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ADOPTION OF CASHLESS TRANSACTION POLICY AMONG GUINEACORN (SORGHUM) TRADERS IN SELECTED LOCAL GOVERNMENT AREAS OF BAUCHI STATE, NIGERIA

Adamu A.G[1], Ahmad D[2], Adomi A. A[3], Mohammed K. A[4], Masud M[5]
[1] Department of Agricultural Extension and Management, Bauchi State College of Agriculture, Bauchi, Nigeria
[2] Department of Agricultural Economics and Extension, Faculty of Agriculture and Agricultural Technology, Aliko Dangote University of Science and Technology, Wudil, Kano State, Nigeria
[3] Department of Agricultural Economics and Extension, Faculty of Agriculture, Aliko Dangote University of Science and Technology, Wudil, Kano State, Nigeria
[4] Department of Agricultural Extension and Management, Bauchi State College of Agriculture, Bauchi, Nigeria
[5] Department of Agricultural Economics and Extension, Faculty of Agriculture, Federal University Lafia,, Nasarawa State, Nigeria.

Corresponding author: abdullahigiadeadamu6.@gmail.com. 08166182922

ABSTRACT

This study investigates the adoption of the cashless transaction policy among guinea corn (sorghum) traders in selected Local Government Areas of Bauchi State, Nigeria. Specifically, the study sought to: (i) describe the personal and socio-economic characteristics of guinea corn traders, (ii) determine their perception of cashless policies, (iii) ascertain the rate of adoption of cashless payment methods, (iv) identify socio-economic factors influencing adoption, (v) examine preferred e-payment methods, and (vi) highlight constraints affecting adoption. Data were obtained from 205 respondents using a structured questionnaire. Descriptive statistics, Likert scale analysis, and binary logistic regression were employed to analyze the data. The findings revealed a high level of awareness (96%) of cashless systems among traders, with Point of Sale (POS) and credit/debit cards as the most commonly used payment methods. Socio-economic factors such as age, education, gender, trading experience, and perception were found to significantly influence adoption. The major constraints identified include network failure, insecurity, and low digital literacy. Based on these findings, the study recommends improving digital infrastructure, enhancing financial literacy, and promoting trust and security in e-payment systems to facilitate wider adoption among rural traders.

Keywords: Cashless transaction, guinea corn traders, digital payment, adoption, Bauchi State.

1.0 INTRODUCTION

1.1 Background to the Study

Cashless transactions refer to financial operations that do not require the physical exchange of currency notes or coins but are carried out through electronic or digital means such as debit and credit cards, internet banking, mobile money applications, and Point of Sale (POS) terminals. These methods provide faster, safer, and more efficient modes of financial exchange compared to traditional cash-based systems. Globally, the emergence of cashless systems is closely tied to the rapid advancement in financial technology (FinTech) and the growing pursuit of financial inclusion, economic transparency, and modernization of payment infrastructures (Upadhyay & Jahanyan, 2016).

In Nigeria, the Central Bank of Nigeria (CBN) introduced the cashless policy in 2012 as part of its efforts to reduce the volume of cash transactions in circulation, minimize the cost of cash management, curb corruption, and encourage the use of electronic payment platforms. The policy also sought to formalize financial transactions, enhance the traceability of funds, and integrate more citizens into the banking system, thereby promoting financial inclusion (CBN, 2015). The introduction of mobile banking, electronic wallets, and POS agents has made digital payments more accessible, even in semi-urban and rural communities.

However, despite these initiatives, the level of adoption across Nigeria remains uneven. Urban areas, where infrastructure such as internet connectivity and electricity are more stable, have witnessed higher adoption rates. In contrast, rural areas—particularly those dominated by small-scale agricultural traders—lag behind due to infrastructural, educational, and socio-economic challenges (Olanrewaju & Oyewole, 2021). Traders in rural markets often rely on physical cash for their daily operations due to factors such as poor network availability, lack of awareness, fear of fraud, and limited access to financial services.

Guinea corn (sorghum) is one of the most widely cultivated and traded cereal crops in northern Nigeria. It serves as both a staple food and an important source of income for rural households. In local markets across Bauchi State, guinea corn trading plays a central role in sustaining the rural economy and ensuring household food security. Despite the potential of cashless systems to improve market efficiency—by reducing risks associated with carrying cash, preventing theft, and enabling faster transactions—many guinea corn traders still prefer cash-based transactions. Understanding the factors influencing this resistance or slow adoption is critical to formulating effective strategies for promoting digital payment use among rural traders.

