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Cashless Policy, Information Technology and Performance of the Nigerian Economy.

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Abstract
The study "cashless policy, information technology and performance of the Nigerian economy'', considers the impact of cashless policy in relation to advancements in information and communication technology (ICT) on the overall performance (growth and development) of the Nigeria's economy between 2010 to 2023. Cashless policy's introduction in Nigeria was in 2012 targeted to reduce excessive cash transactions, promote electronic payment systems, enhance transparency, and improve the efficiency of financial services in the economy. Further, using secondary data from the central bank of Nigeria statistical bulletin, National Bureau of Statistics (NBS), and World Bank Reports, the study would employ both descriptive and econometrics analyses of ordinary least squares (OLS) to assess the relationship between cashless policy and information technology toward economic performance of Nigerian economy. Findings reveal a significant positive correlation between the adoption of cashless payment systems and economic growth, as information and communication technology (ICT) induced banking operations have enhanced transaction speed, improved electronic storage and transmission, reduced corruption, and improved government revenue collection. However, there are undisposed challenges which needed urgent policy attention such as cybercrime, poor network infrastructure, and low-interest banking public and digital illiteracy which have continued to hinder the full realization of the policy's benefits. The study summarizes that cashless policy, when adequately structured and supported by robust ICT improved infrastructure and effective regulatory frameworks will contribute meaningfully to Nigeria's economic growth and development. It therefore recommends among others that policymakers should strengthen cyber security measures, expand broadband access, and intensify financial literacy programs to ensure a more inclusive and technology induced economy.

Keywords: *cashless policy, information and communication technology, economic performance, financial inclusion, economic growth, and Nigerian economy.*

Introduction

In recent years, Nigeria adapted increasingly modern digital financial systems through the implementation of a cashless policy, driven largely by advancements in information technology (IT) to promote transparency, reduce the cost of currency management, and improve overall economic efficiency. This policy adjustment aims to reduce the volume of physical cash in circulation and promote electronic payment systems, with the broader goal of enhancing economic efficiency, reducing corruption, and fostering financial inclusion (CBN, 2012). The cashless policy was introduced formally in 2012 to modernize the Nigerian payment system and align the economy with global trends. Information technology plays a pivotal role in the success of this policy, as digital infrastructure such as Automated Teller Machines (ATMs), Point of Sale (POS) terminals, mobile banking, and electronic fund transfers have become the backbone of financial transactions in the country. These innovations not only facilitate financial operations but also support data collection, transparency, and effective monetary policy implementation (Ovat, 2012). However, the implementation of a cashless economy in Nigeria has faced several challenges, including inadequate digital infrastructure, low financial literacy, cybercrime, and poor internet penetration in rural areas (Akinyemi & Akinyele, 2019). While cashless systems such as mobile banking, POS terminals, online transfers, and digital wallets have expanded, the link between these innovations and sustainable economic growth remains issue of interest. Digital Infrastructural limitations, cyber security threats, insufficient public awareness, and resistance to digital financial platforms, especially among the less-banked rural population, continue to hinder the effectiveness of the policy (Akinyemi & Akinyele, 2019; Olatokun & Falibi, 2015). While some studies report positive correlations between digital financial services and economic development (Okechukwu & Anochiwa, 2017), others argue that the benefits are overstated due to implementation gaps and policy inconsistencies (Okoye & Ezejiofor, 2013). Despite these obstacles, the potential benefits of a robust cashless system are increased transaction speed, improved tax collection, reduced cost of currency management, and better monetary control suggest a strong link between information technology-driven financial policies and national economic growth (Okoye & Ezejiofor, 2013). Some scholars have investigated the relationships between digital financial services and economic growth in developing countries and came up with positive outcomes in terms of GDP growth and financial inclusion (Okechukwu & Anochiwa, 2017), others highlight infrastructural and regulatory gaps that hinder the realization of the policy's full economic potential (Olatokun & Falibi, 2015). Given the ongoing digital transformation of Nigerian financial system, it becomes imperative to examine the extent cashless policy and information technology influence the performance of economic growth and development of Nigeria. The objective highlights the need to understand whether the adoption of digital financial systems contributes meaningfully to Nigeria's economic growth and development, and to what extent infrastructural, regulatory, and socio-economic factors influence the success of the policy (CBN, 2012; Ovat, 2012). The objective will be exposed when we assess the relationship between cashless policy instruments of point of sales service (POS), internet banking penetration, and Nigeria's economic growth indicator such as gross domestic product (GDP) (Okechukwu & Anochiwa, 2017). Also, examine the role of information technology infrastructure in the implementation and performance of the cashless policy (Akinyemi & Akinyele, 2019). We shall further identify the major challenges and limitations affecting the effectiveness of cashless policy in Nigeria's financial sector (Olatokun & Falibi, 2015). Lastly, evaluate the level of financial inclusion driven by cashless initiatives, particularly among rural and underserved populations (Okoye & Ezejiofor, 2013). The study poses understanding that would help banks and tech-firms improve service delivery, reduce transaction costs, and expand outreach, especially in underserved areas (Akinyemi & Akinyele, 2019). Additionally, the study is important for the general public and business owners as a clearer understanding would foster greater trust in digital payments and encourages more citizens to embrace cashless measure (Olatokun & Falibi, 2015). For academics and researchers, the study contributes to the growing body of knowledge on digital finance, development and monetary economics. Generally, the study hopes to bridge the gap between cashless policy implementation and information technology advancement towards economic growth in Nigeria.

