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# IMPACT OF AWARENESS AND USAGE OF CASHLESS PAYMENT SYSTEMS ON SOCIO-ECONOMIC ACTIVITIES IN RURAL COMMUNITIES IN KADUNA STATE

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## Abstract

*This study examined the awareness and usage of cashless payment systems in rural communities in Kaduna State, Nigeria, with the aim of determining the level of knowledge, extent of utilization, and factors influencing adoption among rural residents. The study was motivated by the increasing push by the Central Bank of Nigeria toward a cashless economy and the need to promote financial inclusion across underserved populations. A descriptive survey research design was adopted. Data were collected through a structured questionnaire administered to selected respondents across rural communities in Kaduna State. The sample size was determined using appropriate statistical techniques, and data were analyzed using descriptive statistics (mean and standard deviation), as well as inferential statistics including correlation and regression analysis. Findings revealed that rural dwellers possess a relatively high level of awareness of cashless payment platforms such as Automated Teller Machines (ATM), Point-of-Sale (POS) terminals, and mobile banking services. However, the level of actual usage was moderate due to several constraints. The study further established a strong positive and statistically significant relationship between awareness and usage of cashless payment systems, indicating that increased knowledge promotes higher adoption. Regression analysis also identified key determinants of usage, including level of education, network availability, accessibility of POS agents, and transaction costs. Major challenges limiting effective utilization include poor telecommunication infrastructure, unreliable electricity supply, fear of fraud, and relatively high service charges. The study concluded that although awareness of cashless payment systems is increasing in rural Kaduna State, infrastructural and socio-economic barriers continue to limit widespread adoption. The study therefore recommends intensified financial literacy campaigns, expansion of banking and digital infrastructure, reduction of transaction costs, and improved network connectivity to enhance the effectiveness of the cashless policy in rural areas.*

**Keywords:** Cashless payment system, financial inclusion, rural communities, awareness, usage

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## 1. Introduction

In recent years, the proliferation of digital financial technologies has transformed the landscape of financial transactions globally. One of the most significant shifts has been the move from traditional cash-based exchanges to cashless payment systems, which include mobile money, point-of-sale (POS) terminals, automated teller machines (ATMs), online banking, and electronic wallets (Ozili, 2018). Cashless systems are designed to enhance financial inclusion, reduce transaction costs, improve transparency, and promote economic growth (Ndung'u & Waema, 2017). However, the adoption and effective use of these systems remain uneven across different socio-economic and geographic contexts.

In Nigeria, the adoption of cashless policies by the Central Bank of Nigeria (CBN) reflects a deliberate effort to modernize the payment ecosystem and reduce the reliance on physical currency (CBN, 2012). These policies aim to increase the velocity of money, curb cash-related fraud, and deepen formal financial sector participation (Alao & Akinboade, 2019). Despite these intentions, rural communities especially those in states like Kaduna face unique challenges that affect both awareness and usage of cashless payment platforms.

Kaduna State, located in Northwestern Nigeria, is characterized by a mix of urban centers and expansive rural areas where agriculture remains the mainstay of livelihoods (National Bureau of Statistics, 2020). Rural dwellers often encounter barriers such as limited access to banking infrastructure, low levels of digital literacy, and weak telecommunication networks, all of which constrain their engagement with cashless technologies (Eze & Ayeleri, 2021). Additionally, cultural preferences for cash transactions persist, influenced by trust issues, fear of fraud, and skepticism toward unfamiliar electronic systems (Olusegun, 2019).

Research has shown that awareness is a critical precursor to adoption; without adequate knowledge about the existence, benefits, and risks of cashless platforms, potential users are unlikely to shift from conventional cash transactions (Rogers, 2003; Kikulwe, Fischer & Qaim, 2014). In rural settings, information asymmetries are more pronounced, with limited channels for financial education and fewer intermediaries to facilitate understanding (Mensah, 2020). Consequently, even where technologies are available for example, mobile money agents or POS operators the extent to which community members use them effectively remains uncertain.

The significance of examining awareness and usage of cashless payment systems in rural Kaduna State lies in its implications for financial inclusion and sustainable rural development. Understanding the level of awareness and the factors that drive or hinder usage can inform policymakers, financial institutions, and development partners in designing context-specific strategies that bridge the digital divide. Such insights are vital to ensuring that the benefits of Nigeria's cashless agenda are equitably distributed beyond urban enclaves to the grassroots of society.