Therefore, this study examines the adoption of the cashless policy among guinea corn traders in selected Local Government Areas (LGAs) of Bauchi State, with a focus on identifying socio-economic characteristics, perceptions, and constraints that determine the extent of cashless transaction adoption in the region.

1.2 Statement of the Problem

The introduction of the cashless policy by the Central Bank of Nigeria was aimed at transforming the nation's financial system by reducing cash dependency and promoting electronic payment platforms. While previous studies (e.g., Nwolisa & Kasie, 2014; Adeniji et al., 2019; Elechi & Rufus, 2016) have examined the adoption of cashless systems in urban and semi-urban areas, their focus has largely been on general market traders or urban consumers. These studies highlighted factors such as convenience, trust, education, and technological infrastructure as determinants of adoption. However, there remains a lack of empirical evidence on cashless policy adoption among agricultural commodity traders in rural markets, particularly guinea corn (sorghum) traders in northern Nigeria, who form a critical segment of rural agricultural trade.

Moreover, while awareness and usage of cashless systems have been investigated, previous research has not adequately addressed the interplay between socio-economic characteristics, perception, and infrastructural constraints in rural trading environments. Factors such as gender disparity, cultural norms, trading experience, digital literacy, and local infrastructural limitations have been underexplored. Additionally, the impact of persistent challenges like network failure, insecurity, and power instability on sustained adoption in rural markets remains insufficiently studied.

This gap is significant because rural agricultural traders operate in environments that are structurally and socially different from urban settings. Without understanding the specific determinants of adoption in these contexts, policymakers and financial institutions cannot design targeted interventions to enhance digital financial inclusion among rural traders.

Therefore, this study seeks to fill this theoretical and empirical gap by examining the socio-economic characteristics, perceptions, adoption rates, and constraints affecting the adoption of cashless transaction systems among guinea corn traders in selected Local Government Areas of Bauchi State. The findings are expected to provide actionable insights for improving digital financial participation in rural agricultural markets.

1.3 Research Questions

1. What are the socio-economic characteristics of guinea corn traders in the study area?
2. What socio-economic factors influence the adoption of cashless transactions among traders?
3. What are traders' perceptions of the cashless policy?
4. What are the constraints to adoption?

1.4 Objectives of the Study

The broad objective is to assess the adoption of cashless transaction policy among guinea corn traders in Bauchi State. Specifically, the study aims to:

i. Describe the personal and socio-economic characteristics of traders.
ii. Determine the traders' perception of cashless policies.

iii. Ascertain the rate of adoption of cashless payment methods.
iv. Identify socio-economic factors influencing adoption.
v. Examine preferred e-payment methods.
vi. Highlight constraints affecting adoption.

1.5 Hypotheses

H_{01}: The personal and socio-economic characteristics of guinea corn traders do not significantly influence the adoption of cashless transactions.

H_1: The personal and socio-economic characteristics of guinea corn traders significantly influence the adoption of cashless transactions.

H_0: Traders' perception of cashless policies does not significantly affect their adoption of cashless transactions.

H_{02}: Traders' perception of cashless policies significantly affects their adoption of cashless transactions.

H_0: The rate of adoption of cashless payment methods among guinea corn traders is not significantly influenced by socio-economic factors.

H_{03}: The rate of adoption of cashless payment methods among guinea corn traders is significantly influenced by socio-economic factors.

H_0: Socio-economic factors do not significantly determine the adoption of cashless transaction methods.

H_{04}: Socio-economic factors significantly determine the adoption of cashless transaction methods.

H_0: Preferred e-payment methods do not significantly influence the adoption of cashless transactions among traders.

H_{05}: Preferred e-payment methods significantly influence the adoption of cashless transactions among traders.

H_0: Constraints such as network failure, digital illiteracy, and insecurity do not significantly affect the adoption of cashless transactions.

H_{06}: Constraints such as network failure, digital illiteracy, and insecurity significantly affect the adoption of cashless transactions.

1.6 Justification of the Study

This research is essential to understanding behavioral and infrastructural gaps limiting digital financial inclusion among rural traders. Findings will guide policymakers, financial institutions,

and extension agencies in designing tailored interventions—such as literacy training, infrastructure development, and awareness campaigns—to foster digital adoption and strengthen rural market efficiency.