Conceptual Clarification

Cashless Policy:

Cashless policy refers to a system where financial transactions are carried out electronically, minimizing the use of physical cash in the economy. It involves the use of instruments such as debit/credit cards, mobile money, internet banking, and Point of Sale (POS) terminals to facilitate payments and settlements (CBN, 2012).

Information Technology (IT):

Information technology encompasses the use of digital tools and systems such as computer networks, mobile applications, data storage, and communication platforms to facilitate the processing, storage, and transmission of information. In the context of cashless policy, IT enables the seamless execution of financial transactions, real-time data analytics, and broader access to banking services (Okechukwu & Anochiwa, 2017) and supporting digital payments, financial monitoring, and security frameworks (Akinyemi & Akinyele, 2019).

Economic Growth:

Economic growth refers to the sustained increase in a country's output of goods and services over time, typically measured by the growth rate of Gross Domestic Product (GDP). It reflects improvements in productivity, employment, investment, and living standards (Todaro & Smith, 2011). Economic growth is considered in relation to how the cashless policy and IT infrastructure contribute to macroeconomic

outcomes such as increased financial access, reduced transaction costs, and more effective monetary control.

Financial Inclusion:

Financial inclusion is the process of ensuring that individuals and businesses have access to useful and affordable financial products and services that meet their needs such as transactions, payments, savings, credit, and insurance delivered in a responsible and sustainable way (World Bank, 2014). The cashless policy, through IT, is expected to drive financial inclusion by expanding access to banking services across urban and rural areas (Olatokun & Falibi, 2015).

Theoretical Framework

The study anchors on several economic and technological theories that explain the relationship between monetary policy, technological advancements, and economic growth, which are the Keynesian Monetary Theory, the Technology Acceptance Model (TAM), and Endogenous Growth Theory. Each of these theories offers insights into how policy instruments and innovations affect macroeconomic outcomes.

Keynesian Monetary Theory:

The Keynesian monetary framework emphasizes the role of money supply and interest rates in influencing aggregate demand and economic output. According to Keynes, monetary policy can be used to stabilize the economy, especially through the control of liquidity and the promotion of investment and consumption (Keynes, 1936). Cashless policy seeks to regulate money flow through electronic channels, enhance the transmission of monetary policy, and foster price stability and economic growth (CBN, 2012). Reduced physical currency circulation can lead to better monetary control and transparency, thus supporting economic stability (Okoye & Ezejiofor, 2013).

Technology Acceptance Model (TAM):

The Technology Acceptance Model explains how users come to accept and use a new technology (Davis, 1989). It is based on two main factors: perceived usefulness and perceived ease of use. In the context of Nigeria's cashless policy, the TAM helps to explain how individuals and businesses respond to digital financial platforms such as mobile banking, internet banking, and POS systems, and the success of a cashless economy largely depends on how the public perceives and adopts these innovations (Olatokun & Falibi, 2015). If users find digital payment platforms convenient and effective, there will be widespread acceptance which would enhance financial inclusion and improvement of economic activities (Akinyemi & Akinyele, 2019).

Endogenous Growth Theory:

The Endogenous Growth Theory posits that investment in human capital, innovation, and knowledge contributes significantly to economic growth (Romer, 1986). Unlike classical models that treat technological progress as external, endogenous growth theory integrates technology and innovation as internal drivers of long-term economic development. Information technology, being a core component of the cashless policy, facilitates innovation in financial services and increases productivity by lowering transaction costs and improving efficiency in the banking sector (Okechukwu & Anochiwa, 2017).

Empirical Framework.

