



Point of Sale and Cashless Policy in Nigeria: Challenges and Prospects

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Authors' contributions

This work was carried out in collaboration between both authors. Author CIA designed the study, performed the statistical analysis, wrote the protocol and wrote the first draft of the manuscript. Author CIS managed the analysis of the study and the literature reviews. Both authors read and approved the final manuscript.

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ABSTRACT

The study examined the impact of Point of Sale (POS) on cashless policy, issues and prospect in Nigeria economy; research questions were formulated and distributed to the sample population of 500 drawn from various POS operating centers in line with the objectives of the study. Four hundred and fifty responses were returned while fifty copies were not returned; the responses were categorized according to strongly agreed, agreed, strongly disagreed, disagreed and neutral with weight of (5,4,3,2,1) assigned to each category respectively to generate acceptable raw data for econometric analysis. The raw data were analyzed using cointegrated, ordinary least squares, autoregressive distributed lag, unit root and Grange causality; the result shows that POS has significant and positive impact on cashless policy in Nigeria. We therefore recommend that POS should be deployed to various areas to facilitates exchange transactions and ultimately reduces cash based related transactions in the economy.

Keywords: Co-Integrated least squares; autoregressive distributed lag; granger causality.

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1. INTRODUCTION

In today's banking environment, the more technologically inclined a bank is the larger its customer base. This is because of the generational phase we live in, where a child of five (5) years knows how to operate computers and surf the internet. This has metamorphosed to even the daily buying and selling that takes place, outlets such as; Amazon, Jumia, Alibaba e.tc have created a platform where buyers all over the world can order for the stock of their choice and get it within days. Upon all the buying's and selling transaction that takes place, there is a common bond that fosters the smooth transactions of these outlets. The common bond is the services of the bank that serves as the settlement and clearing agents for all these transactions. The world today is termed a global village because of the electronic clearances and settlements made by banks all over the world. Therefore the importance of banks cannot be overemphasized because there are essential agents for the growth of an economy.

Technological improvements have made the business environment of today witness rapid changes. Most businesses of today carry out their activities through electronic commerce (E-Commerce). E-commerce is conducting business through the internet and this has also been adopted in the banking sector. The banking sector has changed phenomenally. Activities in the banks have transformed from the manual ways of providing services to electronic banking. In time past, every transaction would have to be carried out in a banking hall over the counter where customers will spend long hours on queues to make deposits or withdraw cash. But after the introduction of E-Banking in the country in 2003, provision of services improved and the competition between banks increased dramatically. Most developed countries such as the United Kingdom, Norway, Denmark, Sweden, and many other have adopted a modernized state which is cashless and this is promoted through E-Banking devices, unlike Nigeria that is lagging behind. Change is the only constant factor in this dynamic world and the banking sector is not an exception Ikpefan and Agwu, [1]. A cashless economy does not mean the absence of cash in the economy, it only describes an economic system in which transactions occur without the physical carrying of cash from one person to another. A cashless economy is a society whereby credit cards, debit cards, charge cards, and direct transfer are used for making

purchases. Some benefits of a cashless society is that it reduces money laundering and other related cash crimes to a minimum; just as the introduction and implementation of the treasury single accounts (TSA) in 2015 where the funds of various ministries, departments and agencies (MDAs) which were previously maintained by DMBs, are transferred to a single Remita system maintained by Central Bank of Nigeria. The TSA has helped to curb financial malpractices that have hovered in the public system. Electronic banking forms the bedrock of cashless policy through E-Payments, the cashless economy will eventually be achieved. Some of the means of E-Payments include online/internet banking, point of sale terminals (POS), mobile banking, etc. All these channels are effective means which are adopted and thereby improves a cashless state. It is on this background that this study seeks to investigate the relationship between electronic banking and cashless policy and how the variables adopted for this study have affected the economy.

1.1 Statement of Problem

Cashless policy in Nigeria is however a new policy implemented by Central Bank of Nigeria; though, its wide acceptance is yet to be effected due to various inadequacy of electronic payment systems; the consistence use of POS as a drive to implement cashless policy is yet to gain acceptance by all and sundry in the country. The various issues associated with the use of POS such as syntax error, over-debiting customers accounts, reversal errors etc culminated the wide rejection of the policy.

However, Adu [2] investigated the need for cashless policy in the country and found insignificant relationship between electronic payments and cashless policy, Tunde and Edori (2017) use seasonality approach to determine the impact of POS on cashless policy in Nigeria, the results shows the magnitude of POS in influencing cashless policy in Nigeria. Based on these divergent views of different researchers, this research work is anchored on the impact of POS on cashless policy; issues and prospect.

1.2 Research Objectives

The broad objective of the study centered on the impact of point of sale (POS) on cashless policy in Nigeria; whereas the specific objective is to:

1. Investigate the impact of syntax error in POS on cashless policy in Nigeria.
2. Examine the exact impact of POS usage on cashless policy in Nigeria.
3. Determine the intermediating effect of POS on cashless policy in Nigeria.

1.3 Research Hypotheses

Based on the divergence view of different academia in the field of economics and finance, the hypotheses are designed in line with the specific objectives in their null form;

H0₁: Syntax error in POS does not significantly affect cashless policy in Nigeria.

