

## The Role of Information and Communication Technology on the Effective Implementation of Cashless Policy in Akoko-Edo Local Government Area, Edo State.

Ayegbo Olufemi J  
Department of Computer Science,  
Auchi Polytechnic, Edo State  
[femiayegbo@yahoo.com](mailto:femiayegbo@yahoo.com),

Abas Aliu  
Department of Computer Science,  
Auchi Polytechnic, Edo State.

Akinyemi Seye  
Department of Statistics,  
Auchi Polytechnic, Edo State

Akhuewu Divine  
Department of Computer Science,  
Auchi Polytechnic, Edo State.

Musah Abubakar  
Department of Computer Science  
Auchi Polytechnic, Edo State.

---

### ABSTRACT

This study examines the role of Information and Communication Technology in the effective implementation of cashless policy in Akoko-Edo Local Government Area, Edo State. The paper highlights the impact of the cashless policy in the local economy of the local government area under study. Some selected communities of the local government area were used. These are: Ikpeshi, Igara, Ibillo, Oroso communities. Data were collected using structured questionnaire in the four selected communities. Two hundred questionnaires were distributed at fifty questionnaires to each of the four selected communities. The analysis was based on Correlation, Chi-square and t-test via SPSS version 26.0. The finding revealed that 81.7% of respondents agreed that ICT plays an essential role in the cashless policy implementation in Nigeria as it allows citizens to access banking services whenever and wherever they are, but the policy has been badly implemented as a result of non-effectiveness of ICT or digital infrastructures, low level or lack of digital competence, knowledge, skills and attitudes among the citizenry, most especially in the remote or rural areas. The study equally showed that there is a general lack of sensitization and awareness on the implementation of cashless policy by the CBN. More so, most of our rural and remote areas were largely unbanked and under-banked and the ICT infrastructures are scarce or non-existence. Many of the rural dwellers and farmers rely mostly on cash-based economy to transact their businesses and sell their farm produces. The study concluded that the effective use of ICT is a major driver that would greatly improve the implementation of cashless policy and effect much needed growth in the nation economy. Furthermore, the paper recommends that the government should consider introducing policies that promote and strengthen the use of ICT infrastructures, digital competence, knowledge, skills and attitudinal change for the effective implementation of cashless policy in Nigeria and lastly, adequate measures should be undertaken to ensure that our rural areas are provided with access to efficient ICT services and stronger internet penetration.

**Keywords:** Digital Competence, ICT infrastructures, Cashless Policy, Mobile Devices, Smart phones.

---

### INTRODUCTION

According to Mamudu (2021), monetary policy is an instrument used by the monetary institutions for economic management and sustainable economic growth and development. In this instance, cashless policy is one of the tools used by central bank of Nigeria (CBN) to manage and grow the economy of the country. Cashless economy refers to the economy where transactions are done using digital payments (such as debit cards, credit cards, electronic fund transfer, mobile payments, internet banking and mobile wallets) rather than using cash. It is an economy where currency notes or cash money are not used in monetary transactions. In other words, a cashless economy is an economy with less cash. The policy was introduced by CBN in December, 2011 to curb excesses in the handling of cash in the country. It prescribed a cash handling charges on daily withdrawal above five hundred thousand naira (N500,000.00) for individuals and three

million naira for corporate bodies (N3,000,000.00) . The policy was enforced not to eliminate the use of cash, but to reduce and keep the volume of cash in circulation to the barest minimum. More so, it was a policy which is aimed at scaling up financial inclusion and reducing cases of armed robbery, kidnapping, terrorism financing, advance fee fraud, graft, ransom payment, extortion and other crimes. (Agu *et. al* , 2020). In order words, at the center of this development at ensuring a seamless implementation of the cashless policy is the widespread application of computer technology or ICT.