2.0 LITERATURE REVIEW

2.1 Adoption of Cashless Transactions in Nigeria

The Nigerian cashless policy was introduced in Lagos in 2012 and expanded nationwide in 2015 (CBN, 2015). The initiative sought to curb excessive cash circulation and improve payment efficiency. However, despite policy efforts, adoption among rural populations remains low due to infrastructural constraints and distrust of formal banking systems (Nwolisa & Kasie, 2014; Adeniji et al., 2019).

2.2 Factors Influencing Adoption

Adoption is influenced by factors such as convenience, perceived security, and ease of use (Esther et al., 2022). Socio-economic variables including age, gender, education, income, and trading experience are also significant (Senthilkumar & Subburaj, 2019). Higher education and income levels generally increase adoption due to better exposure and confidence in technology (Afolabi, 2020).

2.3 Preferred E-payment Methods

Popular digital payment methods in Nigeria include POS, ATM, mobile banking, and digital wallets. POS terminals are most common in semi-urban and rural settings due to accessibility and simplicity (Muhibudeen & Haladu, 2018). Adedamola (2023) further noted that traders prefer POS because it requires minimal technical literacy.

2.4 Challenges of the Cashless Policy

Key barriers include unreliable internet, cyber fraud, poor power supply, low trust, and resistance to change (Elechi & Rufus, 2016). Traders often fear fraud or transaction failure, which discourages frequent use of digital platforms (Adeniji et al., 2019).

2.5 Theoretical Framework

This study is anchored on the **Diffusion of Innovation (DOI) Theory** by Rogers (1995). The DOI theory posits that the adoption of an innovation depends on five key attributes: **relative advantage, compatibility, complexity, trialability, and observability**. Individuals are more likely to adopt an innovation if they perceive it as offering clear benefits over existing practices, aligns with their needs and values, is easy to use, can be tested on a small scale, and its results are visible to others.

Strengths of DOI Theory

1. Provides a clear framework to explain how innovations are communicated and adopted within social systems.

2. Highlights the influence of perceived benefits, compatibility, and ease of use on adoption decisions.

3. Offers measurable constructs (e.g., adoption rate, perceived advantages) that can be operationalized in empirical studies.

Weaknesses of DOI Theory

1. It assumes a relatively linear adoption process, which may not fully capture the complexities of behavior in rural or traditional communities.

2. The theory does not explicitly account for socio-economic constraints, infrastructural barriers, or cultural factors that may hinder adoption.

Relevance to the Study

The DOI theory is highly relevant for examining the adoption of cashless transactions among guinea corn traders in Bauchi State because it helps explain how **perceptions of convenience, security, and relative advantage** influence traders' willingness to use digital payment systems. It also provides a framework for analyzing how **trialability** (e.g., occasional POS usage) and **observability** (seeing peers adopt cashless methods) can promote wider adoption, while also highlighting potential barriers to uptake.

2.6 Empirical Review

Several studies have investigated the adoption of cashless systems in Nigeria and other developing economies:

1. **Nwolisa & Kasie (2014)** examined cashless policy adoption in urban markets and found that awareness, education, and perceived convenience significantly influenced usage, but rural areas were largely overlooked.

2. **Adeniji, Adewale, & Ajayi (2019)** studied small-scale traders and reported that **trust, perceived security, and ease of use** were major determinants of e-payment adoption. However, their study focused primarily on urban and semi-urban traders, leaving a gap for rural agricultural markets.

3. **Elechi & Rufus (2016)** highlighted barriers to cashless adoption in rural Nigeria, including **network failure, poor electricity, low digital literacy, and fear of fraud**, emphasizing infrastructural and educational constraints.

4. **Adedamola (2023)** investigated the impact of digital payment systems on rural traders and found that **POS systems and mobile banking** were preferred due to ease of access, but consistent usage was limited by unreliable networks and low confidence in electronic transactions.

5. **Adewumi, Adebayo, & Salihu (2022)** emphasized the role of **education and financial literacy** in promoting mobile banking and cashless adoption, suggesting that socio-economic characteristics strongly influence adoption behavior.

Gap Identified: While these studies provide insights into awareness, perception, and infrastructural challenges, **there is limited empirical research specifically targeting guinea corn traders in rural Bauchi State**. Furthermore, most studies focus on urban markets or general traders, leaving a gap regarding how socio-economic characteristics, perception, preferred e-payment methods, and infrastructural constraints interact to influence adoption in rural agricultural markets. This study seeks to fill this gap by providing **context-specific evidence** for cashless policy adoption among rural guinea corn traders.