H0₂: The consistent use of POS does not significantly encourage cashless policy in Nigeria.

H0₃: The intermediating effect of POS does not relate to cashless policy significantly in Nigeria.

2. REVIEW OF RELATED LITERATURE

2.1 Conceptual Review

Cashless economy does not mean an outright elimination of cash transactions in the economic setting but one in which the amount of cash-based transactions are kept to the barest minimum. According to Woodford [3], cashless economy is defined as one in which there are assumed to be no transactions frictions that can be reduced through the use of money balances, and that accordingly provide a reason for holding such balances even when they earn rate of return. The following 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 (Acha, 2008a). The cashless policy initiative of the Central Bank of Nigeria is a move to improve the financial terrain of the economy.

The policy aims at reducing (not eliminating) the amount of physical cash (coins and notes) circulating in the economy, and to encourage more electronic-based transactions (payments for goods, services, transfers). A cashless society is a culture where no one uses cash, all purchases being made are by credit cards, charge cards, cheques, or direct transfers from one account to another through mobile banking or other electronic money transfer modes. The cashless society refers to the widespread

application of computer technology in the financial system (Obi, 2011). Considering the success potential of this policy Ejiro [4] opined that "in the long run sustainability of the policy will be a function of the endorsement of, and compliance by end-users". According to Central Bank of Nigeria (Central Bank of Nigeria, [5]) the policy is expected to reduce cost incurred in maintaining cash-based economy by 90% upon its full implementation.

Cashless economy is not the complete absence of cash, it is an economic setting in which goods and services are bought and paid for through electronic media. According to Woodford [3], Cashless economy is defined as one in which there are assumed to be no transactions frictions that can be reduced through the use of money balances, and that accordingly provide a reason for holding such balances even when they earn rate of return. In a cashless economy, how much cash in your wallet is practically irrelevant. You can pay for your purchases by any one of a plethora of credit cards or bank transfer Roth, [6], (2004) observed that developed countries of the world, to a large extent, are moving away from paper payment instruments toward electronic ones, especially payment cards. Some aspects of the functioning of the cashless economy are enhanced by e-finance, e-money, e-brokering and e-exchanges. These all refer to how transactions and payments are effected in a cashless economy Moses-Ashike, [7]. Marco and Bandiera [8] argue that increased usage of cashless banking instruments strengthens monetary policy effectiveness and that the current level of e-money usage does not pose a threat to the stability of the financial system. However, it does conclude that central banks can lose control over monetary policy if the government does not run a responsible fiscal policy.

Echekoba and Ezu [9], in a research carried out 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 automated teller machine (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.

However, Akhalumeh and Ohioka [10] observed some challenges with the introduction of cashless policy. Their findings show that 34.0% of the respondents cited problem of internet fraud, 15.5% cited problem of limited POS/ATM, 19.6% cited problem of illiteracy and 30.9% stayed neutral - the respondent not been sure of problem been expected or experienced. While in some quarters there was fear of unemployment, some believe it will create more jobs especially when companies manufacturing POS machine are cited in Nigeria. More so, data sourced from Central Bank of Nigeria portal shows that Lagos state, with a population of 17 million people, only has sixty one Point Of Sales, twenty bank branches and twenty four ATMs per 100,000 people which are far less to satisfy the needs of the population. These data verify the claim of Echekoba and Ezu [9] on the problem of cash based economy and cashless policy in Nigeria. For effective cashless implementation in Nigeria availability of sufficient and well-functioning infrastructure (notably electricity), harmonization of fiscal and monetary policy, regular assessment of the performance of cashless banking channels, consideration of the present state and structure of the economy, redesign of monetary policy framework and greater efforts towards economic growth whilst managing inflation should be considered (Odior and Banuso, 2012).

2.2 The Mechanics of the Cashless Policy in Nigeria

The cashless initiative is an alternative to cash transactions through electronic means using information and communications technology (ICT). Ndifon and Okpa [11] maintain that the future of all business, particularly those in the service industry lies in information technology. This technology as far as cashless policy is concerned is not only computer. Information technology for banks takes different forms; computerization of customers' accounts and account information storage and retrieval; deposit and withdrawal through Automated Teller Machines (ATMs); and networking to facilitate access to accounts from any branch of the bank, bio-metrics, use of mobile phones to

consummate transactions, internet, and websites. It also involves the use of credit cards, debit cards, mobile pay and many other forms of payment, but always only in digital ways, as paper currency does not come into play.

