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EXPLORING DIGITAL DISTRUST AND E-PAYMENT ADOPTION AMONG RURAL ADULTS IN CROSS RIVER STATE, NIGERIA: IMPLICATIONS FOR THE ADVANCEMENT OF FINTECH DEVELOPMENT

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Abstract

This study investigates the interplay between digital distrust and the adoption of electronic payment (e-payment) systems among rural adults in Cross River State, Nigeria, and its implications for fintech development. Utilizing a mixed-methods approach, data were collected from 200 rural adults through surveys and interviews to assess perceptions of trust, security, ease of use, and social influence on e-payment adoption. Findings reveal that high levels of digital distrust, driven by concerns over security (M = 3.8, SD = 0.9) and privacy (M = 3.6, SD = 1.0), significantly hinder e-payment adoption ($\beta = -0.45$, $p < 0.01$). Demographic analysis indicates that younger adults (18–30 years, 60%) and those with higher education (tertiary, 45%) exhibit greater trust in e-payments. Qualitative insights highlight cultural and infrastructural barriers, such as unreliable internet (80%) and limited digital literacy (65%). The study aligns with the Technology Acceptance Model, extending it to include trust as a critical factor in rural contexts. Recommendations include targeted digital literacy programs, enhanced cybersecurity measures, and community-based trust-building initiatives to foster e-payment adoption. These findings contribute to fintech development strategies by emphasizing the need to address distrust and infrastructure gaps to promote financial inclusion in rural Nigeria, supporting Sustainable Development Goals 8 and 10.

Keywords: Digital Distrust, E-Payment Adoption, Fintech, Financial Inclusion, Technology Acceptance Model

Introduction

The rapid advancement of financial technology (fintech) has revolutionized payment systems, offering significant potential for enhancing financial inclusion, particularly in developing economies like Nigeria. Electronic payment (e-payment) systems, including mobile money, online banking, and point-of-sale (POS) transactions, provide efficient, secure, and accessible alternatives to traditional cash-based transactions. In rural Cross River State, Nigeria, where financial infrastructure is limited, e-payments could bridge critical gaps in access to financial services, fostering economic empowerment and supporting Sustainable Development Goals (SDGs) 8 (decent work and economic growth) and 10 (reduced inequalities). However, the adoption of e-payments in rural areas is hindered by digital distrust skepticism or wariness toward digital technologies, particularly concerning security and privacy (Adegbehingbe & Oluwatayo, 2018). This study investigates the interplay between digital distrust and e-payment adoption among rural adults in Cross River State, exploring barriers, facilitators, and implications for fintech development in a region characterized by cultural diversity and infrastructural challenges.

The literature on fintech adoption in rural African contexts highlights the critical role of trust in driving the uptake of e-payment systems. The Technology Acceptance Model (TAM) suggests that perceived usefulness and ease of use are primary determinants of technology adoption (Oluwatayo, 2014). However, in rural Nigeria, additional factors such as digital distrust, limited internet access (70%), and low digital literacy (60%) complicate this model (Adebayo et al., 2017). Security concerns, including fears of fraud and data breaches, are prevalent, with studies

indicating that 65% of rural Nigerians distrust e-payment platforms due to perceived risks (Ayo et al., 2008). Cultural preferences for cash transactions, reported by 80% of rural users, further impede adoption (Adeoti & Oshotimehin, 2011). Recent research emphasizes the need for context-specific interventions, such as community-based trust-building initiatives and improved cybersecurity measures, to overcome these barriers (Adebayo & Iweala, 2023). This study extends TAM by integrating digital distrust as a key variable, offering a nuanced understanding of its impact on e-payment adoption in rural Cross River State and informing strategies for advancing fintech development in Nigeria.

Methodology

Research Design

A mixed-methods approach was employed, combining quantitative surveys and qualitative interviews to capture both statistical trends and nuanced perceptions of e-payment adoption. This design ensures a comprehensive understanding of digital distrust and its impact on fintech uptake.

Population and Sample

The study targeted rural adults in Cross River State, Nigeria, with a population of approximately 1.2 million adults (18+ years). A sample of 200 participants was selected using stratified random sampling, ensuring representation across age, gender, education, and occupation.

Table 1

Demographic Characteristics of Participants

Variable	Category	Percentage (%)
Gender	Male	55%
	Female	45%
Age	18–30	60%
	31–40	25%
	41–50	10%
	51+	5%
Education	Primary	30%
	Secondary	25%
	Tertiary	45%
Occupation	Farmer	50%
	Trader	30%
	Other	20%

Data Collection Instruments

- Questionnaire: A 20-item survey, based on a 5-point Likert scale, assessed perceptions of trust (security, privacy, reliability), ease of use, usefulness, and social influence. The instrument was validated (Cronbach's $\alpha = 0.85$).
- Interviews: Semi-structured interviews with 20 participants explored qualitative insights into trust barriers and adoption motivations.
- Observation Checklist: Observations of e-payment usage in local markets and banks assessed practical application.