Traditionally, in Nigeria and most developing countries, the economy has been cash-based. Though the policy has been introduced since 2011, but, the policy was not really trending until recently when it became very popular. The policy caught so many citizens unaware. It was a policy that many people see as completely strange and alien because traditionally, our economy has been heavily dependent on cash. It all began from the currency redesign policy of the CBN. There was no trouble with the redesign but the deliberate, outright and unrestrained mopping up of cash in the economy, which paralyzed and crippled the retail sector and the informal economy, stifled the agricultural value chain, emasculated the transportation sector and disrupted the payment system in the economy. The naira redesign has seriously impacted negatively on the welfare of the people, led to significant loss of jobs and worsened the poverty situation in the country. Cash is a payment instrument and regrettably, the CBN arbitrarily mopped up 70% of the cash in the economy thereby disrupting the economic activities. The digital payment platforms was completely overwhelmed because most digital infrastructures were inefficient and could not withstand the pressure of sudden rise in online payment platform. .(. (Agu *et. al* , 2020).

More so, digital competence was lacking or very low. Digital competence refers to a set of knowledge, skills, attitudes (including the ability, strategies, values and awareness) that are required when using Information and Communication Technology(ICT) and digital media to perform tasks. Digital competence is the pre-requisite to cashless economy or cash transactions. Cashless economy is an economy where transactions are made without physical movement of cash rather by the use of credit or debit card, internet banking among others. Digital competence is an integral rather compulsory part to transform an economy from cash to cashless; as basic knowledge, skills and attitudes are necessary to use ICT and digital media to complete a transaction without cash. Digital competence is the most recent concept describing technology related skills. The dream of Nigeria in the implementation of cashless economy will only come true when the people of Nigeria are digitally competent. (Zakari,2023).

There is a general lack of digital competence among the citizens of Akoko-Edo local government Area of Edo state. Many citizens lack the requisite digital knowledge and skills and attitudes to quickly adapt to the implementation of the cashless policy in the local area.

More so, there is generally inadequate or lack of digital infrastructures to drive the cashless policy in the local areas. Mostly, the local government area is a remote areas that is largely unbanked or under-banked and lack ICT or digital infrastructures. Thus, the introduction of cashless policy in the country led to the crippling of the local economy which prior to the introduction of the cashless policy survive on the cash transactions.

There was no sensitization or awareness of the citizens prior to the introduction of the cashless policy.

Lastly, the attitude of these rural dwellers is stereotyped and they mostly find it very difficult to adapt and adopt the cashless policy because they are used to cash-based economy to transact their businesses and sell their farm produces.

The main objective of the paper is to empirically evaluate the important of information and Communication Technology in the effective implementation of cashless policy in Nigeria. The specific objective is to ascertain how digital competence, knowledge, skills and attitudes of the citizens and the availability of digital infrastructures can effectively enhance the implementation of cashless policy in Nigeria.

### **Hypothesis**

**H<sub>0</sub>:** Information and Communication Technology is not significant for effective implementation of cashless policy in Akoko-Edo local government area.

**H<sub>1</sub>:** Information and Communication Technology is significant for effective implementation of cashless policy in Akoko-Edo local government area.

### **Overview of Cashless Policy in Nigeria**

Cashless policy delivery routes in the present day Nigerian bank includes; Automated Teller Machine(ATM), Point-of-sales(POS), Telephone banking, smart cards, internet banking among others. Virtually all banks in Nigeria have a web presence to enhance and make internet banking possible. Cashless economy is an economy where transaction are carried out without necessarily using physical cash as a means of exchange of transaction but rather with the use of credit or debit card payment for goods and services. The cashless policy initiative of the central bank of Nigeria(CBN) is a move to improve the financial terrain but in the long run sustainability of the policy will be a function of endorsement and compliance by end-users,(Aigbodioh, 2023). The cashless policy is made possible by the advanced use of information technology which facilitates fund transfer and payment, thereby reducing time wasted in banks. Cashless policy helps people to make transaction across long distance with their smart phones, thereby reducing their travel cost and eliminating the risk of carrying cash. ( Hassan *et al.*, 2022).