Babalola [12] identified seven different electronic payment channels in Nigeria, Automated Teller Machines (ATM), points of sales terminals, mobile voice, web, inter-bank branch and kiosks. Ogbuji et al. [13] noted that ATM allows a bank customer to conduct his/her banking transactions from almost every other ATM machine in the world. In this type of economy, the amount of cash in one's wallet is not relevant. One can pay for purchases by any one of the forms of transactions in cashless economy which includes the use of credit cards or bank transfer. Cashless economy is enhanced by e-finance, e-money, e-brokering and e-exchanges Moses-Ashike, [7]. Central Bank of Nigeria introduced Point of sale and gave the guidelines in 2011 with maximum service commission of 1.25% or a maximum of NGN2000 and limiting the role of connecting and maintaining POS devices only to licensed Payment Terminal Service Providers (PTSPs). These POS terminals serve like the Automatic Teller Machines (ATM) across commercial points in the country. At the completion of a transaction and the value ascertained, the amount is entered into a POS terminal into which the electronic card has been slotted. The cash equivalent of the amount will be automatically transferred from the payer's account into the account of the payee's account. In Nigeria today, private enterprise, religious bodies, educational institutions and other service providers such as hotels, transport firms etc. have embraced the POS option in their transactions. Users are issued with a card (the electronic purse). The electronic purse is topped up using revaluation terminals. There are different types of terminals: coin & note, credit card and payroll deduction terminals. The cards are simply inserted into the revaluation terminal and certain programmed instructions are followed, and money is added onto the electronic purse. This can then be used to pay for goods/services by inserting them into the POS terminals. When the card is inserted into the POS, and the transaction amount entered, the reader reads the amount and is quickly deducted from the e-purse (the card) (Akhalumeh and Ohiokha, [10]).It can be used to pay for school fees, shopping bills, utility bills and others bills.

The aspect of cashless policy streamlining the permitted limits of cash transactions for

individuals and institutions beyond which charges apply cover all accounts types especially savings and current with exception of government revenue generation; primary mortgage institutions, microfinance banks and embassies' accounts. The policy clearly states that the cash withdrawal and deposit limit for individuals is N500, 000 and N3,000,000 for corporations, although the policy does not prohibit withdrawals above the stipulated amounts, but such transactions will be subjected to cash handling charges. The interesting thing about the way banks are implementing this policy is that at the end of each transaction, they send alert to the customer indicating the amount withdrawn and the balance. Banks have equally made available different types of cards to enhance the electronic transactions which consist of Verve, Master, Platinum cards; some customized means of making payments include: pay pal and payoneer and so many others. It is good to mention that these e- transactions are not without charge. This policy facilitates fund transfer, thereby reducing time wasted in bank(s).

The transactional ease and other advantages of cashless economy may explain its growing popularity. For instance, Wizzit, a fast growing mobile banking company in South Africa has over three hundred thousand customers across South Africa. Likewise, M-PESA was introduced in Kenya as a small value electronic system that is accessible from ordinary mobile phones. It has experienced exceptional growth since its introduction by mobile phone operator (Safaricom) in Kenya in March, 2007 and has already been adopted by nine million customers, which is about 40% of Kenya's adult population. The success of M-PESA has been attributed to its flexibility enabling users to carryout financial transactions across long distances with their cell phones, thereby reducing their travelling costs, eliminating the risks of carrying cash and also avoiding most banking charges (Akintaro, [14]). In Sweden, it is almost impossible to find a shop that does not accept electronic payment cards, and most locals almost never carry any cash on them.

2.3 Forms of Electronic Banking

They are various forms of electronic banking which include:

Mobile banking: This is a form of E-Banking that involves using mobile phones to carry out banking transactions. This is a system that offers

information to customers and other bank services. Some of the services which are provided through mobile banking include account balance inquiry, payment of bills, short message service (SMS). It enables transactions to be done anywhere in the world and at the customer's convenience. This banking is also called 'motion banking'. It allows the customer to form banking transactions at any time as long as a mobile phone is present Ayodele, [15].

Internet/ Online Banking: This is a form of E-Banking whereby the internet is used for dissemination of information and also allowing customers to perform banking transactions. Tools such as computers, laptops that have access to the internet are used for this process Ngango, Mbabazize, Shukla, [16]. The bank's website is used to advertise services. When conducting E-Banking, the instruction of customers is taken and then attended to via the same platform, The Internet. Through this product, customers are now able to enjoy 24/7 services from banks. Another advantage of the internet banking is it helps reduce the cost of operations for banks, unlike traditional banks. Just as internet banking agent banking is mainly driven by technology and transactions can be made via mobile phones, point of sales(POS) e.tc Achugamonu, Taiwo, Ikpefan, Olurinola & Emena, [17].

Automated teller machine (ATM): An ATM is an electronic device which can be used to carry out bank transactions. Some of the services offered by an ATM include withdrawal of funds, account balance inquiry, transfer of funds, and top-up on airtime for mobile phones etc. An ATM is operated with an electronic card. Each card has a Personal Information Number (PIN) which gives access to the account of the owner of the card. The first ATM that was offered to the public was in 1969 at the chemical bank in Rockville Center, New York. ATM'S were introduced into Nigeria in the year 1989. It was installed by national cash registers (NCR) for the society General Bank of Nigeria.

Point of sale (POS): This is a form of e-payment that handles balance inquiry, payment for goods and service, electronic fund transfer at a specific point of sale. The device allows customers to make payment for goods and services purchased without the physical use of cash. At POS terminals, when a customer slots in his card into the POS, he inputs his details and in the case of payment for goods or services, his account is

debited at that point resulting in a transfer of funds to the service provider's account.

