



## Assessment of cashless policy implementation in Nigeria: Prospects and challenges

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### Abstract

The Central Bank of Nigeria (CBN) began Nigeria's gradual shift from a predominantly cash-based economy to a cashless society in 2011. This was done in order to reposition the nation's payments system for efficient service delivery, expanded financial inclusion, and sustainable economic development. This study looked at the benefits and drawbacks of a cashless policy adoption on the Nigerian economy using archival and documentary evidence, as well as a review of significant publications from the CBN and other financial regulatory authorities. It found that numerous stakeholders are reportedly feeling the advantages of a cashless policy, which include improved convenience, quicker access to capital, greater financial inclusion, a decreased risk of cash-related crimes, lower cash handling costs, less revenue leakage, a wider selection of convenient service options, and better monetary policy management. The lack of suitable electricity and telecommunications infrastructure, an insufficient regulatory framework, security issues, and societal factors continue to be major obstacles to the policy's full implementation. Given that there are still some obstacles standing in the way of fully implementing a cashless economy in Nigeria, the authors recommend that supporting infrastructures be improved and expanded as well as increased education for the vast majority of the population, who are illiterate, poor, and unbanked, to encourage greater participation in the program.

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### 1. Introduction

The rising trend toward digital payments is hotly discussed by governments, central banks, and financial experts across the world. Indeed, the proliferation of new electronic and mobile instruments has paved the way for a major revolution in the payments scene. Nigeria has been steadily moving away from a cash-only economy toward a cashless financial system following the introduction of the cashless policy by the country's apex financial institution, the Central Bank of Nigeria (CBN) in 2011 in a bid to lessen some of the drawbacks associated with heavy usage of physical cash in the economy. The quest for a reliable and efficient financial payment system began since 1894 when the British Bank for West Africa (BBWA) successfully administered and circulated the British silver coinage as a means of paying trade debts in the British West Africa colonies. However, the roles of the coins as unit of account, medium of exchange, and store of value have diminished in most economies of the world following the advent and adoption of the cashless payment system.

A cashless economy, as defined by Taiwo, Ayo, Afieroho & Agwu (2016) <sup>[30]</sup> and Daniel, Swartz & Fermar (2004) <sup>[14]</sup>, is one where transactions are carried out electronically rather than with actual cash. It consists of the infrastructure involving institutions, instrument, rules, procedures, standards and technical means established to provide exchange of monetary value

between parties discharging mutual obligations (Igbekele & Ugo, 2022; Summers, 2012) <sup>[17, 29]</sup>.

The phrase "cashless economy" does not necessarily portray a system in which there is no physical cash; rather, it describes one in which there are very few cash transactions and greater adoption of credit/debit cards and data payments for goods and services (Omotunde & John-Dewole, 2013; Akhalume & Ohiokha, 2012; Adewale, 2012) <sup>[27, 8, 3]</sup>. The use of cash has associated negative effects in the economy, such as the high costs of managing large amounts of cash, promotion of robberies, the loss of physical cash during fire and other disasters, the cost of bank subsidies to the small minority that use a lot of cash, growth in the amount of money used outside the formal economy, and an increase in other cash-related financial crimes such as money laundering, corruption, and leakages among others. These financial vices hamper the effectiveness of monetary policy tools in controlling the economy towards targeted goals.

Nigeria's cashless policy aims to promote economic growth, lower banking service costs, advance the modernization and development of the nation's payment infrastructure, offer more practical and accessible transaction options to increase financial inclusion for the unbanked public, and enhance the efficiency of monetary policy in fostering economic growth (Agu & Agu, 2020) <sup>[5]</sup>. According to Taiwo, Ayo, Afieroho, and Agwu (2016) <sup>[30]</sup>, cashless policy would eliminate the current barriers keeping the majority of Nigerians out of the financial system, bring low-cost, secure, and convenient banking practices to both urban and rural locations nationwide and generally lessen the negative effects of a cash-based economy.