It is assumed that proper implementation of digital or ICT infrastructures and other technologies can assist the efficient implementation of cashless policy and hence the growth of cashless economy in Nigeria. Information and Communication technology(ICT) is at the heart of this global evolutionary change taking place in electronic banking system in Nigeria today. The application of ICT concepts, techniques, policies and implementation strategies is fundamentally importance to all banks and a needed pre-requisite for local and global competitiveness. The advancement in technology is a major player in ensuring improved services provided in the banking industry. Automated Teller Machine(ATM) is the simplest form of providing basic banking services with online banking, individuals can check their account balances and make payments without having to visit the bank. This has created the much anticipated cashless society where consumers no longer have to pay for all their purchases with hard cash. As most people now own smart phones, banks have equally introduced mobile banking to cater for customers who are always on the move. Mobile banking allows individuals to check their account balances and make fund transfers using their mobile phones. Customers can also recharge their mobile phone via SMS. E-banking has made banking transactions easier around the world and it is fast gaining acceptance in Nigeria. (Uzowulu *et al.*, 2024).

### **Benefits of Cashless Economy**

These benefits are as highlighted as follows:

- **For Consumers:** Increased convenience; more service options; reduced risk of cash related crimes and cheaper access to banking services and access to credit.
- **For Corporations:** Faster access to capital; reduced revenue leakage; and reduced cash handling costs.

- **For Government:** Increased tax collections; greater financial inclusion; increased economic development.
- A secure cashless system can guarantee anonymity of legitimate users but also provides traceability about illegally issued cash or laundered money
- Cashless policy can help deepen bank deposits thereby increasing funds available for commercial use.
- The policy can also help trace double spending, protects content by exposing the double spender's identity, digital cash is a fool proof way of guarding against illegal redistribution of intellectual property and materials
- Cashless policy can help displace shadow economies, bring hidden transactions into the banking system and increase transparency, confidence and participation in the financial system.
- Automated electronic payments, which is an integral part of cashless policy, acts as a gateway into the banking sector and as a powerful engine for growth. Such payments draw cash out of circulation and into the bank accounts, providing low cost funds that can be used to support bank lending for investment – a driver of overall economic activity. The process creates greater transparency and accountability, leading to greater efficiency and better economic performance.
- Promote greater financial inclusion; by making it easier and more affordable for the unbanked and under-banked to access financial services
- Reduce the over reliance on cash for transactions
- Encourage financial deepening and promote savings
- Reduce risks in payments and settlements.
- Reduction in money laundering
- Check on terrorist financing
- Effectiveness of the monetary policy
- Creation of more employment opportunities in the financial sector
- Provision of evidence against bribe givers and takers especially the civil servants and politicians
- Growth of the real sector of the economy because credit will be available for investor. (Monye, 2024)

### **Challenges of Cashless Policy in Nigeria**

Cashless policy, despite its numerous benefits comes with its own challenges even in the developed world. This section looks at some these challenges with specific focus on Nigeria;

- **Behavioral Constraints:** The fact that Nigeria is cash – based economy, people are accustomed to using cash for most of their transactions
- **Banks Attitudes:** Some banks in Nigeria are very conservative; they use very few innovative products and marketing techniques
- **Lack of Confidence:** The security issue is one of the major challenges in the development of cashless policy in Nigeria
- Low Level of Internet penetration and poorly developed telecommunication impede smooth development and improvement of e-payments and e-commerce
- Lack of suitable legal and regulatory framework for e-payment: Nigeria current laws do not accommodate electronic contracts and signatures
- Inadequate banking system
- Political and economic instabilities in neighboring countries: Political instabilities inevitably disturb smooth operations of business and free flow of goods and services.

- **Power:** The state of power in Nigeria today cannot accommodate smooth operations of financial activities. There is need to develop a reliable and sustainable power supply.
- **Infrastructure:** The financial infrastructure in Nigeria is not adequate to carry the load of a cashless society. ATM’s Point of Sales system, mobile banking and other mediums have to be dramatically expanded to touch at least 40% of the whole economy before any meaningful effect can be achieved.
- **Availability of Real Data:** Proper and accurate identification of account holders must be maintained and shared when necessary by all financial institution; also CBN must collaborate with all other government and private agency responsible for collection of identification of individuals in Nigeria for reconciliation of any identification.
- **Investments:** CBN must be ready to invest heavily to make these transitions possible; Technology is not cheap and ever changing at a very fast pace. Investments in billions of dollars made in infrastructure, training, marketing, security, maintaining IT networks and so on will be on a yearly basis for the years to come.
- **Security:** As it relates to laws that are needed to enforce new methods of transactions and a changing culture, the CBN must partner and work with the National Assembly to ensure that proper legislation is being formulated. (Gbanador, 2023), .