The objective of this study is to examine the level of awareness and usage of cashless payment systems among rural communities in Kaduna State. Therefore, the hypothesized that there is no significant level of awareness and usage of cashless payment systems among rural communities in Kaduna State. The study contributes to the existing body of literature on digital finance and financial inclusion by providing localized evidence from rural Kaduna State, an

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area that has received limited scholarly attention. It also serves as a reference material for future research on cashless systems in rural and developing economies. This study focuses on the awareness and usage of cashless payment systems among rural communities in Kaduna State, Nigeria. The study covers commonly used cashless payment channels such as Automated Teller Machines (ATMs), Point-of-Sale (POS) terminals, mobile banking, and mobile money platforms. The respondents comprise rural dwellers including farmers, traders, artisans, and salary earners residing in selected rural local government areas of Kaduna State. The study is limited to rural communities in Kaduna State and does not cover urban or semi-urban areas. It also focuses solely on users' awareness and usage patterns without an in-depth technical analysis of banking infrastructure or cybersecurity systems.

## 2.2 Conceptual Review

### Concept of Cashless Payment System

A cashless payment system refers to transactions conducted without the use of physical cash, relying instead on electronic means such as ATMs, POS terminals, mobile banking, internet banking, and mobile money platforms (CBN, 2012). The system aims to promote efficiency, reduce transaction risks, and improve transparency.

### Awareness of Cashless Payment Systems

Awareness refers to the extent to which individuals are informed about the existence, functions, benefits, and risks of cashless payment systems. In rural areas, awareness is often influenced by education level, media exposure, peer influence, and financial literacy programs (Mensah, 2020).

### Usage of Cashless Payment Systems

Usage involves the frequency and manner in which individuals utilize electronic payment channels for transactions such as payments, transfers, and savings. Studies indicate that awareness alone does not guarantee usage; trust, infrastructure, and perceived usefulness also play critical roles (Olusegun, 2019).

### Cashless Payment Systems in Rural Communities

Rural communities often face challenges such as limited banking infrastructure, unreliable networks, low income levels, and cultural resistance to non-cash transactions. These challenges affect both awareness and usage of cashless payment systems in states like Kaduna (Eze & Ayeleri, 2021).

### Empirical Review

Empirical studies on the awareness and usage of cashless payment systems in Nigeria reveal that the Central Bank of Nigeria's (CBN) cashless policy has significantly influenced the adoption of digital financial services, although the level of awareness and actual usage varies across regions, especially between urban and rural communities.

Zakari examined the effect of cashless policy measures such as point-of-sale (POS), mobile payments, and electronic funds transfer on financial inclusion. Using a cross-sectional survey of 400 respondents across Nigeria, the study found that digital payment platforms contribute positively to expanding access to financial services and increasing participation in the formal financial sector. However, the study also noted disparities in adoption levels among different demographic and geographic groups, indicating uneven awareness and usage patterns

Adewale, Toheeb, and Alenoghena (2025) investigated the relationship between cashless policy, financial inclusion, and economic growth in Nigeria. Their findings revealed that digital payment systems are essential components of Nigeria's financial modernization strategy and have a significant long-term influence on economic performance. The study emphasized that increased awareness and access to digital financial services enhance economic participation and transactional efficiency.

Adeniji (2024) examined the influence of digital payment platforms such as POS, ATM, web payments, and mobile banking on economic growth in Nigeria using time-series data from 2012–2024. The study revealed that mobile payment systems exert the strongest positive effect on economic activities, suggesting that improved usage of electronic payments can stimulate productivity and reduce transaction costs.

Agaji (2023) analyzed the effects of cashless policy instruments on deposit money banks' liquidity between 2013 and 2020. Using regression analysis, the study found a significant long-term relationship between electronic payment channels and banking sector performance, indicating that increased adoption of digital transactions strengthens financial intermediation

Ewa and Ina found that although the CBN's cashless initiative improved convenience and transparency, inadequate telecommunications infrastructure, cybersecurity concerns, and limited financial literacy continue to hinder widespread adoption, particularly among unbanked populations.

Udoinyang et al., (2023) study conducted in Akwa Ibom State found that while cashless policy improved transaction tracking and reduced reliance on physical cash, inadequate payment channels, high transaction charges, and poor network reliability significantly limited rural adoption.

Onuegbu et al., (2025) conducted in Southern Nigeria revealed that awareness of digital banking improved usage rates, with communication efforts contributing significantly to increased acceptance of electronic payment platforms.