Pilot programs for the cashless policy were implemented in Lagos on January 1, 2012, and a nationwide rollout was replaced with staggered deployment in Port Harcourt, Kano, Aba, and the Federal Capital Territory (CBN 2012). Despite breakthroughs in product and process mechanisms, the "cash and carry" dilemma has persisted, with volumes of cash in transit increasing unabated (Adeyeye & Ajinaja, 2014) <sup>[3]</sup>. The unending high incidence of cash transactions for the vast majority of Nigerians are due to the difficulties in implementing a cashless financial system of payments, including poor network connections when using Point-of-Sale (POS) terminals, bank transfers that frequently result in customers' accounts being wrongly debited more than once, high transaction fees charged by banks, inadequate security, and technical difficulties. As a result, the transition to a cashless economy raises a lot of concerns because it seems like there isn't enough evidence to support its implementation in Nigeria. According to the Central Bank of Nigeria (2011), the cashless policy will have an impact on the nation's vast informal sector, which is fueled by a large number of small-scale farmers, traders, artisans, and other small to medium-sized businesses. Aside from the physical and social infrastructure challenges that will drive the process, Ejiro (2012) <sup>[16]</sup>, notes that its sustainability will be a function of societal acceptability and compliance with the policy. Besides, the full benefit of a cashless economy may never be realized unless society understands the pros and cons of electronic money. This study is, therefore, aimed at highlighting the potential benefits and drawbacks of a cashless society for the Nigerian payment system in order to increase understanding of the concept and encourage a change in attitude of important stakeholders.

## 2. Literature Review

### 2.1 Concept of cashless policy

Literature on the cashless policy has gained traction over the past decade due to observed significance of the program. The cashless policy, besides offering convenience, safety, increased transparency, accountability and financial inclusion can also assist economies to mop up cash in circulation into the banking system thereby enlarging banks' capabilities to provide discounted investments funds for customers. The Central Bank of Nigeria (CBN) introduced the cashless policy in April 2011 beginning with a pilot programme in Lagos on January 1, 2012 and continuing with a phased implementation in Port Harcourt, Kano, Aba and the Federal Capital Territory (CBN 2012) with the aim of promoting the use of electronic payment channels across the country.

An economy is fully cashless when all means of payments are transacted through electronic channels rather than with physical cash. Such electronic mode of transactions could be cheques, wire transfers, debit and credit cards, online transactions and mobile banking. As the CBN (2017) <sup>[13]</sup> notes, a payments system is a critical element of the modern market economy, being the conduit through which financial resources are transmitted from one sector of the economy to the other. Furthermore, an effective payments system promotes financial stability, regulates a nation's monetary policy, and improves the overall safety of an economy (Ngango, Mbabazize, and Shukla, 2015; CBN, 2013) <sup>[12]</sup>. In recognition of this relevance, the CBN has over the years, collaborated with the nation's Bankers Committee to modernize the payments system beginning with its first major initiative of automating the cheque clearing system to become a veritable platform for the development of electronic payment channels. Before now, operations involving processing of cheques and calculation of net settlements for banks were done manually. This process was cumbersome, time-consuming and costly.

According to the requirements of the cashless policy, cash-based transactions that exceed specific predetermined daily withdrawal limitations will be subject to a cash handling fee. Such limitations specified a cumulative daily cash withdrawal cap of N500,000 and N3,000,000 for accounts held by individuals and businesses respectively. Regardless of the method of payment utilized (such as over the counter (OTC), automated teller machine (ATM), third party cheque cashed over the counter, cash in transit (CIT), etc.), the limit applies insofar as it involves cash. Accordingly, if a person withdraws N420,000 over the counter and N280,000 from an ATM on the same day, the total amount withdrawn by the client will equal N700,000, and the service fee will be applied to N200,000 being the amount exceeding the withdrawal cap. Although the policy does not specifically forbid withdrawals in excess of the specified amounts, it does levy a cash handling fee for such transactions on all accounts save for government income producing accounts, principal mortgage institutions, microfinance banks, and embassies. This new policy aims at encouraging more electronic-based means of settling economic and financial transactions thereby minimizing the amount of physical cash circulating in the economy.