## Empirical Analysis

**Table 1: Descriptive Result**

Questions		SD	D	A	SA
The promotion and strengthen of ICT infrastructures would enhance the implementation of cashless policy in Nigeria	Frequency	18	27	110	91
	Percentage (%)	7.3	11	44.7	37
The attitude of the people in the local area is largely attached to cash transactions.	Frequency	22	49	105	70
	Percentage (%)	8.9	19.9	42.7	28.5
<i>Accessibility to the ICT infrastructures in the local area is very low.</i>	Frequency	39	44	86	77
	Percentage (%)	15.9	17.9	35	31.3
Digital knowledge and skills is very low in the local area	Frequency	23	49	104	70
	Percentage (%)	9.3	19.9	42.3	28.5
Cashless Policy can bring about tracking of crimes thus leading to reduction of criminal activities	Frequency	9	51	108	78
	Percentage (%)	3.7	20.7	43.9	31.7
ICT plays an essential role in the cashless policy implementation in Nigeria as it allows citizens to access banking services whenever and wherever they are,	Frequency	16	33	105	92
	Percentage (%)	6.5	13.4	42.7	37.4
There is a general lack of awareness or sensitization of cashless policy in the local government area.	Frequency	23	36	93	94
	Percentage (%)	9.3	14.6	37.8	38.2
Digital payment is more secured because it involves less movement of cash and reduces time wastage in the bank.	Frequency	9	52	97	88
	Percentage (%)	3.7	21.1	39.4	35.8
The cashless policy is made possible by the use of information and Communication technology which facilitates fund transfer and payment.	Frequency	6	31	70	139
	Percentage (%)	2.4	12.6	28.5	56.5
The use of internet and mobile devices such as ATM, smart phones and POS are some of the means of implementing cashless policy in the selected areas.	Frequency	17	39	96	94
	Percentage (%)	6.9	15.9	39	38.2
The level of literacy among the rural dwellers is very low which seriously impacted the implementation of cashless policy	Frequency	9	23	52	162
	Percentage (%)	3.7	9.3	21.1	65.9

Source: Field Survey 2023

Strongly disagreed (SD), Disagree (D), Agree (A), Strongly Agree (SA)

### Interpretation of Descriptive Result

From the result of the analysis it was shown that 81.7% who jointly accounted for 200 respondents agreed and strongly agreed that promoting and strengthen of ICT infrastructure will enhance the implementation of cashless policy while the remaining 18.3% jointly disagreed to the assertion.

The result from the attitude of people in the local area with regard to the response indicates that 71.2% jointly accounted for 175 respondents who agreed that attitude of people of the communities is largely accredited to cash transaction. This is an implication that people of the community have not accepted the cashless policy as they still do transaction with cash.

The result above depicts that approximately 33.7% accounted for 83 responses who are of the opinion that accessibility of ICT in the studied communities is not low. However, majority of the respondents do agree with the assertion that accessibility to ICT infrastructure in the local areas are low

The result shows that respondents are of the opinion that digital knowledge and skills in the studied area is apparently low. This could be attributed to the high level of illiteracy in the area and lack of technical knowhow on the usage of internet for transaction purposes

However, the respondents are of the opinion that the adoption of cashless policy will bring about tracking of crime thus leading to reduction of criminal activities

The responses gathered also shows that ICT plays an essential role in the implementation of cashless policy as it allows for citizens to access their banks wherever and whenever. 76% who jointly accounted for 187 responses agreed and strongly agreed that there is lack of proper sensitization of cashless policy in the local communities under investigation.

Moreover, the respondents agreed that digital payment is more secured as it involves less movement of cash and reduces time wastage in the bank, although there are no banks in the studied area. Furthermore, the cashless policy is made possible by the use of ICT technology which facilitates fund transfer and payment this is agreed by the respondents as shown in the table. However, on the average respondents agreed that cashless policy is made possible by ICT technology.

It is believed that the use of internet and smart devices are some of the means or measures for which the implementation of cashless policy can be made possible as this is described by the result obtained from the analysis carried out. The level of illiteracy in the studied community is low and have impacted to the implementation of cashless policy.