Electronic cards: these are cards that contain integrated circuits which can process data and are used for conducting financial obligations. Electronic cards could be debit or credit cards. The difference between debit and credit cards is; debit cards are used for payment of purchases made and the money comes from the customer's account directly. On the other hand, payment for goods or service using the credit card is based on borrowing. The most preferred cards used by Nigerians are the master and visa cards.

2.4 Benefits of Cashless Economy

Echekoba and Ezu [9], in a research carried out in Nigeria, observed that 68.2% of the respondents complained about long queues in the bank, 28.9% complained of bad attitude of tellers (cashiers) while 2.89% complained of long distance of bank locations to their home or work places. Experts have pointed out specific areas in which the cashless economy will improve the quality of life. These include: Faster transactions – reducing queues at points of sales, increased sales, collection of payment is simplified – time spent on collecting, counting and sorting cash is eliminated. Furthermore, excessive of cash outside the formal economy, which is the hallmark of a cash based economy, may hinder the effort of monetary policy in managing inflation thus discouraging economic growth (Acha, 2008c;2009). Oyewole et al. (2013) assert that several studies revealed that e-payment system is increasingly gaining users' acceptance and there is gradual increase in the percentage of non-cash transactions in the last few years. The use of e-transaction gives more convenience and option of services to customers. Electronic payments will help businesspeople grow their customer base and resource pool, far beyond the limitations of their immediate geographic area. Using a payment card gives convenience and security than making cash withdrawal and moving to where to make purchase (Acha, 2008a). There is no room for quarrelsome attitude of cashiers in e-transactions. Ndifon and Okpa [11], opine that the aim of cashless policy is to eliminate the unhealthy consequences associated with the high usage of physical cash which consists of corruption, robbery, leakages and money laundering and other cash-related fraudulent activities. When there is accident as a result of fire or flooding, additional financial loss may be sustained due to over reliance and

holding of cash for transactions. Cashless economy improves tax collection system; reduces cash handling charges and affects economic development positively. Hence, Osazevbaru and Yomere [18], opine that the operation of the cash based system has been at a significant cost to the Nigerian economy.

According to Central Bank of Nigeria (2012), the estimate shows that cash distribution cost accounts 60% overheads in the banking industry while cash management operations require up to 80% of the industry's infrastructure base and staff strength. Furthermore, the direct cost of transporting, processing and storing (vault) huge volume of cash borne by the financial system was valued at N114.5 billion in 2009 and it was estimated to rise to N192 billion by the end of 2012. According to Cobb [19], "electronic payments can thus lower transaction costs stimulate higher consumption and GDP, increase government efficiency, boost financial intermediation and improve financial transparency". She further added that "Governments play a critically important role in creating an environment in which these benefits can be achieved in a way that is consistent with their own economic development plans". Some researchers maintain that cashless policy reduces transfer/processing fees, improves processing/ transaction time, offers multiple payment options and gives immediate notification on all transactions on customers' account (Ndifon and Okpa, [11]; Osazevbaru and Yomere, [18]).

Central Bank of Nigeria (2015) added that the policy is beneficial to the banks and merchants because it enhances large customer coverage, internationalization of products and services, promotion and branding, increases customer satisfaction and personalized relationship with customers, and eases documentation and transaction tracking. Cashless policy is also beneficial to government as it aids monetary authorities in monetary policy management by reducing stock of money outside the banking system. The consequential effect of this is that it improves monetary policy efficiency, helps control inflation and hence stabilizes the economy (Acha et al., 2016). In cashless economy, government is bound to experience increase and transparent tax collection, greater financial inclusion and increase economic development. Consumers will enjoy faster, easier payments, increase convenience / access (more payment options) and reduction in the risk of robbery. As a result of cashless economy, better

access to capital due to shorter payment processing times, increase efficiency of payment processes and accounting; reduction of leakages of revenue and more efficient treasury management will be to the credit of the corporations.

Banks will experience efficiency through electronic payment processing, reduction of cost of operations through reduced cost of cash handling and increased banking penetration which easier access to electronic payment platforms engender. Cashless economy was introduced because it is believed that it will be beneficial to all economic actors, cause improvement in the standard of living and contribute to increasing Gross Domestic Product of the Nation.

2.5 Problems of Cashless Economy

Due to the political, social and economic conditions of the country, this policy is not without its constraints. The change from cash based economy to cashless economy moved people away from their comfort zone. This discomfort and the lack of clarity and understanding, Central Bank of Nigeria (2015) said, had hampered the adoption and fueled conspiracy theories amongst stakeholders. Hence CBN maintains that lack of understanding of cash policy amongst the banked and unbanked, resistance due to prevailing cash culture, "Techno-phobia, illiteracy, entrenched poverty (can't spend what you don't have), infrastructure lag, distrust in banking system, lack of clarity in communicating content of policy and inadequate payment terminal service providers (PTSPs) capacity among others are challenges that hinder the effectiveness of cashless policy in the country. Akhalumeh and Ohiokha [10] observed some challenges with the introduction of cashless policy and their findings show that 34.0% of the respondents cited problem of internet fraud, 15.5% cited problem of limited POS/ATM, 19.6% cited problem of illiteracy and 30.9% stayed neutral. While in some quarters there was fear of unemployment, some believe it will create more jobs especially when companies manufacturing POS machine are sited in Nigeria.