Information and communication technology (ICT) and business model innovations have a substantial impact on the efficiency and security of cashless payment systems. The use of mobile devices and other forms of technology has aided in the implementation of cashless policies and the growth of Nigeria's cashless economy (Akara & Asekome, 2018) <sup>[7]</sup>. Data generated and used by organizations, as well as a broad range of more convergent and integrated technology that processes such data, are all part of ICT. It refers to the use of technical processes in data communication (Kosoko, 2011) <sup>[20]</sup> and includes computerization of customer accounts to allow for the storage and retrieval of account information, networking to allow access to accounts from any branch of the bank, and the ability to deposit and withdraw through ATMs. It also makes it easier to use the internet and websites to bundle a variety of services that go beyond typical financial services, which is becoming more popular among banks. It also encourages banks to use the internet and websites to bundle a number of services that go beyond traditional financial services, which is becoming increasingly popular. There is little doubt that ICT can help banks cut transaction costs, resulting in lower client service pricing.

## 2.2 E-payments Instruments in Nigeria

### 2.2.1 Automatic Teller Machines (ATMs)

ATMs are computer-controlled devices that enable customers of financial institutions to make financial transactions using a Personal Identification Number (PIN) without the need for a human cashier, clerk, or bank teller. The ATM can be used for a variety of purposes, including cash deposits and withdrawals, funds transfers, balance inquiries, and so on. Many Nigerian banks have installed ATMs since the United Bank for Africa (UBA) and the First Bank of Nigeria (FBN) adopted them in 2003. The primary benefit of an ATM is the quick and easy access to one's money. However, despite its popularity, ATMs have failed to reduce the volume of cash in the economy because most Nigerians use ATMs only for cash withdrawals and balance inquiries due to ignorance and a lack of merchants.

### 2.2.2 Point of Sale (PoS) Terminals

This form of electronic payment handles cheque validation, credit authorization, cash deposit and withdrawal, and cash payment. It improves electronic funds transmission at the point of sale as customers' accounts are immediately debited with the cost of a transaction made in a store like a gas station or supermarket. Standard components of a modern PoS system consists of a debit/credit card reader, receipt printer, integrated credit card processing system, a signature capture device, and a customer pin-pad all built in one. It also includes a customer display and a cash drawer. Customers can use this device to pay for goods and services without needing cash because the purchase price is deducted from the buyer's card and credited to the seller's account.

### 2.2.3 E-banking

Internet banking is the delivery of traditional banking services via the Internet. It has provided banks and the banking public with an excellent research tool. Online banking is available on the secure websites of financial institutions and allows for bill payment and other transactions. Customers who use this channel must have an internet connection, confirmed accounts with selected institutions, and user IDs and passwords. Customers using

this platform must also authorize permission for individual transactions they initiate. Unfortunately, the saving populace's understanding of the benefits of this product is still quite low, therefore there is much room for development if cashless banking is to be as effective as envisaged.

### 2.2.4. Mobile Banking

This service gives bank customers mobile access to services such as balance inquiries, transaction inquiries, account verification, bill payments, electronic currency transfers, account updates, and so on using their mobile phones (Akara & Asekome, 2018; Acha, Kanu & Agu, 2017; Adu, 2016; Ajayi, 2014; Ochei, 2013; Oyetade & Ofoelue, 2013) <sup>[7, 1, 4, 6, 28]</sup>. It makes use of card infrastructure to transmit payment instructions, as well as secure SMS messaging to confirm receipt to the recipient. Mobile payments have a lot of potential in Nigeria because of the inexpensive infrastructure needs and quickly expanding mobile phone usage.

### 2.2.5 E-card System

This is a one-of-a-kind payment system that uses smart cards such as credit cards, debit cards, and even ATM cards with embedded integrated circuits to settle financial commitments. These cards are specially designed to securely store and manage data and various applications on a single card. While ATM cards require ATMs and encourage more cash withdrawals (exacerbating the problem), credit cards, debit cards, and e-wallets (such as Visa, InterSwitch, and MasterCard) do not and can be used to make internet purchases, making cashless shopping much more convenient. As a result, mass adoption of credit cards, e-wallets, and debit cards should be prioritized in order to convert the country to a cashless economy (Oyetade & Ofoelue, 2013; Ajayi, 2014; Adu, 2016 and Akara & Asekome, 2018) <sup>[7, 4, 6, 28]</sup>.

### 2.2.6 Cheque

A cheque is a document that allows money to be withdrawn from a bank account. The drawer is the person who writes the cheque and has a current account with the bank, whereas the drawee is the one who gets the monies. A cheque allows financial transactions to be exchanged without the need of physical cash.