3.0 METHODOLOGY

3.1 Study Area

The study was carried out in Bauchi State, Nigeria, situated in the northeastern region. The state has 20 LGAs with agricultural-based economies, especially in cereals such as sorghum, maize, and millet. Guinea corn trading is particularly dominant in Giade, Ganjuwa, and Alkaleri LGAs.

3.2 Sampling Procedure

A **multi-stage sampling technique** was employed for this study. In the first stage, three Local Government Areas (LGAs) — **Giade, Ganjuwa, and Alkaleri** — were purposively selected due to their active and prominent guinea corn (sorghum) markets. In the second stage, three communities were randomly selected from each of the chosen LGAs, giving a total of nine communities. In the final stage, **simple random sampling** was used to select **210 guinea corn traders** from these communities. After data cleaning, **205 valid responses** were obtained and used for analysis.

This sampling approach ensured that the study captured a **representative sample of active guinea corn traders** across the major trading centers in the selected LGAs of Bauchi State, providing reliable data for assessing cashless transaction adoption.

3.3 Data Collection

Data were obtained using a structured questionnaire containing both closed and open-ended questions. Sections covered demographics, perceptions, constraints, and adoption rates.

3.4 Data Analysis

Descriptive statistics, Likert scale analysis, and binary logistic regression were used.

- **Descriptive statistics** summarized socio-economic variables.
- **Likert scales** analyzed perception and constraints.
- **Binary logistic regression** identified determinants of adoption.

4.0 RESULTS AND DISCUSSION

4.1 Socio-Economic Characteristics

Table 1: Socio-Economic Characteristics of Respondents

Variable	Frequency	Percentage (%)
Gender (Male)	191	93.2
Female	14	6.8
Age (Years)		
18–30	42	20.5
31–40	69	33.7
41–50	56	27.3
>50	38	18.5
Education		
Quranic	76	37.1
Primary	35	17.1
Secondary	25	12.2
Tertiary	69	33.7
Marital Status (Married)	174	84.9
Single	31	15.1
Experience (Years)		
1–10	61	29.8
11–20	101	49.3
>20	43	21.0

The result in Table 1 reveal that the trading activity is dominated by men (93.2%), while only 6.8% of respondents were female. This aligns with the findings of Olayemi and Adefalu (2019), who noted that trading and other agribusiness activities in northern Nigeria are largely male-dominated due to cultural and religious norms that restrict women's engagement in public markets. Similarly, Ahmed et al. (2020) observed that in many northern communities, men control large-scale trading networks, while women are more involved in small-scale or household-based processing and sales. The age distribution shows that the majority of respondents (61%) fall within the economically active age range of 31–50 years, indicating a workforce that is physically active, experienced, and productive. This finding is consistent with Adamu and Ibrahim (2021), who reported that individuals within this age range are more engaged in commercial and agricultural activities

because they possess both the energy and entrepreneurial motivation necessary for sustained trading operations. Regarding educational background, 37.1% of respondents had Quranic education, while 33.7% attained tertiary education, and smaller proportions had primary or secondary schooling. This mix suggests that guinea corn traders combine traditional Islamic literacy with modern education. According to Adewumi et al. (2022), educational attainment influences access to information, record keeping, and the adoption of innovations such as digital payment systems and mobile banking. Similarly, Eze and Okonkwo (2018) emphasized that education enhances traders' ability to make informed business decisions and adapt to new marketing technologies. In terms of marital status, the study shows that a majority (84.9%) of respondents were married, implying a stable and responsible population. Ibrahim and Musa (2020) noted that marriage often enhances business credibility and responsibility, as married individuals are more financially disciplined and committed to long-term livelihood strategies. Marital status can therefore influence traders' willingness to engage in formal or institutional business practices. With respect to trading experience, nearly half of the respondents (49.3%) had 11–20 years of trading experience, while 29.8% had 1–10 years, and 21.0% had more than 20 years of experience. This indicates a substantial level of exposure to market dynamics. Experienced traders are more likely to understand pricing systems, manage risks, and adopt innovations that enhance efficiency (Ogunyemi et al., 2021). Similarly, Usman and Bello (2019) found that experience contributes significantly to traders' adaptability to changes in marketing structures and technology adoption.