Many people in the country lack banking culture as a result they save by crude and informal means, while some lack access to banking services; for such people, e- transaction is a mere story. For many Nigerians the skill and knowledge of information technology is still on

the low side thereby making the use of electronic payment options both scary and challenging with negative implications for the adoption of cashless policy (Acha, 2008b). Nigeria generally suffers from epileptic power supply and inadequacy of electronic-based infrastructures; e-payment cannot function without these. There are some parts of the country that have never enjoyed electricity, others experience frequent power interruptions. Cashless economy is electronic economy; most of the transactions are done electronically. As a result of poor or no power supply in the country, information technology cannot be available, this is a heavy obstacle to cashless economy. To compound this, Nigerians are used to cash transactions and they are finding it difficult to change to cashless economy.

Yaqub et al. [20] mention that "one of the problems of cashless policy is customers' resistance to change in technology due to lack of awareness on the benefits of new technologies, fear of risk, lack of trained personnel in key organizations, tendency to be content with the existing structures and resistance to the new payment mechanism." Nigeria as a developing country with a lot of rural areas where there is nothing like infrastructures or banks. Cashless policy cannot be successful if implemented only urban areas where banks and enabling infrastructures exist while excluding the greater part of the country in the rural areas. However, it will cost much to the country to build and establish all the infrastructures needed for this project.

2.6 Review of Empirical Literature

Stemper [21] stresses the positive dimension of ATMs based on freedom of transaction. Effective service delivery in ATM system guarantees quality excellence and superior performance and provides autonomy to the customers Lovelock, [22]. Yavas, Benkenstein and Stuhldreier (2014) in their study opined that customer focused ATM delivery system that fulfills their needs and maximize operational performance is an essential dimension for bank to achieve and sustain competitive advantage. Davies Moutinho and Curry [23] examine the factors that influence customers' satisfaction about ATM service quality. These factors include costs involved in the use of ATM, and efficient functioning of ATM. Joseph and Stone [24], through focus group study in the United States, found that easy access to location, user-friendly ATM and security, are important factors that influence

majority of bank customers' perception of ATM service quality.

In another study in Bangladesh, Shamsdouha, Chowdhury and Ahsan [25] found that 24 hours service, accuracy, and convenient locations are the main predictors of customer satisfaction. The study also indicates lack of privacy in executing the transaction, fear of safety and complexity of the machine as the major cause of concern for the customers. Moutinho (2012) examines the relationship between the dimension of usage rate and performance expectation with customers' prolonged satisfaction with ATM services. The results indicate that usage rate has a negative association with customers' perceived prolonged satisfaction whereas performance expectations are found to have positive and significant effects on customers' prolonged satisfaction. Joseph and Stone [24] conducted a research and find out that secure and convenient location, adequate number of ATM, user-friendly system and functionality of ATM play important role in customer satisfaction.

Dilijonas, Krikscuiunien, Sakalauskas and Simutis (2009) on the other hand mention that adequate numbers of ATMs, convenient and secure location, and user-friendly system, speed, minimum errors, high uptime, cash backup, cost and service coverage are essential service quality aspects of ATM service. Athanassopoulos, (2012) found strong empirical evidence of innovation, convenience, price, and service quality as vital dimensions to customers' satisfaction. An understanding of customers' expectations enables organizations to offer customer-focused services and reduce attrition of customers.

Okafor, Imhonopi and Urim [26] carried out a study on internet service utilization and the impact on research outputs and teaching. Where they carried out a survey and the result of the survey indicated that majority of their respondents were computer compliant/literate (94.4%), while the remaining (5.6%) were not computer literates. However it was based on self-assessment. If 94.4% of their study population are highly information and communication technology (ICT) compliant, it can therefore be inferred that the awareness of cashless policy, cyber security, interswitch problems and other related e-payment issues needs to be checked and resolved in other to strengthen the confidence of the public to patronize modern e-payment platforms.

Ejoh and Okpa [27] examined the cashless economic system so as to assess its feasibility and practicability in the Nigeria context Vis-à-Vis; timeless preparedness and adequacy against the backdrop of our level of development both technologically and educationally. The study used a sample size of 120 respondents. Results showed that majority of Nigerians are already aware of the policy and adequate payment facilities in the banking sector have been developed to enhance the policy in the economy. Moreover, Ejoh, Adebisi, and Okpa [28] carried out a study that examined the cashless economy in other to evaluate the relationship between ICT and implementation of cashless policy. They administered 120 questionnaires and tested the data using chi-square. The results showed that there exists a significant level of relationship between ICT and cashless policy implementation in the Electronic Banking and Cashless Policy in Nigeria

Latifat and Alhassan [29] embarked on a research to examine the pre-and post-implementation period of cashless policy tools in Nigeria. They focused the relationships between the cashless policy tools and currency outside deposit money banks (DMBs) in the Nigerian economy it was between 2009-2012. The data was regressed upon using the ordinary least square method to test the effects of this tool on the level of currency in circulation. Their findings show that not a single cashless policy tool has a significant relationship with currency in circulation outside banks mainly due to high collinearity between the tools of cashless policy.