To evaluate the relationships between cashless transactions, Information Technology, and Nigeria's GDP using regression analysis. The findings indicates a positive but weak relationship, suggesting that while cashless tools like POS and electronic banking promote transparency and efficiency, their impact is still limited due to infrastructural and adoption barriers (Okoye and Ezejiofor, 2013). Similarly, Ovat (2012) found that cashless banking reduces the cost of currency management and encourages formal financial transactions, which can lead to economic stimulation. But, he also noted that the uneven distribution of digital services across Nigeria poses a threat to inclusive economic growth.

According to the study conducted by Okechukwu and Anochiwa (2017), using time-series econometric models such as the ARDL approach to examine the impact of ICT (Internet usage, mobile subscriptions) on Nigeria's GDP. The results revealed a significant and positive relationship, implying that investment in ICT infrastructure enhances productivity and facilitates better monetary control.

According to Akinyemi and Akinyele (2019) in conducting study on mobile banking and internet-based transfers found that IT adoption in the banking sector enhances customer experience and operational efficiency by increasing access to credit, reducing transaction costs, and promoting entrepreneurship.

Olatokun and Falibi (2015) conducted a qualitative study on barriers to e-payment adoption, they concluded that although IT enables a cashless economy, its success depends on factors such as user trust, security, and infrastructure.

According to Adewale and Olorunfemi (2020) in a recent econometric study analyzed quarterly data from 2010–2019 and showed that cashless payment channels such as POS and mobile banking had a statistically significant effect on GDP and investment, especially when supported by robust IT systems.

Research Design

The study adopts an ex-post facto research design, which allows the researcher to investigate cause-and-effect relationships where the independent variables as such cashless monetary policy and information technology which cannot be manipulated due to their historical and policy-based nature (Asika, 2006). This design would use secondary data from 2010 to 2020 in between one interval then 2021, 2022, and 2023. A correlational approach will also be employed to examine the relationship between cashless monetary instruments such as POS transactions, mobile (internet penetration) banking, and economic growth indicators like GDP. According to Creswell (2014), correlational research

design helps to determine the degree of relationship between two or more quantitative variables, which aligns with the objectives of this study.

Data Collection Method

Data will be collected from secondary sources through published financial reports, statistical bulletins, and institutional databases. These are reliable and publicly accessible. Secondary data analysis is appropriate in econometric studies, especially when dealing with national-level economic indicators (Gujarati & Porter, 2009).

Variables of the Study

Independent Variables are values of POS transactions, internet (mobile banking) penetration, and ICT and control variable of inflation. Dependent Variable: Gross Domestic Product (GDP) (proxy for economic growth).

Method of Data Analysis

Data would be analyzed using descriptive statistics (mean, standard deviation) and inferential statistics, particularly Ordinary Least Squares (OLS) regression.

Model Specification:

$GDPt = \beta_0 + \beta_1 POSt + \beta_2 ICTt + \beta_3 MBt + \beta_4 INFt + \in t$
Where:
GDP_t = Economic growth
POS_t = Value of Point of Sale Services transactions
MB_t = Mobile banking (internet penetration) usage
ICT_t = Information and Communication Technology investment

INF_t = Inflation rates
$\in_t$ = Error term

$GDPt = 25.95 + 3.02\ POS - 0.86ICT - 0.26\ MB - 0.69INF$

Data Presentation, Analysis and interpretations

Table 1. Key Economic Indicators in Nigeria (2010 to 2023) abridged version

Year	GDP Growth Rate (%)	Inflation Rate (%)	ICT Contribution to GDP (%)	POS Transaction (N Trillion)	Internet Penetration (%)
2010	7.6	13.7	3.0	0.07	24.0
2012	6.5	12.2	4.1	0.2	32.8
2014	6.3	8.1	5.0	0.5	42.7
2016	-1.6	15.7	6.2	0.75	46.1
2018	1.9	12.1	10.0	1.6	53.5
2020	-1.8	13.2	14.7	4.7	63.0
2021	3.4	16.9	16.0	6.4	67.0
2022	3.1	18.9	18.4	8.0	73.0
2023	2.9	24.5	19.9	10.5	76.4

Sources: CBN (2023); NBS (2024); World Bank (2024); and NCC (2023).