## 2.3 Benefits of the Cashless Policy

For decades, people have used cash to exchange goods and services in order to overcome the terrible inefficiencies of the barter system. Nonetheless, cash is being phased out in favor of more effective and efficient alternative payment channels. A cashless environment, fuelled mostly by developments in information and communications technology, is fast expanding on a global scale and is expected to provide numerous benefits to numerous stakeholders. The benefits of a cashless economy as outlined by Akhalumeh and Ohiokha (2012) <sup>[8]</sup>, Okey (2012) <sup>[26]</sup>, and Obina (2012) <sup>[23]</sup> are summarized here.

**Stimulates economic growth and development:** The government stands to benefit greatly from the cashless initiative. The government, as the scheme's creator and principal implementer, stands to benefit from the program through higher revenue from enhanced tax collections and financial inclusion, revenue gap closure, and increased economic development. An efficient payment system that is less reliant on cash contributes significantly to national

wealth and progress. According to research, when the efficiency of the national payment system increased by 10%, the gross domestic product (GDP) increased by 1% (Odior and Banuso, 2012).

**Revenue growth for corporations:** Financial institutions, on the other hand, make a fortune from the various fees levied on clients who use a range of e-payments instruments like as POS systems, mobile payments, direct debits, internet banking, and electronic fund transfers, among others. The strategy can assist banks deepen bank deposits by minimizing leakages and cash handling expenses, boosting money available for lending and allowing banks to provide businesses with faster access to funds.

**Improved customer retention:** Many businesses are beginning to recognize the impact of customer experience on organizational loyalty and are painstakingly recreating and implementing policies, processes, and programs that will provide customers with better experiences. Some reengineering initiatives aim to streamline operations in order to reduce delays, interruptions, costs, and so on, while also increasing customer satisfaction and the bottom line

**Minimizes loss and/damage of raw cash:** The chance of losing money due to burglary, theft, fire, flood, or normal wear and tear is one of the arguments against utilizing cash. A cashless society would require little (if any) cash. As a result, it can reduce the hazards associated with the use of actual money. In addition, the policy will encourage openness, fiscal restraint, and efficiency. Moving away from cash-based systems can help cut operational costs associated with printing, minting, shipping, and keeping notes and coins.

**Decline in cost of doing business:** The use of e-cash to settle financial transactions can help organisations reduce operating costs. This is because less money will be spent on mailing and paper printing. Furthermore, electronic payment provides customers with convenience and can assist businesses in increasing customer retention. A customer is more likely to make a repeat purchase from an e-commerce website when he or she already has an account and their information is preserved. Furthermore, Marco and Bandiera (2004) <sup>[21]</sup> confirm that increased use of cashless financial instruments improves the efficacy of monetary policy. In fact, they argue that the current level of electronic cash usage poses no threat to the financial system's stability, but they have cautioned that central banks' monopoly over monetary policy may be jeopardized if the government adopts a careless fiscal policy.

**Checkmates inflation and Money laundering:** Aside from the cost savings associated with a cash-controlled economy, implementing a cashless policy eliminates the threat of counterfeit money. Furthermore, it has the potential to thwart the activities of money launderers, who thrive in an economy dominated by cash. Cashless payment systems help to close gaps in the financial system that allow money to flow outside of it. By ensuring that all currency is drawn into and managed by banks, the efficiency of monetary policy in managing inflation and attaining other macroeconomic goals may be guaranteed.

## 2.4 Challenges of Cashless Policy in Nigeria

The transition to an e-payments system, also known as the

"cashless economy," is not without challenges. In Nigeria, the multidimensional challenge which focuses primarily on issues of security, privacy, crime, and computerization, appears to be driven primarily by the chronic albatross of inadequate physical and social infrastructure. In accordance with the findings of Ejiofor and Rasaki (2012) <sup>[15]</sup>, an overview of the barriers to cashless policy implementation is offered here.

**Limitations in attitude and education:** People are generally opposed to change and favor established institutions. Most people's fear of taking risks and reluctance to change is motivated by a misunderstanding of the underlying benefits of the proposed change. Nigeria is mostly a cash-based economy, with the majority of people preferring cash-based transactions. Unfortunately, the low literacy rate in the country discourages the vast majority of Nigerians from accepting and using e-payments services. The goal of the cashless policy can only be fully realized when a vast number of people are educated and have basic ICT skills.