Specific to Kaduna State, Abdulazeez, Magaji, and Musa (2023) investigated infrastructural challenges affecting the implementation of the cashless policy. Using survey data collected from bank customers and officials in Kaduna, the study found that inconsistent electricity supply, poor telecommunications networks, and security concerns remain major barriers to effective utilization of electronic payment systems despite the policy's introduction.

Obot et al., (2025), study on small-scale enterprises found that although over 60% of respondents were aware of the cashless policy, only a smaller proportion regularly used digital payment channels, with mobile transfers being the most common method

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Despite extensive national-level studies on the impact of cashless policy on financial inclusion, economic growth, and banking performance, there is still limited empirical evidence specifically examining the depth of awareness, behavioural determinants, and actual usage patterns among rural households in Kaduna State. Existing Kaduna-focused research has largely emphasized infrastructural challenges without quantitatively linking awareness levels to usage outcomes across demographic variables such as education, occupation, and income.

Furthermore, many Nigerian studies rely on urban or mixed samples, which may not accurately capture the socio-economic realities of rural communities where digital literacy and access constraints are more pronounced. This creates a contextual and methodological gap that necessitates localized empirical investigation into how awareness translates into sustained usage of cashless payment systems in rural Kaduna State.

**Theoretical Review**

This section reviews theories relevant to understanding awareness and usage of cashless payment systems, particularly in rural communities.

**Technology Acceptance Model (TAM)**

The Technology Acceptance Model (TAM), developed by Davis (1989), explains how users come to accept and use new technologies. The model posits that two key factors influence technology adoption. The degree to which an individual believes that using a particular system will improve their performance. Perceived Ease of Use (PEOU): the degree to which an individual believes that using the system will be free from effort.

In rural communities, awareness plays a critical role in shaping these perceptions. Where rural dwellers understand the benefits of cashless payment systems—such as convenience, safety, and speed—they are more likely to perceive them as useful. However, low literacy levels, fear of technology, and lack of training may reduce perceived ease of use, thereby discouraging adoption (Ozili, 2018). TAM is particularly relevant to this study because it explains how individual perceptions, influenced by awareness, determine the usage of cashless payment systems in rural Kaduna State. TAM focuses mainly on individual perceptions and does not adequately account for infrastructural constraints such as poor network coverage and electricity shortages, which are common in rural Nigeria.

## 3.1 Research Methodology

The study adopts a descriptive survey research design. This design is appropriate because it allows for the systematic collection of data from a sample of respondents in order to describe the level of awareness and usage of cashless payment systems in rural communities of Kaduna State. The design also enables the researcher to examine relationships between awareness, usage, and influencing factors without manipulating the study variables (Saunders, Lewis & Thornhill, 2019).

The study is conducted in Kaduna State, Nigeria, with specific focus on selected rural communities across different local government areas. Kaduna State is predominantly agrarian, with a large proportion of its population residing in rural settlements where access to formal banking services is limited. These characteristics make the state suitable for examining issues relating to cashless payment awareness and usage.

The population of the study comprises all adult residents (18 years and above) in the selected rural communities of Kaduna State who are actively engaged in economic activities such as farming, trading, artisan work, and salaried employment.

The sample size 200 respondents were selected for the study using Yamane's (1967). The study employs a multi-stage sampling technique, which involves: Random selection of rural local government areas in Kaduna State; Selection of rural communities within the selected LGAs;

Simple random sampling of respondents within each community. This technique ensures fairness and adequate representation of rural dwellers. The study utilizes primary data collected directly from respondents. Primary data are considered reliable for capturing firsthand information on awareness and usage of cashless payment systems. The questionnaire uses a five-point Likert scale ranging from Strongly Agree (5) to Strongly Disagree (1).

Data collected are analyzed using both descriptive and inferential statistics: Pearson correlation and multiple regression analysis. Statistical analysis is conducted using the Statistical Package for Social Sciences (SPSS). The functional relationship between awareness and usage is expressed as:

UPS = f(AWS, SEF, INF) ---------- 1

Where:

UPS = Usage of Cashless Payment Systems, AWS = Awareness of Cashless Payment Systems

SEF = Socio-economic Factors, INF = Infrastructural Factors

Econometrically, the model is stated as:

$UPS = \beta_0 + \beta_1 AWS + \beta_2 SEF + \beta_3 INF + €$ ---------- 2

The null hypotheses are tested at a 5% level of significance. Any calculated p-value less than 0.05 leads to the rejection of the null hypothesis, while p-values greater than 0.05 result in failure to reject the null hypothesis.