**Table 2: One Sample t-test Result**

	t	df	Sig. (2-tailed)	Inference
The promotion and strengthen of ICT infrastructures would enhance the implementation of cashless policy in Nigeria	11.025	245	.000	Significant
The attitude of the people in the local area is largely attached to cash transactions.	6.973	245	.000	Significant
Accessibility to the ICT infrastructures in the local area is very low.	4.748	245	.000	Significant
Digital knowledge and skills is very low in the local area	6.774	245	.000	Significant
Cashless Policy can bring about tracking of crimes thus leading to reduction of criminal activities	10.266	245	.000	Significant
ICT plays an essential role in the cashless policy implementation in Nigeria as it allows citizens to access banking services whenever and wherever they are,	10.975	245	.000	Significant
There is a general lack of awareness or sensitization of cashless policy in the local government area.	9.054	245	.000	Significant
Digital payment is more secured because it involves less movement of cash and reduces time wastage in the bank.	10.647	245	.000	Significant

The cashless policy is made possible by the use of information and Communication technology which facilitates fund transfer and payment.	17.468	245	.000	Significant
The use of internet and mobile devices such as ATM, smart phones and POS are some of the means of implementing cashless policy in the selected areas.	10.182	245	.000	Significant
The level of literacy among the rural dwellers is very low which seriously impacted the implementation of cashless policy	19.162	245	.000	Significant

Source: Field Survey 2023

The result of the analysis as shown from the table above indicates that the one sample test carried out for all related questions at a degree of freedom of  $n - 1$ , the calculated values are greater than the tabulated value hence we see that the questions are significant. Moreover, the p-value as shown is less than the asymptotic significance. Therefore, it could be concluded that the implementation of information and communication technology (ICT) is relevant and important in the adoption of cashless policy.

### Hypothesis Testing

ICT plays an essential role in the cashless policy implementation in Nigeria as it allows citizens to access banking services whenever and wherever they are

Response	O	E	(O - E)	(O - E) <sup>2</sup>	$\frac{(O - E)^2}{E}$
Strongly Disagree	16	61.5	-45.5	2070.25	33.6626
Disagree	33	61.5	-28.5	812.25	13.20732
Agree	105	61.5	43.5	1892.25	30.76829
Strongly Agree	92	61.5	30.5	930.25	15.12602
Total	246				92.76423

Source: Field Survey 2023

$$\chi^2_{\text{calculated}} = \sum_{i=1}^n \frac{(O_i - E_i)^2}{E_i}$$

To obtain the expected value from the goodness of fit chi square

$$E_i = \frac{1}{n} \sum_{i=1}^n O_i$$

$$E = \frac{16 + 33 + 105 + 92}{4}$$

$$E = \frac{246}{4}$$

$$E = 61.5$$

Decision Rule:

If  $\chi^2_{\text{calculated}} < \chi^2_{\text{tabulated}}$  Accept  $H_0$

If  $\chi^2_{\text{calculated}} > \chi^2_{\text{tabulated}}$  Accept  $H_1$

From the above test since  $\chi^2_{\text{calculated}} > \chi^2_{\text{tabulated}}$  that is  $92.76 > 7.815$

$H_1$  will be accepted while  $H_0$  will be rejected.

## Discussion and Findings

The chi-square calculated value is 92.76, while the chi-square table value is 7.815. Since the chi-square calculated value is higher than the tabulated value, hence, the ( $H_1$ ) alternative hypothesis which says that ICT is a verifiable tool in the implementation of cashless policy is accepted while the ( $H_0$ ) null hypothesis should be rejected.

## Summary of Hypothetical Result

Hypothesis	Chi-Square	Df	Asymp. Sig.	Critical value	Decision	Conclusion
Information and Communication Technology is not a veritable tool for effective implementation of cashless policy in Nigeria.	92.764	3	0.000	7.185	significant	accept the alternative hypothesis

The result of the hypothesis indicates that information and communication technology is a veritable tool for effective implementation of cashless policy in Nigeria.