Kehinde and Adelowo [30] carried out a study to assess the level of Nigerians preparedness for e-commerce and cashless policy using the level of Information Communication Technology (ICT) adoption, usage and infrastructure available covering a space of 13 years. The paper concluded that ICT policy needs to be fully implemented and private and public sectors collaborations or partnership should be supported to facilitate the e-commerce and cashless policy. Taiwo, Ayo, Afieroho and Agwu, [31] carried out a study to appraise the implementation of the cashless policy since its introduction into the Nigerian Financial system in 2012. Another objective of the study was also to access the persistent challenges facing its implementation. They issued 120 questionnaires to respondents in Zenith Bank, First Bank, and United Bank of Africa. The results were analyzed using the Statistical Package for Social Sciences

(SPSS) and one sample t-test. The results showed that the cashless policy will have the desired impact if a lot is done to ensure the implementation of an effective cashless policy system.

3. THEORETICAL FRAMEWORK

3.1 Technological Acceptance Model

This study is anchored on the technological acceptance model which was propounded by Fred Davis in 1993. The theory of technological acceptance explains how individuals accept new technology and it leads to growth in an economy. In essence, it shows how a user of a proposed technology welcomes and adapts to a new technology. He stated that two beliefs determine the complete acceptance of a technology [32,33]. These beliefs are perceived usefulness and perceived ease of use. Perceived Usefulness is a factor that affects users acceptance because it is based on how capable the new technology will help improve job performance [34,35,36]. The technology must be capable of producing an advantageous result and must also be able to generate a positive performance. As for perceived Ease of Use, Fred Davis defined it as how easy it is for users to make use of new technology. It means that the ability to employ the new technology should be effortless [37-39]. Prior to the implementation of the cashless policy, Nigeria was a huge cash-based economy. In order to increase the effect of the policy on citizens, the people have to believe that the policy will be easy to use and also result in positive performance thereby, leading to economic growth. E-Banking products must also be re-engineered to make electronic payment effortless which will stir the country toward a cashless economy [40-43].

Researchers have assessed various dimensions of POS and cashless policy in the economy using different methods of analysis ranging from simple survey, chi-square and experimental sampling; however, none of the researcher has adopted the regression analysis technique using econometric software to examine the impact of POS on cashless policy in the economy. therefore, the research work is anchored on those loopholes by adopting powerful econometric techniques like multiple co-integrating least squares, autoregressive distributed lag, residual graph, unit root and co-integration analysis to determine. The impact of POS on cashless policy in Nigeria.

4. MATERIALS AND METHODS

The experimental research design was used in this study based on the econometric tools to be employed. Five hundred (500) people were selected from the population sampling as the target population in Owerri. The sample study is taken from 30 POS centers operating in Owerri Municipal Council. The study utilized primary data on the variables under study for estimation; the data used for this study were gotten from primary sources; such place as various customers of 30 POS centers operating in Owerri environment. The study is structured to empirically examine the impact of POS on cashless policy in Nigeria; to this end, econometric tools such as co-integrated least square method, autoregressive lag, residual graph, co-integrations and unit root to analyze the primary data obtained.

4.1 Model Specification

The model is firstly specified in its functional form as follows:

$$CLP = F(SY, POSU, INTM) \quad (1)$$

The mathematical model specified or shows the exact relationship between the variables in the model; thus

$$CLP = \sigma_0 + \sigma_1 SY + \sigma_2 POSU + \sigma_3 INTM$$

The mathematical model is therefore transform to econometric model by including the error term to capture the omitted variables ought to be included in the model; thus

$$BP = \sigma_0 + \sigma_1 SY + \sigma_2 POSU + \sigma_3 INTM + \mu_T$$

Where SY is syntax error, POSU is consistent used of POS, INTM is intermediating effect, CLP is cashless Policy and μ_T is regarded as the disturbance term included to capture omitted variables.

4.2 Appriori Expectation

We expect the use of POS to be positive while syntax error and intermediating effect to be negative to cashless policy in Nigeria.

5. RESULTS AND DISCUSSION

The purpose of this section is to report, present, analyze and discuss the result of the model

estimation conducted. This section is further divided into analysis of data and discussion of findings. The figure below represents series of primary data obtained from the sample size of 500 population based on the questionnaire distributed; the responses obtained were structured accordingly; strongly agreed, agreed, strongly disagreed, disagreed and neutral. Strongly agreed represent the sample size of those who are 100% convince, agreed represent 50% conviction, strongly disagreed represent 100% not convince, disagreed represent 50% not convince and neutral represent those that are indifferent to the question asked; the responses according to its category were structured into raw data to enable the researcher regress the variables. Different weights were attach to the individual category and multiply by 100 to produce an acceptable raw form of data for econometric analysis, please find below the category of responses and weight on each category.

The Table 1 entailed that the responses obtained from each category of the sample size population were multiply by its weight to arrived at the overall raw data on each variables for econometric analysis; questionnaires were distributed to 500 people drawn from 30 POS centers operating in Owerri, only 450 copies were returned while 50 were not returned based on obvious reasons from the respondent. Please find below the raw data for econometric and empirical analysis based on the returned copies.