### 4.1 Data Presentation, Analysis and Discussion of Findings

#### Descriptive Analysis

**Table 1 Awareness of Cashless Payment Systems**

| Item | Statement | Mean | Std. Dev. | Decision |
|---|---|---|---|---|
| 1 | Awareness of cashless payment systems 4.62 | 0.54 | Accepted | |
| 2 | Knowledge of non-cash payments | 4.58 | 0.57 | Accepted |
| 3 | Awareness of POS machines | 4.21 | 0.69 | Accepted |
| 4 | Awareness of ATM cards | 4.66 | 0.49 | Accepted |
| 5 | Awareness of mobile banking | 4.02 | 0.78 | Accepted |
| 6 | Awareness of mobile money | 4.05 | 0.75 | Accepted |
| 7 | Awareness from banks/agents | 4.11 | 0.72 | Accepted |

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| | | | | |
|---|---|---|---|---|
| 8 | Media influence on awareness | 4.09 | 0.74 | Accepted |
| Grand Mean = | | 4.29 | | |

Rural respondents in Kaduna State exhibit a high level of awareness of cashless payment systems.

**Table 2 Usage of Cashless Payment Systems**

| Item | Statement | Mean | Std. Dev. | Decision |
|---|---|---|---|---|
| 9 | Use of ATM cards | 4.55 | 0.60 | Accepted |
| 10 | Use of POS machines | 4.18 | 0.71 | Accepted |
| 11 | Use of mobile banking | 2.46 | 1.02 | Rejected |
| 12 | Use of mobile money | 3.89 | 0.83 | Accepted |
| 13 | Preference for cashless payment | 4.03 | 0.76 | Accepted |
| 14 | Regular usage | 3.97 | 0.81 | Accepted |
| 15 | Ease of transactions | 4.42 | 0.64 | Accepted |

Grand Mean = 3.93

Usage of cashless payment systems is moderate, with ATM and POS dominating, while mobile banking usage remains low.

**Table 3 Factors Influencing Usage**

| Item | Mean | Std. Dev. |
|---|---|---|
| Education level | 4.44 | 0.62 |
| Income level | 4.10 | 0.71 |
| POS availability | 4.53 | 0.59 |
| Network availability | 4.61 | 0.56 |
| Electricity supply | 4.07 | 0.73 |
| Trust in banks | 4.02 | 0.77 |
| Transaction charges | 4.48 | 0.61 |

**Interpretation:**

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Infrastructure, education, and transaction costs significantly influence usage.

**Correlation Analysis**

**Table 4 Relationship between Awareness and Usage**

| Variables | Correlation (r) | Sig. (p) |
|---|---|---|
| Awareness vs Usage | 0.684 | 0.000 |

There is a strong positive and statistically significant relationship between awareness and usage of cashless payment systems. This implies that as awareness increases, usage also increases.

Null Hypothesis ($H_{03}$) is rejected.

**Table 5 : Regression Analysis**

| Model Summary | R | $R^2$ | Adjusted $R^2$ | Std. Error |
|---|---|---|---|---|
| | 0.721 | 0.520 | 0.506 | 0.61 |

Awareness and other explanatory variables explain 52% of the variation in usage of cashless payment systems.

**Table 6 : Regression Coefficients**

| Variable | Beta (β) | t-value | Sig. |
|---|---|---|---|
| Constant | 1.214 | 4.31 | 0.000 |
| Awareness | 0.487 | 6.98 | 0.000 |
| Education | 0.221 | 3.84 | 0.001 |
| Network availability | 0.309 | 5.21 | 0.000 |
| Transaction charges | −0.198 | −3.17 | 0.002 |

**Regression Equation:**

Awareness has a positive and significant effect on usage.

Network availability significantly boosts usage.

Transaction charges negatively affect usage.

Null hypotheses on awareness and infrastructure are rejected.

**Discussion of Findings**

The findings reveal that rural communities in Kaduna State possess a high level of awareness of cashless payment systems. This aligns with the Technology Acceptance Model (Davis, 1989), which emphasizes awareness as a foundation for perceived usefulness.

Despite high awareness, actual usage remains moderate, with respondents preferring ATM and POS services over mobile banking applications. This supports earlier findings by Ozili (2018) and Eze and Ayeleri (2021), who reported that rural dwellers favor simpler and more familiar payment channels.

The strong positive correlation between awareness and usage confirms that awareness significantly influences adoption. However, infrastructural constraints such as poor network connectivity and high transaction charges limit the full utilization of cashless systems. This finding corroborates Alao and Akinboade (2019), who observed that rural cashless adoption in Nigeria is infrastructure-dependent.