**Infrastructure inadequacy and degradation:** The cashless policy is impeded by a lack of financial infrastructure, as available e-payment platforms are currently insufficient to meet the program's demands. In most sections of the country, telecommunications facilities are inadequate and dilapidated. Electricity, another critical component of an efficient e-payment system, is unevenly distributed in both urban and rural locations. This dreadful tendency, if not addressed, will have an impact on the success of cashless policies. As a result, significant investments from both operators and regulators are required to genuinely shape the policy.

**Security risk:** Given that information and communication technology (ICT) is a critical driver of an e-payments system, the policy is vulnerable to fraudulent practices in the event of a security breach. Hacking, identity theft, improper debits of consumers' accounts, and arbitrary and unjustified bank charges are all likely to endanger Nigeria's cash-free policy implementation.

**Expensive and inconsistent Internet access:** When compared to advanced economies, the cost of Internet connectivity per capita income in Nigeria is higher. Despite the low level of internet penetration and high e-payment service charges, which can increase resistance from the banking public, the quality of the internet in Nigeria is appalling in comparison to developed countries in Europe and America. Furthermore, high start-up costs, as well as escalating computer, telecommunication, and licensing requirements continue to be significant impediments to the development of Nigeria's e-payments and e-commerce landscape.

**Legal and other considerations:** According to Tunde (2012), there are concerns that the cashless policy will allow banks to mobilize vast money with minimal efforts, generate substantial revenue through transaction costs, but reduce their retail distribution outlets, so contributing less to employment creation. Furthermore, the country still lacks an appropriate legal and regulatory framework for e-payments as existing legislation does not effectively address electronic contracts and signatures. Furthermore, the political and economic volatility in neighboring countries predictably impedes



smooth business transactions.

## 2.5 Review of Empirical Works

Omotunde, Sunday and John (2013) <sup>[27]</sup> administered copies of structured questionnaire to 500 civil servants, students and merchants who were selected using accidental sampling method. Result of analysis indicated that cashless policy increased employment and reduced cash-induced robbery and corruption, thus, mitigating risk of carrying cash around and attracting more foreign investments to the country.

James (2013) <sup>[19]</sup> explored the factors that drive mobile banking acceptance in Nigeria anchoring his study on the Rogers' Diffusion of Innovation theory and using questionnaire and multiple regressions to collect and analyze data respectively. He found that age and educational background greatly influenced adoption of mobile banking in Nigeria and advised relevant stakeholders to show interest in the complexities, compatibility and associated benefits of mobile banking in order to increase its level of usage among the banked and unbanked Nigerians.

Ajayi (2014) <sup>[6]</sup> examined the effect of cashless monetary policy on Nigerian banking industry using 370 staff of Guaranty Trust Bank in Ekiti State, Nigeria. Based on analysis of data using chi-square, it was found, among other benefits, that cashless policy facilitated the ease of operations and also reduced queue and congestion in the banking halls. However, inadequate technological infrastructures, high rate of cybercrime and illiteracy were found to limit the full implementation and maximization of benefits of the policy during the period of the study.

Alagh and Ene (2014) <sup>[9]</sup> employed the ordinary least square (OLS), automated teller machine (ATM), point of sale (POS), and web-based transaction (WBT) as measures of cashless banking to examine the impact of cashless banking on banks' aggregate return on equity (ROE). Study findings show that ATM and POS positively correlated with ROE, while WBT related negatively with ROE due to high rates of bank charges on online deposits which deterred most customers from the product. Consequently, non-usage of the WBT for online deposits impacted negatively on profitability of Nigerian banks.

Ikpefan, Akpan, Godswill, Grace & Chisom (2018) sought to determine the impact of electronic banking tools on cashless policy in Nigeria for a period spanning 2006-2015 using ordinary least square tool to analyze data collected from the CBN Annual Report and the website of Nigerian Interbank Settlement System (NIBSS). They discovered that there was no significant impact of e-banking instruments on the currency in circulation and recommended, among other things that transaction charges be drastically lowered to encourage greater adoption of e-payment platforms.