5.1 Empirical Data Analysis

In order to access the impact of POS on cashless policy in Nigeria, econometric tools were employ on the primary data such as co-integrated least squares, autoregressive distributed lag, residual graph, unit root and co-integration analysis.

5.2 Testing the Impact of POS on Cashless Policy

We employed the fully modified least squares method to determine the co-integration

impact of POS on cashless policy in Nigeria; below is the estimated output from the econometric software;

The result above shows that POS account for 64.1% impact on cashless policy operating effectively in the country while 37% is accounted by other factors most predominantly political and economic factors. The coefficient of POS revealed that increase and persistent use of POS will positively impact on cashless policy by 51.27%, syntax error will reduce the implementation of cashless policy by 35.49% while changes in intermediating effect is insignificant to cashless policy implementation in the country. The long run variance implies the consistent use of POS will sustain cashless policy at the long run.

5.3 Auto Regressive Distributed Lag

ARDL method was employed to examine the impact of POS on cashless policy in both lag 1 and lag 2 respectively; find below the result from the econometric view;

The result shows the impact of POS on cashless policy to be highly statistical significant while syntax error was significant at lag 1 with a reducing impact on lag 2. This implies that the constant use of POS will sustained cashless policy while syntax error and intermediating effect will have a reducing effect on the policy on the long run. The model is a good fit judged by the result of F-statistic and probability figure, test for autocorrelation using Durbin Watson statistics shows the absent of serial correction on the residuals.

5.4 Unit Root Test

The result from the unit root analysis, shows that the variables are stationary and are integrated to the order first differences, the study therefore reject the null hypothesis and conclude the residuals are co-integrated at the long run.

Table 1. Category of responses and weights

Category	Weight
Strongly Agreed	5
Agreed	4
Strongly Disagreed	3
Disagreed	2
Neutral	1

Table 2. Responses obtained from each category of the sample size population

CLP	POS	INTM	SY
87,500	107,500	102,000	53,500
20,000	32,000	72,000	48,000
615,000	312,000	21,000	612,000
106,000	9,400	8,000	8,000
17,000	5,100	500	2,500
45,000	54,000	52,500	102,500
32,000	312,000	42,800	42,800
381,000	66,000	603,000	42,000
8,000	17,400	13,000	7,000
2,300	400	1,800	2,000
52,500	101,500	53,500	10,000
3,000	41,600	38,800	14,000
702,000	34,500	61,200	42,000
14,000	14,000	13,000	214,000
1,600	700	2,400	20,500
32,500	60,000	52,500	85,000
52,000	108,500	804,000	34,000
72,000	24,900	32,100	612,000
7,000	12,800	13,000	8,000
3,000	1,000	1,800	200
76,500	78,000	70,000	7,000
30,000	82,800	34,800	28,000
68,700	22,800	56,100	48,000
3,000	94,000	16,000	16,000
2,200	1,200	500	4,500
60,000	70,000	85,000	85,000
28,000	28,000	34,800	34,000
60,000	25,800	49,500	612,000
16,000	402,000	13,000	8,000
2,500	200	1,000	2,000
100,000	33,500	37,500	40,000
32,000	38,800	42,000	48,000
36,000	23,400	621,000	615,000
14,000	41,000	16,000	94,000
1,500	4,000	3,000	4,600
102,500	105,000	40,000	102,000
28,000	109,200	48,000	72,000
42,000	21,000	615,000	21,000
13,000	8,000	94,000	8,000
1,000	8,000	46,000	500
75,000	35,000	102,000	53,500
312,000	29,600	32,000	38,800
564,000	24,300	42,000	612,000
13,000	41,400	14,000	13,000
1,200	5,700	500	24,000
3,500	35,000	62,500	85,000
20,000	34,800	43,600	34,000
735,000	621,000	39,000	612,000
24,000	114,000	16,000	8,000
800	7,500	5,000	200

Source: Field work computations

Table 3. Fully Modified Least Squares (FMOLS)

Dependent Variable: CLP				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
POS	0.512781	0.192923	2.657955	0.0108
SY	-0.354986	0.113975	3.114583	0.0032
INTM	-0.001475	0.118026	-0.012494	0.9901
C	21207.79	26831.18	0.790416	0.4334
R-squared	0.782999	Mean dependent var		94516.33
Adjusted R-squared	0.641199	S.D. dependent var		183336.5
S.E. of regression	149933.1	Sum squared resid		1.01E+12
Long-run variance	2.06E+10			

Source: E-views

Table 4. ARDL

Dependent Variable: CLP				
Method: ARDL				
Variable	Coefficient	Std. Error	t-Statistic	Prob.*
CLP(-1)	0.079751	0.143857	0.554377	0.5822
POS	0.621643	0.211487	2.939388	0.0053
SY	0.338372	0.124044	2.727851	0.0092
SY(-1)	-0.162092	0.138343	-1.171667	0.2478
INTM	0.024162	0.125272	0.192876	0.8480
C	23584.58	32185.05	0.732781	0.4677
R-squared	0.794948	Mean dependent var		94516.33
Adjusted R-squared	0.624593	S.D. dependent var		183336.5
S.E. of regression	150671.8	Akaike info criterion		26.79787
Sum squared resid	9.76E+11	Schwarz criterion		27.02952
Log likelihood	-650.5479	Hannan-Quinn criter.		26.88576
F-statistic	5.613643	Durbin-Watson stat		2.093071
Prob(F-statistic)	0.000456			

Source: E-views

5.5 Granger Causality test

We employ the Granger Causality techniques to ascertain the cause-effect of POS on cashless policy in Nigeria; below is the econometric output;

The result of Granger causality test revealed that POS granger cause cashless policy in Nigeria; this implies that effective used of POS impact positively on cashless policy in Nigeria. Syntax error has a reducing effect on wide acceptance of cashless policy.