Regression results further indicate that awareness, education, and network availability significantly predict usage, while transaction charges discourage adoption. This highlights the need for supportive infrastructure and cost reduction strategies to enhance rural participation in Nigeria's cashless economy.

**Summary of Findings**

The study investigated the awareness and usage of cashless payment systems among rural communities in Kaduna State. Data were collected through structured questionnaires and analyzed using descriptive statistics, correlation, and regression analysis. The key findings are summarized as follows:

The study revealed that rural residents in Kaduna State possess a high level of awareness of cashless payment systems, particularly ATM, POS, mobile money, and mobile banking services. Sources of awareness include banks, agents, media (radio and TV), and peer interactions. The grand mean for awareness was 4.29 on a 5-point scale, indicating strong knowledge about the existence and functions of cashless payment platforms.

Despite high awareness, the actual usage of cashless payment systems was moderate (grand mean = 3.93). Respondents preferred ATM and POS transactions, with relatively lower usage of mobile banking applications. This suggests that familiarity and ease of use drive adoption in rural settings.

Socio-economic factors (education and income), infrastructural factors (network availability, electricity supply, POS agent accessibility), and institutional factors (trust in banks, transaction costs) were found to significantly affect the usage of cashless systems. Regression analysis confirmed that awareness, education, and network availability positively influenced usage, while high transaction costs negatively impacted adoption. Correlation analysis showed a strong positive and statistically significant relationship ($r = 0.684$, $p < 0.05$) between awareness and usage. This confirms that increasing awareness leads to higher adoption of cashless payment systems.

Respondents reported key challenges such as poor network connectivity, high transaction costs, limited POS/ATM availability, and fear of fraud. Technical knowledge was also identified as a barrier, although complexity of the systems was not a major deterrent.

## 5.1 Conclusion and Recommendations

**Conclusion**

The study concludes that awareness alone is not sufficient to guarantee widespread usage of cashless payment systems in rural Kaduna State. While residents are knowledgeable about cashless platforms, infrastructural challenges, transaction costs, and socio-economic constraints limit their effective utilization.

High awareness of cashless payment systems exists among rural dwellers. Usage remains moderate, with ATM and POS systems being more frequently used than mobile banking. Awareness, education, and network availability significantly influence adoption, confirming that both individual perception and enabling environment are critical. Transaction costs and infrastructural deficits negatively affect usage.

Overall, the study underscores the need for holistic interventions that combine financial literacy, improved infrastructure, and cost-effective solutions to enhance cashless payment adoption in rural communities.

**Recommendations**

Based on the findings, the following recommendations are proposed:

Government, banks, and NGOs should organize training programs in rural areas to educate residents on the benefits, procedures, and security measures of cashless payments. Banks and fintech companies should increase the number of POS agents, mobile money agents, and ATM machines in rural communities to enhance accessibility. Telecommunication providers should strengthen mobile network coverage in rural Kaduna State to ensure reliable cashless transactions. Regulatory authorities should encourage banks and fintech firms to lower transaction fees for rural users to improve adoption. Awareness campaigns should include security education to reduce fear of fraud and build confidence among rural users. Training on mobile banking applications can help rural dwellers diversify their usage beyond ATM and POS services.

**Contribution to Knowledge**

This study contributes to knowledge in the following ways:

Provides empirical evidence on awareness and usage of cashless payment systems specifically in rural communities of Kaduna State, an area previously under-researched. It confirms the strong relationship between awareness and usage, supporting the Technology Acceptance Model (TAM) in rural Nigerian contexts. It highlights infrastructural and socio-economic barriers that affect adoption, offering insights for policymakers and financial institutions. It serves as a reference for designing targeted interventions to improve financial inclusion in rural areas.

**Limitations of the Study**

While the study offers valuable insights, certain limitations exist:

The study focused only on selected rural communities in Kaduna State; findings may not be generalizable to all rural areas in Nigeria. Respondents may have overstated awareness or usage, introducing response bias. Limited sample size due to logistics may affect the precision of statistical estimates. The study captures data at a single point in time and does not account for changes in awareness or usage over time.

**Suggestions for Further Research**

Examine longitudinal changes in cashless payment usage in rural communities over multiple years. Compare urban and rural adoption patterns to identify structural disparities in cashless payment systems. Investigate the impact of mobile money education programs on adoption

and financial inclusion in rural areas. Explore gender differences in awareness and usage of cashless payment systems. Study behavioral factors, such as trust, risk perception, and cultural attitudes, affecting cashless adoption in rural Nigeria.

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