup>st</sup>, 2012 by the CBN. The data was extracted from the CBN quarterly reports and Statistical Bulletin of various years and others economic papers.

**Research Hypothesis**

The hypothesis below was tested as a means of carrying out the objective of the study:

- H<sub>0</sub>: Null hypothesis. Economic growth is not significantly influenced by cashless economic policy in Nigeria. (H<sub>0</sub> = 0).
- H<sub>1</sub>: Alternative hypothesis. Economic growth is significantly influenced by cashless economic policy in Nigeria. (H<sub>0</sub> ≠ 0).

**Table 2:** Regression Results.

Functional form	Constant term	Coefficients				R <sup>2</sup>	R <sup>2</sup>	F-Stat
		ATM	POS	WEB	MB	0.93		
Regression	3.14 (4.02)	0.42 (2.61)	0.18 (1.93)	2.39 (0.24)	0.27 (3.14)	0.931	0.884	67.214

Source: E-view 11.0.

### Technique of analysis and Model specification

The study make used of analytical tool “regression techniques” [Ordinary least Square (OLS)] to assess the influence of cashless economy policy on the Nigerian Economy. To assess the influence of cashless economic policy on the Nigerian Economy, the linear regression model is specified as:

$$GDP = (\text{ATM}, \text{POS}, \text{WEB}, \text{MB}) \dots\dots\dots 4$$

Where

GDP = Economic growth proxy by gross domestic product (GDP)

ATM= Automatic teller machine

POS= point of sale

WEB= internet banking

MB= mobile banking

The stochastic form of the model is:

$$GDP_t = \beta_0 + \beta_1 \text{ATM}_t + \beta_2 \text{POS}_t + \beta_3 \text{WEB}_t + \beta_4 \text{MB}_t + U_t \dots\dots\dots 5$$

Where

$\beta_0 - \beta_4$  are parameters to be estimated

$U_t$  is the error term

### RESULTS AND DISCUSSION

Equation 2 was estimated using econometrics view and the results are presented in Table 2 for the influence of ATM, POS, WEB and MB on economic growth (GDP). The estimated regression equation for the model is also given in Table 2. In Table 1, the intercept is 3.14 which means without cashless economic policy (ATM, POS, WEB and MB), the economy of Nigeria will grow by 3.14%. The coefficient of ATM is 0.42, which means that an increase in ATM points and usage by 1% would lead to 0.42% increase in economic growth. It implies that ATM is not only correctly signed (positive) but also significant which is in line with the prior expectation and other findings such as Ehekoba and Ezu [14]. The coefficient of POS is 0.18 which implies that if POS increase by 1% it would lead to about 0.18% increase in economic growth in Nigeria. This implies that increase in POS is one of the major variables that influence economic growth as shown by the t-statistics. Furthermore, the coefficient of WEB is 2.39 which mean that the relationship is positive therefore a 1% increase in WEB would lead to 2.39% increase in economic growth.

The coefficient of MB is 0.27. This means that a percentage increase in MB would definitely result to increase in economic growth by 0.27 percent. Therefore, if the introduction of ATM in Nigeria cash withdrawals system reduced OTC withdrawal; then it will implies that introduction of cashless policy supported by application of information technology can achieve more to reduce over dependent on cash payment in Nigeria economy system [14].

The R-square figure is 0.931 with adjusted R-square of 0.884. The F-statistics is 67.214. The results show that 88% of what happen to economic growth (GDP) is explained by all the regressors (cashless economic policy variables). The remaining 12% is accounted for by the variables not included in the model. Finally, all the t-statistics of the coefficients are statistically significant except for WEB. The F-statistic of 67.214 indicated that all the variables are significant in explaining economic growth. We therefore, reject the null hypothesis and accept the alternative that economic growth is influenced by cashless economic policy in Nigeria.

### Conclusion and recommendations

The research work showed that there is a relationship between economic growth and cashless economic policy in Nigeria. OLS was used and estimated the multiple regression model which has powerful predictive capacity for the explanation of the degree of influence of cashless economic policy on economic growth in Nigeria. The result indicates that all the explanatory variables have positive relationship with economic growth and are highly significant except for WEB. This study therefore concludes that automatic teller machine, point of sale and mobile banking are the major contributing factors to the reduction on over dependent on cash payment in Nigeria economy system and growth stimulation in the economy. The research work therefore, recommends that the government and the financial institutions should provide infrastructural facilities like power and electricity to provide support for electronic banking equipment and also, public awareness about the policy should be encouraged.

### Reference

- [1] Baddeley M. Using E-Cash in the New Economy: An Economic Analysis of Micro-payment Systems. J Elect Commerce Res, 2004;

5(4): 239-253.

[2] Basel Committee. Risk Management for Electronic Banking and Electronic Money Activities. 1998. Basel Committee Publications, No. 35.

[3] Mobile Banking: UNCTAD (2012) "Report, Africa Research Bulletin" Economic, Financial and Technical Series, 48: 19345A–19346B. doi: 10.1111/j.1467-6346.2011.04259.

[4] European Central Bank (ECB). Report on Electronic Money. Frankfurt, August 1998.

[5] De Grauwe P, Buyst E, Rinaldi L. The Costs of Cash and Cards Compared: The Cases of Iceland and Belgium London. De Brook Ltd. 2000.

[6] Central Bank of Nigeria (CBN). New Cash Policy, Presentation for the Interactive Engagement Session with Stakeholders on Cash-Less Lagos. Stakeholder Session – Supermarket Operators. 2011.

[7] Central Bank of Nigeria (CBN). Towards a Cash-less Nigeria: Tools and Strategies. 2012. Retrieved, September 19, 2015 from <http://www.ncs.org.ng/wp-content/uploads/2012/08/Cashless2012-4.pdf>.

[8] Omotunde M, Sunday T, John D. Influence of Cashless Policy in Nigeria. Greener J Internet, Informat Communicat Syst, 2013; 1(2): 040-043.

[9] Olajide VC. Cashless banking in Nigeria and its Implications. 2012. Retrieved online on 23 June, 2015 from <https://mpra.ub.uni-muenchen.de/38096/>.

[10] Morufu O, Taibat A. Bankers perceptions of electronic banking in Nigeria: A review of post consolidation experience. Res J Fin Account, 2012; 3(2): 5-6.

[11] Olatokun WM, Igbinedion LJ. The Adoption of Automatic Teller Machines in Nigeria: An Application of the Theory of Diffusion of Innovation. Issues Inform Sci Informat Technol, 2009; 6(2): 373-393.

[12] Hogarth JM, Kolodinsky J, Gabor T. Consumer Payment Choices: Paper, Plastics or Electrons. Int J Elect Bank, 2008; 1(1): 16-16.

[13] Karjaluoto H, Mattila M, Pentto T. Factors Underlying Attitude Formation towards Online Banking in Finland. Int J Bank Market, 2002; 20(6): 261-272.

[14] Echekeba FN, Ezu GK. Electronic Retail Payment Systems: User Acceptability and Payment Problems in Nigeria. Arab J Bus Manage Rev, 2012; 5: 60 – 63.

[15] Hetzel RL. A Quantity Theory Framework for Monetary Policy of Federal Reserve Bank of Richmond. Econ Q, 1993; 79(3): 35-47.

[16] Reem H. What is the Quantity Theory of Money. 2005. Retrieved data on 6 July, 2015 from <https://www.investopedia.com/articles/05/010705.asp>.