Matthew & Mike (2016) assessed the performance of Nigerian banks to ascertain if there were significant variances in their performance before and after the adoption of the cashless policy. Secondary data from published annual reports of sampled banks were analyzed using t-test analytical technique. The study found that cashless policy, although not majorly focused on enhancing bank profitability, is highly beneficial because it increased convenience; reduced cost of handling cash, revenue leakages, risk of cash related crimes among others. However, the policy faced challenges of infrastructural deficits, inconsistent power supply, incidence of e-fraud, low level of literacy among others and required Nigeria's central

government and the CBN to synchronize efforts in guaranteeing cyber-safety.

## 3. Methodology

This study was anchored on archival and documentary evidence, as well as an examination of key publications from the Central Bank of Nigeria and other financial regulatory bodies.

## 4. Conclusion and Recommendations for Policy Makers

This study looked into the implementation of cashless policies in Nigeria, with focus on the obstacles and opportunities for the country's economic development. Payment methods in Nigeria have greatly improved in recent years; but certain transactions remain cash-based. The barriers to a smooth cashless system in Nigeria revolve around security, infrastructure, regulatory, and socio-cultural issues. Although Nigeria has the basic infrastructure to implement the policy, the level of awareness required to entice the vast majority of the population who do not have access to financial services remains low. Most Nigerians are unaware of the benefits of e-payments, which explain the policy's resistance and slow adoption.

As a result, in order for Nigeria to fully benefit from a cashless society, a number of concerns must be addressed. To begin, a large section of the unbanked population must be educated in order for them to enter the banking system. This will assist the CBN in gradually and methodically achieving its aim of financial inclusion for millions of unbanked Nigerians as well as offering low-cost, safe, and simple financial services to the country's urban, semi-urban, and rural areas.

In addition, banks must promote the e-payments effort while also providing proper training for all levels of their staff that will essentially carry out the program. If properly implemented, Nigeria's cashless policy has the ability to improve and modernize the country's payment system while also elevating the country to the ranks of the world's advanced economies. As a result, for the project to be successful, it will require the cooperation of all parties.

Given that numerous factors continue to work against the success of Nigeria's cashless policy, aggressive investments in cyber security, strengthening internet protocol and controls in banks, and enactment and implementation of key legislative regulations should be pursued to ensure the policy's success in Nigeria.

Finally, rather than reducing the use of cash, ATMs increase the amount of cash available in the economy by making it easier for depositors to withdraw cash. To that end, Nigerian financial institutions must go beyond installing ATMs and distributing ATM cards and intensify efforts on issuing more of credit/debit cards if the country's aim of becoming a cashless society is to be realized. Furthermore, the CBN must continue to lay proper groundwork for inclusion and education of all stakeholders on how the policy may affect them.

## 5. References

1. Acha IA, Kanu C, Agu GA. Cashless Policy in Nigeria: The Mechanics, Benefits and Problems. *Innovative Journal of Economics and Financial Studies*. 2017; 1(1):28-38.
2. Adewale AA. Evaluating the systemic transition to a cashless economy in Nigeria. *Social Science Research*