4.2 Traders' Perception of Cashless Transactions

Table 2: Traders' Perception of Cashless Transactions

Statement	Strongly Agree	Agree	Neutral	Disagree	Mean Score
Cashless is convenient	98	62	21	24	4.1
It improves security	72	69	38	26	3.8
Network failure is a major problem	122	53	19	11	4.5
I trust e-payment systems	59	66	47	33	3.5
I will continue using cashless methods	87	74	24	20	4.0

The results presented in Table 2 reveal that guinea corn traders in the study area generally have a positive perception of cashless transactions, as most respondents agreed that electronic payment systems are convenient and improve the security of business operations. The high mean score of 4.1 for convenience indicates that traders appreciate the ease, speed, and time-saving nature of cashless payments compared to the manual handling of physical cash. According to Adewumi et al. (2022), convenience and efficiency are key drivers that encourage the use of cashless systems among small-scale traders in Nigeria, as they reduce time wastage associated with cash counting and change management during transactions. Similarly, the mean score of 3.8 for improved security reflects traders' belief that cashless payments minimize risks related to theft, loss, or mishandling of physical cash. Eze and Okonkwo (2018) observed that electronic transactions enhance business safety by reducing the exposure of traders to cash-related risks, especially in

crowded market environments where theft and robbery are common. However, the highest mean score of 4.5 recorded for the statement "network failure is a major problem" underscores a critical technological and infrastructural challenge that affects the smooth functioning of cashless systems. According to Ogunyemi et al. (2021), unreliable network connectivity remains one of the major obstacles to the effective use of digital financial systems in rural and semi-urban areas of Nigeria, leading to delayed or failed transactions that discourage continuous use. The moderate mean score of 3.5 for trust in e-payment systems suggests that while awareness and usage levels are increasing, a degree of skepticism persists among traders. This may be attributed to past experiences with transaction failures, fraud, or delayed reversals. Ahmed et al. (2020) reported that low levels of trust in financial technology are often linked to insufficient consumer protection, lack of transparency, and limited digital literacy among market participants. Furthermore, the mean score of 4.0 for continued usage indicates strong willingness and readiness among traders to sustain the use of cashless payment systems, provided that major barriers such as poor network service, transaction errors, and mistrust are adequately addressed. According to Usman and Bello (2019), the sustainability of cashless transactions in informal markets depends largely on the perceived reliability and simplicity of the system, as well as consistent user satisfaction. Overall, the perception results imply that traders have a favourable attitude toward cashless transaction systems, recognizing their convenience, safety, and long-term benefits. Nevertheless, infrastructural challenges and trust-related issues must be resolved to ensure full adoption and continuous usage of electronic payment methods in rural and semi-urban trading environments.

4.3 Rate of Adoption

Table 3: Rate of Adoption Among Respondents

Adoption Level	Frequency	Percentage (%)
Non-users	12	5.9
Occasional users	88	42.9
Frequent users	105	51.2

The findings in Table 3 reveal that the majority of guinea corn traders in the study area (51.2%) are frequent users of cashless transaction methods, suggesting a relatively high level of adoption and integration of digital financial systems into daily market activities. This trend reflects a gradual shift from cash-based trading to more efficient, technology-driven payment systems. According to Nwankwo and Eze (2021), the increased adoption of electronic payment systems among small-scale traders in Nigeria is driven by their perceived benefits, including speed, convenience, and reduced security risks associated with cash handling. Additionally, 42.9% of respondents were occasional users of cashless transactions, indicating that although many traders are aware of and have access to digital payment options, consistent usage remains constrained by operational challenges such as poor network services, delayed confirmations, and unreliable transaction reversals. Ogunyemi et al. (2020) observed that infrastructural limitations, particularly in rural and semi-urban markets, hinder the steady utilization of cashless systems, thereby creating intermittent reliance on cash payments. Interestingly, only 5.9% of respondents reported not using any form of cashless transaction, signifying that awareness and exposure to digital payment platforms are

almost universal among guinea corn traders. This aligns with Adewumi et al. (2022), who found that extensive awareness campaigns and the widespread availability of mobile money agents have contributed significantly to increased familiarity with cashless services among rural traders in Nigeria. The results also show that POS (Point of Sale) is the most preferred payment method (44%), followed by credit/debit cards (28%) and mobile transfers (14%). This preference reflects the practicality and simplicity of POS services in rural market environments where internet access is often limited. According to Usman and Bello (2019), POS technology has bridged a critical gap in financial inclusion by offering traders real-time access to electronic payments without requiring advanced digital literacy or constant internet connectivity. However, the high proportion of occasional users underscores the persistence of barriers such as unstable network coverage, transaction errors, and inadequate user confidence. Ahmed et al. (2020) emphasized that the full adoption of digital financial systems in informal markets depends on the reliability of infrastructure, system transparency, and user training. Therefore, while the overall adoption rate is promising, sustainability will depend on addressing these challenges. Overall, the findings indicate that cashless transaction adoption among guinea corn traders is significantly growing, supported by high awareness and practical accessibility of POS and mobile payment services. Nevertheless, achieving sustained and widespread usage requires targeted efforts to improve network reliability, enhance user trust, and promote digital literacy through training and financial education.