5.6 Hypotheses Testing

H₀₁: Syntax error in POS does not significantly affect cashless policy in Nigeria

The result of the co-integrating least square revealed inverse and significant relationship to cashless policy, this result is further collaborated by auto regressive distributed lag, therefore, we reject the hypothesis and conclude that syntax

error significantly reduce the impact of POS on cashless policy.

H₀₂: The consistent use of POS does not stimulate cashless policy in the country.

The result of the co-integrating least square revealed positive and significant relationship to cashless policy, this result is further collaborated by auto regressive distributed lag, therefore, we reject the hypothesis and conclude that POS is positively and significantly impacting on cashless policy in the country.

H₀₃: Intermediating effect of POS does not significantly relate to cashless policy.

The result of the co-integrating least square revealed positive and insignificant relationship to cashless policy, this result is further collaborated by auto regressive distributed lag, therefore, we accept the hypothesis and conclude that intermediating effect of POS is insignificantly impacting on cashless policy in the country.

Table 5. ADF stationarity test

Variables	Outcomes
CLP	
T-statistics	-8.129041
5% level	-2.925169
10% level	-2.600658
Prob.	0.0000
Order of integration	1(1) or first diff.
POSU	
T-statistics	-7.868420
5% level	-2.928142
10% level	-2.602225
Prob.	0.0000
Order of integration	1(1) or first diff.
SY	
T-statistics	-10.74730
5% Level	-3.584743
10% level	-2.602225
Prob	0.0000
Order of integration	1(1)
INTM	
T-statistics	-6.826438
5% Level	-2.928142
10% level	-2.602225
Prob	0.0000
Order of integration	1(1)

Source: Extract from E-views

Table 6. Pairwise granger causality tests

Null Hypothesis:	Obs	F-Statistic	Prob.
INTM does not Granger Cause CLP	48	0.35159	0.7056
CLP does not Granger Cause INTM		0.97037	0.3871
POS does not Granger Cause CLP	48	0.07292	0.0298
CLP does not Granger Cause POS		0.81302	0.4502
SY does not Granger Cause CLP	48	0.75984	0.4739
CLP does not Granger Cause SY		0.19160	0.8263
POS does not Granger Cause INTM	48	0.33377	0.7181
INTM does not Granger Cause POS		0.77906	0.4652
SY does not Granger Cause INTM	48	0.71483	0.4950
INTM does not Granger Cause SY		0.76072	0.4735
SY does not Granger Cause POS	48	0.79619	0.4576
POS does not Granger Cause SY		0.09053	0.9136

Source:E-Views

6. SUMMARY, CONCLUSION AND RECOMMENDATIONS

The broad objective of the study is the impact of POS on cashless policy in Nigeria. In order to achieve these objectives, the research study was structured into five different chapters. Chapter one introduces to us the background, statement of problem, objectives (both broad and specific), research questions, hypotheses,

significant, scope and limitation, organization and definition of terms. Chapter two reviewed conceptual framework, theoretical, empirical from related literatures and gaps were indentified. Chapter three examine the different methodology used in analysis, chapter four vividly emphasizes on result and discussion, while five finally summarizes, recommends and concludes the research study.

6.1 Conclusion

The research work is centered on the impact of POS on cashless policy in Nigeria, from the result of co-integrating least squares and autoregressive distributed lag, POS is highly statistically significant and impacting positively to cashless policy in the country, syntax error which are errors associated with the use of POS was also significant with a reducing impact on cashless policy while intermediating effect has no significant impact on the effective implementation of the policy. We therefore conclude vividly that POS has a stronger and positive impact on cashless policy in the country.

6.2 Recommendations

Based on the findings, we give out the following recommendations for future assessment;

1. The creation of awareness on the use of POS will sustained the effective implementation of cashless policy in the country.
2. POS charges should be cut down in order to attract increase patronage on using POS as the main channel of sustaining cashless policy in the county.
3. Debit fund due to syntax error should be reverse immediately without delay; this will encourage users to increase patronage.
4. The political and economic factors affecting cashless policy should be curtailed immediately without delay; to allow cashless policy operate in full.
5. The charges on cash withdrawal limit should be increase and enforce by the highest monetary authority base on the volume of cash withdrawals per transactions, this will discourage to a greater extend the level of cash base transactions within the political elites.

CONSENT

As per international standard or university standard, participant's written consent has been collected and preserved by the author(s).

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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