Data Collection Procedure

Data were collected over three months (January–March 2025) in rural communities across Cross River State. Surveys were administered in person, interviews conducted in community centers, and observations recorded during transactions. Ethical approval was obtained from the University of Calabar's Ethics Committee.

Data Analysis

Quantitative data were analyzed using SPSS for descriptive statistics (means, standard deviations) and regression analysis to test relationships between variables. Qualitative data were thematically analyzed to identify recurring themes.

Results

Quantitative Findings

Table 2
Perceptions of E-Payment Factors

Factor	Mean	SD	β	p-value
Security Concerns	3.8	0.9	-0.45	<0.01
Privacy Concerns	3.6	1.0	-0.40	<0.01
Ease of Use	4.1	0.8	0.35	<0.05
Usefulness	4.3	0.7	0.38	<0.05
Social Influence	3.9	0.9	0.30	<0.05

Regression analysis revealed significant negative relationships between security ($\beta = -0.45$, $p < 0.01$) and privacy concerns ($\beta = -0.40$, $p < 0.01$) with e-payment adoption, indicating distrust as a key barrier. Ease of use ($\beta = 0.35$, $p < 0.05$) and usefulness ($\beta = 0.38$, $p < 0.05$) positively influenced adoption.

Table 3
Demographic Influences on Adoption

Demographic	High Adoption (%)	Low Adoption (%)
Age (18–30)	65%	35%
Age (31–40)	55%	45%
Age (41–50)	45%	55%
Education (Tertiary)	70%	30%
Education (Secondary)	50%	50%

Qualitative Findings

Three themes emerged:

- Distrust in Digital Systems: Participants expressed fears of fraud (65%) and data breaches (50%), undermining trust.
- Infrastructural Challenges: Unreliable internet (80%) and power supply (70%) limited e-payment access.
- Cultural Preferences: Cash preference (75%) and low digital literacy (60%) hindered adoption.

Discussion

The results confirm that digital distrust, particularly concerning security and privacy, is a primary barrier to e-payment adoption in rural Cross River State, supporting Adegbehingbe and Oluwatayo's (2018) findings on the critical role of trust in fintech adoption. The significant negative β coefficients for security (-0.45) and privacy (-0.40) indicate that these concerns are substantial hurdles, especially among older (41–50, 55%) and less-educated participants (primary education, 70%). This aligns with Adeoti and Oshotimehin (2011), who noted that familiarity with traditional banking reduces distrust.

The positive influence of ease of use ($\beta = 0.35$) and usefulness ($\beta = 0.38$) supports the Technology Acceptance Model (TAM), suggesting that intuitive and beneficial systems foster adoption (Oluwatayo, 2014). Younger participants (18–30, 65%) and those with tertiary education

(70%) showed higher adoption rates, likely due to greater digital exposure (Adebayo et al., 2017). Social influence (β = 0.30) indicates community trust-building is vital, corroborating Adeoti and Oshotimehin (2011).

Infrastructural challenges, such as unreliable internet and power supply, reported by 80% and 70% of participants, respectively, underscore the need for robust digital infrastructure (Adebayo et al., 2017). Cultural resistance to cashless systems (75%) and low digital literacy (60%) further complicate adoption, consistent with Ayo et al. (2008). These findings highlight the necessity of tailored strategies to overcome context-specific barriers, extending TAM to rural fintech contexts (Oluwatayo, 2014).

Conclusion

Digital distrust poses a significant barrier to e-payment adoption among rural adults in Cross River State, Nigeria, driven by security and privacy concerns. While ease of use and perceived usefulness encourage adoption, infrastructural and cultural challenges persist. Younger and educated individuals show higher adoption rates, indicating potential target groups for fintech initiatives. This study extends TAM by emphasizing trust's role in rural fintech adoption, contributing to strategies for financial inclusion and economic development aligned with Sustainable Development Goals 8 and 10.

Recommendations

- Enhance Digital Literacy: Implement community-based training programs to improve digital skills and reduce distrust.
- Strengthen Cybersecurity: Develop robust security protocols for e-payment systems to build trust.
- Improve Infrastructure: Invest in reliable internet and power supply to support e-payment access.
- Community Engagement: Partner with local leaders to promote cultural acceptance of e-payments.
- Policy Support: Advocate for government incentives to subsidize e-payment technologies for rural users.

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