- Network. Social Science Electronic Publishing, 2013.
3. Adeyeye PO, Ajinaja T. The Impact of Cashless Policy on Economic Development of Nigeria. *IJSSCS*. 2014; 1(1):96-105.
  4. Adu CA. Cashless Policy and Its Effects on the Nigerian Economy. *European Journal of Business, Economics and Accountancy*. 2016; 4(2):81-82.
  5. Agu AO, Agu SV. Cashless Policy and the Nigerian Economy: A Disaggregated Approach. *International Journal of Humanities Social Sciences and Education (IJHSSE)*. 2020; 7(4):21-30. <http://dx.doi.org/10.20431/2349-0381.0704003>
  6. Ajayi LB. Effect of Cashless Monetary Policy on Nigerian Banking Industry: Issues, Prospects and Challenges. *International Business and Finance Management Research*. 2014; 2(1):29-41.
  7. Akara CK, Asekome MO. Cashless Policy and Commercial Banks Profitability in Nigeria. *Advances in Social Sciences Research Journal*. 2018; 5(3):395-406.
  8. Akhalume PB, Ohiokha F. Nigeria's Cashless Economy: The imperatives. *International Journal of Management & Business studies*. 2012; 2(2):31-37.
  9. Alagh JI, Ene EE. Impact of cashless banking on banks' profitability: Evidence from Nigeria. *Asian Journal of Finance & Accounting*. 2014; 6(2):362-376.
  10. CBN. Towards a Cashless Nigeria: Tools & Strategies. *Nigerian Journal of Economy*. 2011; 3(2):344-350.
  11. Central Bank of Nigeria. Towards a Cashless Nigeria: Tools & Strategies. *Nigerian Journal of Economy*. 2012; 21(6):124-132.
  12. CBN. New Cash Policy, Presentation for the Interactive Engagement Session with Stakeholders on Cash-Less Lagos, Stakeholder Session-Supermarket Operators, 2013.
  13. CBN. Cashless Lagos Implementation: New Cash Policy Stakeholder Engagement Sessions (October), 2017. Online: <http://www.cenbank.org/cashless/Cashless%20Lagos%20Pres>
  14. Daniel DG, RW Swartz, AL Fermar. Economics of a Cashless Society: An Analysis of Costs and Benefits of Payment Instruments, AEI-Brookings Joint Center, 2004.
  15. Ejiofor VE, Rasaki JO. Realizing the Benefits and Challenges of Cashless Economy in Nigeria: It Perspective. *International Journal of Advances in Computer Science and Technology*. 2012; 1(1):7-13.
  16. Ejiofor O. What Nigerians Think of the Cashless Economy Policy. *Nigerian Journal of Economy*. 2012; (4)6:97-102. <https://www.cbn.gov.ng/cashless/>
  17. Igbekele GB, Ugo CO. Analysis of Prospects and Challenges of E-Payment System in Nigeria. *Journal of Business*, 2022, 11(1).
  18. Ikpefan OA, Akpan E Godswill OO, Evbuomwan G, Ndigwe C. *International Journal of Civil Engineering and Technology*. 2018; 9(10):718-731.
  19. James AO. Going cashless: Adoption of mobile banking in Nigeria. *Arabian Journal of Business and Management Review (Nigerian Chapter)*. 2013; 1(2):9-17.
  20. Kosoko S. Banks and Information Technology Contracts: Some Legal Considerations. In *MILBQ*, 2011, 79-88.
  21. Marco A, Bandiera L. Monetary policy, monetary areas and financial development with electronic money, IMF Working Study, IMF, 2004.
  22. Ngango A, Mbabazize M, Shukla J. E-Banking and Performance of Commercial Banks in Rwanda. A Case of Bank of Kigali. *European Journal of Accounting Auditing and Finance Research*. 2015; 3(4):25-57.
  23. Obina C. Going cashless will reduce cost of banking operations, This Day Newspaper, 2012. Retrieved for [www.thisdaylive.com/-going-cash-less-reduce-cost-of-banking-operations/11343-](http://www.thisdaylive.com/-going-cash-less-reduce-cost-of-banking-operations/11343-)
  24. Ochei LC. Effective strategies for monitoring and controlling overspending in a cashless society: Lessons for citizenship empowerment. *African Journal of Computing & ICT*. 2012; 5(5):159-162.
  25. Odior ES, Banuso FB. Cashless Banking In Nigeria: Challenges, Benefits and Policy Implications. *European Scientific Journal*. 2013; 8(12):289-316.
  26. Okey OO. The Central Bank of Nigeria's cashless policy in Nigeria: Benefits and challenges. *Journal of Economics and Sustainable Development*. 2012; 3(14):128-133.
  27. Omotunde M, Sunday T, John-Dewole AT. Impact of cashless policy in Nigeria. *Greener Journal of Internet, Information and Communication Systems*. 2013; (1)2:40-43.
  28. Oyetade L, Ofoelue O. Costs of Cashless Society. *Research Journal of Finance and Accounting*, 2013, 4(7).
  29. Summers BJ. Payment system: Design, governance and oversight. London: Central Banking Publications, 2012.
  30. Taiwo JN, Kehinde AO, Afieroho EO, Agwu ME. Appraisal of Cashless Policy on the Nigerian Financial System. *West African Journal of Industrial and Academic Research*. 2016; 16(1):106-126.