4.4 Logistic Regression Analysis

Table 4: Logistic Regression Analysis

Variable	Coefficient (β)	Std. Error	Wald	Sig. (p<0.05)	Exp(β)
Constant	-3.215	0.876	13.48	0.000	—
Age	0.219	0.082	7.12	0.008	1.24
Gender	0.598	0.261	5.24	0.022	1.82
Education	0.341	0.102	11.23	0.001	1.40
Trading Experience	0.278	0.091	9.35	0.003	1.32
Perception	0.459	0.124	13.66	0.000	1.58

Model Summary: Nagelkerke $R^2 = 0.623$; Model $\chi^2 = 79.21$ ($p < 0.01$)

The results of the binary logistic regression analysis presented in Table 4 reveal that several socio-economic variables significantly influence the likelihood of adopting cashless transaction systems among guinea corn traders in Bauchi State. The model demonstrates a good fit, with a Nagelkerke R^2 value of 0.623, implying that approximately 62.3% of the variation in cashless adoption is explained by the predictors included in the model. The overall model chi-square ($\chi^2 = 79.21$, $p < 0.01$) confirms that the model is statistically significant, indicating that the selected socio-economic variables jointly influence the adoption of cashless systems among traders. Specifically, education ($\beta = 0.341$; $p = 0.001$) exerts a positive and significant influence on the adoption of

cashless transactions. This implies that traders with higher educational attainment are more likely to utilize digital payment systems, as education enhances literacy, exposure, and understanding of technology-based financial tools. According to Adewumi et al. (2022), education plays a critical role in facilitating digital literacy, improving confidence in the use of mobile banking and POS systems among small-scale traders. Similarly, Ogunyemi et al. (2020) observed that better-educated traders are more capable of navigating mobile transaction interfaces and resolving transaction issues independently, which promotes continued use. The results also show that age ($\beta = 0.219$; $p = 0.008$) has a positive and significant effect on adoption, indicating that older traders tend to adopt cashless payment systems more than younger ones. This finding may be attributed to the fact that older traders often possess greater financial stability, business experience, and risk tolerance. According to Usman and Bello (2019), older traders are generally more exposed to evolving trade practices and are more willing to adapt to technological changes that enhance operational efficiency. Furthermore, gender ($\beta = 0.598$; $p = 0.022$) was found to significantly influence adoption, showing that male traders are more likely to adopt cashless transaction systems than female traders. This reflects the gender disparity in access to digital technology and financial services within rural and traditional communities. Ahmed et al. (2020) similarly reported that women in northern Nigeria face multiple barriers—such as limited access to smartphones, lower financial autonomy, and socio-cultural restrictions—that hinder their full participation in modern financial systems. The coefficient for trading experience ($\beta = 0.278$; $p = 0.003$) also indicates a positive relationship, suggesting that traders with longer years of market participation are more inclined to adopt digital payments. Experienced traders are more likely to appreciate the benefits of cashless transactions, such as improved recordkeeping, faster transactions, and reduced risks associated with cash handling. According to Eze and Okonkwo (2018), accumulated trading experience enhances adaptability to innovation and encourages trust in emerging market technologies. Most importantly, perception ($\beta = 0.459$; $p = 0.000$) exhibits the strongest and most significant positive relationship with adoption, confirming that favorable attitudes, trust, and confidence in digital systems are decisive factors influencing their usage. Traders who perceive cashless transactions as secure, reliable, and efficient are significantly more likely to continue using them. This finding aligns with Nwankwo and Eze (2021), who emphasized that positive user perception and trust in system integrity are key determinants of continuous digital payment usage in Nigeria. Overall, the regression results highlight education, perception, and experience as the strongest predictors of cashless adoption among guinea corn traders. These findings underscore the importance of financial literacy programs, trust-building initiatives, and infrastructural development in strengthening digital financial inclusion in rural markets. Policies that expand access to training, improve network infrastructure, and promote gender-inclusive financial systems will further enhance adoption and sustainability of cashless transactions in northern Nigeria.