Data Analysis and interpretations

From table 1, the descriptive analysis of the Nigeria's ICT, and POS growth during the period under the study from 2010 to 2023, indicates that ICT sector in Nigeria contribution to GDP rose from 3.0% to 19.9%, representing more than a six fold increase, This growth aligns with the central bank of Nigeria's cashless policy introduced in 2012, which encouraged electronic payments, mobile banking, and digital transactions (CBN, 2023). Even though that from the regression analysis, the contribution of ICT was 0.86 or 86% negative towards GDP growth, it indications less awareness on the use of computer utilities. POS transaction volume also grew from N0.07 trillion in 2010 to N10.5 trillion in 2023, indicating massive adoption of cashless measure due to improved information technology infrastructure and Fintech innovation (NCC, 2023). From the regression result, POS operation in the economy has about 3.02% positive impact on the economy. While ICT expanded rapidly from 3.0% in 2010 to 19.9% in 2023, overall GDP growth fluctuated showing that ICT growth alone did not automatically drive total GDP due to other economic challenge such as inflation, insecurity, and foreign exchange volatility (World Bank, 2024). However, during the year 2018 to 2023 ICT expansion, Nigeria recorded modest recovery from recession, suggesting a positive but moderate correlation between ICT growth and economic performance. Inflation rose sharply after 2020 due to the COVID -19 pandemic and exchange rate pressures (NBS, 2023). From the regression figure, Inflation rise can be traced to some hidden charges and the running costs of cashless facilities thereby showing negative impact on the economy. However, increased digitalization and cashless transactions helped mitigate inflationary effects by reducing transaction costs, enhancing efficiency, and improving financial inclusion, especially in urban areas (Adeniran & Oloyede, 2021). Internet penetration maintained a steady rise from 2010 to 2023 showing an encouraging trend towards economic growth.

Finding

The data indicate that cashless policy supported by information technology has significantly improved the performance and modernization of the Nigerian economy in several ways: (i) through improved financial inclusion: the rise in mobile and internet penetration has expanded access to banking services in Nigeria, empowering SME's and informal sector players (Adesina, 2020). (ii) through increased transaction efficiency: e-payment systems have reduced cash handling costs and improved the speed of business transactions, which supports productivity growth and reduces leakages in the financial system (Emefiele, 2022). (iii). through resilience against economic shocks: during the COVID-19 lockdown, the digital economy sustained activities through online banking and e-commerce, cushioning the economic downturn (NBS, 2021). But the challenges remain despite the merits of cashless policy and economic growth; issues like poor electricity supply, network downtime, cybercrime, and low rural ICT access continue to hinder the full impact of the cashless policy (Okoye & Eze, 2022).

Conclusion and Recommendation

Conclusion

The initiation of cashless policy in Nigeria in 2012 marks a significant milestone in the modernization of Nigeria's financial system. Driven by improved information and communication technology (ICT), cashless policy measure sought to reduce the volume of cash transactions, enhance payment efficiency, curb corruption, and promote financial inclusion. The findings reveal that cashless policy has positive impact on Nigeria's economic performance, especially by improving the efficiency of financial transactions, encouraging digital innovation in banking, and supporting the growth of the financial service sectors. However, the efficiency of the policy has been hindered by several challenges like: illiteracy of ICT infrastructure use, inadequate ICT infrastructure, inconsistent power supply, cyber fraud, low public awareness, and uneven adoption of electronic payment systems across rural and urban areas. This study nevertheless, concludes that the cashless policy remains a vital instrument for achieving a more efficient, transparent, and technological driven economy in Nigeria. It should be of note that integration of information technology into the financial system of Nigeria has strengthened monetary policy implementation, enhance speed and security of transactions, and facilitated greater economic productivity. Therefore, sustained investment in digital infrastructure and ICT-driven financial system will further enhance the performance of the Nigerian economy in the long term.

Recommendations

Nigerian government and financial institutions should invest heavily in modern ICT infrastructure and training, including broadband internet, reliable power supply, and general internet training of the citizens especially the rural dwellers to ensure smooth electronic transactions nationwide. The federal government should ensure that they maintain consistency in cashless policy implementation, institute effective monitoring, and evaluation mechanisms to measure performance. Regulatory bodies such as the central bank of Nigeria (CBN), Nigeria Communication Commission (NCC), and Nigeria Deposit Insurance Corporation (NDIC) should develop robust cyber security frameworks to protect users against fraud, hacking, and other online threats. There should be a Continues sensitization campaigns to educate the public especially in the rural areas on the benefits, procedures, and safety of cashless transactions. The banking sectors should extend cashless services tools to the rural less-banking population through mobile banking, agent banking and Fintech partnerships to ensure inclusive growth. Policies that support startups and growths of Fintech should be encouraged to enhance competition, innovation, and efficiency in Nigeria's digital financial ecosystem. Lastly, there should be a strong bond between Central Bank of Nigeria (CBN), Deposit Money Banks (DMB), Telecommunication companies, and Fintech operators that will smoothen easy operation of the cashless policy in Nigeria.

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