## CONCLUSIONS

At the heart of making cashless policy operational and effective is the application of computer technology. Information and Communication Technology is very germane to the effective implementation of the cashless policy in Nigeria. More so, effective use of ICT infrastructures, internet penetration in the remote regions, digital competence, requisite digital knowledge, skills and attitudinal change would greatly improve the implementation of cashless policy and effect much needed improvement in the nation economy.

## RECOMMENDATIONS

Furthermore, the paper recommends that the government should consider introducing policies that promote and strengthen the use of ICT infrastructures, digital competence, skills, attitudes and knowledge for the effective implementation of cashless policy in Nigeria and lastly adequate measures should be undertaken to ensure that our rural and remote areas are provided with access to efficient ICT services and internet penetration.

## REFERENCES

- Agu A.O. & Agu S. V. (2020), "Cashless Policy and the Nigerian Economy: A Disaggregated Approach". *International Journal of Humanities, Social Science and Education*, 7(4), 21-30.
- Aigbodioh C.O.(2023). "Cashless System Development in Nigeria: A Comparative Analysis with Selected African Economies". *Gusua Journal of Business Administration*.
- Gbanador, M.(2023), "The Effect of Cashless Policy on Economic Growth in Nigeria: An Autoregressive Distributed Lag Approach. *Asian Journal of Economics, Business and Accounting*, 23(6), 22-31.
- Hassan A., Sule M, Ibrahim M.(2022), "Analysis of Infrastructural Challenges, Cybercrime, and the Cashless Policy in Nigeria: Infrastructural Challenges, Cybercrime, and the Cashless Policy". *Advanced Research on Information Systems Security* 2(1), 13-27.
- Mamudu, Z,U.(2021), "Electronic Banking Payment System and its Impact on the Nigerian Economy", *Journal of Emerging Trends in Economics and Management Science*, 12 (1), 8-26.



Monye, O.(2024), “Cashless Policy Initiative in Nigeria: Outline of Crucial Socio-Economic and Regulatory Considerations”. *Journal of Money Laundering Control*.

Ogunlade D.A, Amodu M.A.,(2024), “The Influence of Cashless Policy on Economic Growth and Development”. *KIU Journal of Social Sciences*.

Oluwapelumi L.A. (2022), “Impact of Cashless Policy on the Performance of Deposit Money Banks in Nigeria”. *Mountain Top University*

Olomukoro C.O.& Oyitso M. O. (2023), “The Nigerian Financial Literacy framework and the CBN’s Cashless Policy Impasse: Adult Education to the Rescue”. *Journal of US- CHINA education*.

Uzowulu H. C., Felicia A. A., and Ifeoma C. A.(2024), “Impact of Cashless Policy on the Nigerian Economy”. *African Banking and Finance Review Journal*

Zakari M. (2023), “Impact of Cashless Policy Measures on Financial Inclusion in Nigeria”. *Journal of Finance and Accounting research*.

### Author’s Brief Profile



**Ayegbo Olufemi John** is currently a Senior Lecturer in the department of Computer Science, Auchi Polytechnic, Auchi, Edo state. His research areas includes: Machine Learning, Neural Networks and Natural Language Processing. He can be reached on +2348033017775 and through email: [femiayegbo@yahoo.com](mailto:femiayegbo@yahoo.com)



**Abas Aliu** is a senior lecturer in the department of computer science auchi polytechnic. He holds BSc and MSc in Computer Science. His research areas are Artificial Intelligence, Cloud Computing and Cyber security. He can be reached on +2349057354854



**Akinyemi Seye** is a Principal Lecturer in the Department of Statistics, Auchi Polytechnic, Auchi. His research interest are Multivariate Methods, Statistical Theory. He can be reached on +234705522885



**AKHUEWU Divine** is presently a Lecturer in the Department of Computer Science, Auchi Polytechnic, Auchi Edo State. He holds BSc and MSc in [Information Technology]. His research areas are Machine Learning, Cloud Computing and Web Development. He can be reached on +2348056530255



**MUSAH Abubakar**, is currently a lecturer in the department of computer Science, Auchi Polytechnic, Auchi Edo State. His research areas are: Cyber security, Machine Learning and Web Development. He holds BSc and MSc in [Information Technology]. And currently a Ph.D. student at Edo University, Uzairue. He can on +2348060248886