4.5 Major Constraints

Table 5: Major Constraints to Cashless Transaction Adoption Among Guinea Corn Traders

Constraint	Frequency	Percentage (%)	Mean Rank
Network failure	41	20.0	1st
High dependency on cash	35	17.1	2nd
Digital illiteracy	31	15.1	3rd
Security issues	27	13.2	4th
Transaction delay	22	10.7	5th
Power supply	20	9.8	6th
High charges	16	7.8	7th

The results presented in Table 5 reveal that several constraints hinder the full adoption of cashless transactions among guinea corn traders in the study area. Network failure ranked as the most critical challenge (20.0%), indicating that unreliable internet connectivity remains a major obstacle to smooth and consistent electronic payment operations. This finding is consistent with Ogunyemi et al. (2020), who reported that poor telecommunication and network infrastructure constitute a major barrier to the effective implementation of cashless systems in rural Nigeria. Inadequate connectivity often leads to transaction interruptions, delayed confirmations, and loss of customer confidence, all of which discourage regular usage of digital payment platforms. The second major constraint identified is high dependency on cash (17.1%), suggesting that despite increasing awareness of cashless systems, many traders still rely heavily on physical currency. This dependency may stem from long-standing trading habits, cultural preferences, or a lack of complete trust in digital alternatives. According to Nwankwo and Eze (2021), many small-scale traders in traditional markets continue to favor cash transactions due to perceived reliability and familiarity, as well as skepticism toward technology-driven systems. Digital illiteracy (15.1%) was another significant constraint, reflecting low levels of technological awareness and limited capacity to operate POS terminals, mobile banking applications, or other electronic payment platforms. This supports the findings of Adewumi et al. (2022), who noted that digital literacy plays a vital role in determining the ability of small-scale traders to understand and use cashless tools effectively. Traders with limited education or exposure to technology often find electronic interfaces challenging to navigate, which limits adoption. Security concerns (13.2%) and transaction delays (10.7%) also emerged as major issues affecting traders' willingness to adopt cashless systems. Respondents expressed fears of fraud, unauthorized deductions, and erroneous debits that are difficult to resolve, reducing their trust in digital payment systems. According to Ahmed et al. (2020), trust and perceived security risks significantly influence user confidence in adopting cashless transactions, especially in informal markets where regulatory enforcement is weak. Furthermore, irregular power supply (9.8%) was identified as a practical limitation that affects the use of POS terminals and the charging of mobile devices. This aligns with the report by Usman and Bello (2019), which emphasized that unstable electricity supply in rural areas hampers the functionality of digital devices and limits the effectiveness of cashless policies. Additionally, high service charges (7.8%) discourage traders-particularly those with low profit

margins-from conducting frequent electronic transactions. Eze and Okonkwo (2018) observed that excessive transaction costs remain a deterrent to financial inclusion, as small-scale traders tend to avoid digital payments that reduce their net earnings. Overall, these findings indicate that infrastructural, educational, and economic factors collectively constrain the widespread use of cashless transactions among guinea corn traders. Addressing these challenges through improved network infrastructure, affordable service charges, digital literacy training, and strengthened electronic security systems will significantly enhance adoption and long-term sustainability of cashless transaction systems in rural markets.

5.0 CONCLUSION AND RECOMMENDATIONS

5.1 Conclusion

The study concludes that although awareness of cashless systems among guinea corn traders is high, full adoption is constrained by infrastructural, literacy, and trust-related factors. Socio-economic characteristics such as education, gender, and experience significantly affect adoption likelihood.

5.2 Recommendations

Based on the findings of the study, the following **six recommendations** are made to government agencies, bank managers, financial institutions, and transaction service providers:

1. Government and network service providers should expand reliable network coverage, ensure stable electricity supply, and upgrade digital infrastructure to support smooth electronic transactions.
2. Stakeholders should intensify sensitization through radio programs, community leaders, extension agents, and local associations to deepen traders' understanding of the benefits of cashless systems.
3. Capacity-building programs should be implemented to train traders—especially older and less-educated ones—on how to confidently use POS, mobile banking, and other e-payment tools.
4. Financial institutions should design simplified, low-cost, user-friendly platforms and incentives (such as starter POS support or low-interest digital loans) to encourage adoption among women, low-income traders, and those with limited experience.
5. Banks and fintech companies should improve the availability of POS machines, enhance mobile banking features, reduce transaction charges, and ensure rural-friendly interfaces for commonly used payment methods.
6. Strong security mechanisms should be implemented to minimize fraud, secure user data, and provide quick-resolution channels for failed transactions, thereby building trust and encouraging sustained usage.

REFERENCES

Adamu, M. A., & Ibrahim, A. S. (2021). Socio-economic determinants of agricultural marketing participation among rural traders in northern Nigeria. *Journal of Agricultural Economics and Development, 10*(3), 45–54.

Adedamola, A. (2023). Impact of digital payment systems on rural traders in Nigeria. *Journal of African Development Studies, 18*(2), 45–57.

Adeniji, O., Adewale, T., & Ajayi, A. (2019). Determinants of e-payment adoption among small-scale traders in Nigeria. *African Journal of Economics and Management, 10*(3), 87–99.

Adewumi, K. O., Adebayo, A. M., & Salihu, U. M. (2022). Influence of education on the adoption of mobile banking and cashless transactions among small-scale traders in Nigeria. *African Journal of Business and Economic Research, 17*(2), 133–145.

Afolabi, J. (2020). Education and financial technology adoption in emerging markets. *Economic Perspectives, 22*(4), 77–88.

Ahmed, B. I., Usman, A., & Bala, M. (2020). Gender roles and participation in agricultural commodity marketing in northern Nigeria. *Nigerian Journal of Rural Sociology, 21*(1), 87–98.

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes, 50*(2), 179–211.

Central Bank of Nigeria. (2015). *Guidelines for the operation of the cashless policy in Nigeria*. Author.

Elechi, R., & Rufus, A. (2016). Barriers to cashless policy adoption among rural traders in Nigeria. *Nigerian Journal of Financial Innovation, 4*(1), 55–68.

Esther, U., Adamu, M., & Okechukwu, P. (2022). User perception and technology adoption of digital finance in rural Nigeria. *International Journal of Agricultural Economics, 9*(6), 120–129.

Eze, C. C., & Okonkwo, U. N. (2018). Effect of education on market participation among small-scale farmers and traders in Nigeria. *Journal of Development Studies, 8*(4), 62–70.

Homans, G. C. (1958). Social behavior as exchange. *American Journal of Sociology, 63*(6), 597–606.

Ibrahim, S. A., & Musa, H. (2020). Marital status and socio-economic responsibility among traders in rural markets of Nigeria. *Journal of Social Sciences and Humanities, 9*(2), 110–119.

Muhibudeen, A., & Haladu, S. (2018). Patterns of POS usage among traders in northern Nigeria. *Journal of Banking and Finance, 14*(2), 23–35.

Nwankwo, O. C., & Eze, F. U. (2021). Adoption and challenges of cashless policy among market women and traders in Nigeria. *Journal of Banking and Finance, 10*(2), 54–68.

Nwolisa, C., & Kasie, J. (2014). Evaluation of cashless policy implementation in Nigeria. *International Review of Economic Policy, 7*(3), 60–72.

Ogunyemi, T. A., Abubakar, M., & Yusuf, L. (2020). Infrastructure and the adoption of financial technology in rural Nigerian markets. *International Journal of Agricultural Economics and Development, 8*(3), 42–55.

Ogunyemi, T. A., Abubakar, M., & Yusuf, L. (2021). Experience and adaptability to marketing innovations among agro-traders in the Sahel region of Nigeria. *International Journal of Agricultural Research and Innovation, 5*(1), 21–30.

Olanrewaju, A., & Oyewole, F. (2021). Digital finance adoption in rural markets: A Nigerian perspective. *Journal of Development Finance, 5*(1), 30–41.

Olayemi, J. K., & Adefalu, L. L. (2019). Gender participation in agricultural marketing in northern Nigeria. *Journal of Agricultural Extension, 23*(4), 45–53.

Rogers, E. M. (1995). *Diffusion of innovations* (4th ed.). Free Press.

Senthilkumar, R., & Subburaj, R. (2019). Socioeconomic determinants of mobile payment adoption among traders. *Asian Journal of Business and Technology, 8*(3), 44–53.

Upadhyay, P., & Jahanyan, S. (2016). Digital transformation and cashless economy: Global perspectives. *Journal of Information Technology Studies, 11*(2), 77–90.

Usman, U. M., & Bello, A. R. (2019). Market experience and its influence on innovation adoption among rural traders. *Journal of Business and Entrepreneurship Development, 6*(1), 73–82.