International Journal for Multidisciplinary Research (IJFMR)
E-ISSN: 2582-2160 ● Website: www.ijfmr.com ● Email: editor@ijfmr.com

Consumer Adoption of Mobile Payments in Nigeria: The Interplay of Trust, Security, and Privacy in Nigeria

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Abstract

Security threats persist globally, impacting various sectors, including the mobile payment industry. In Nigeria, safeguarding sensitive consumer financial data is crucial in consumer usage. Adequate security measures are essential to protect these assets, as trust, security, and privacy are pivotal in driving consumer adoption of mobile payment systems. This study aimed to advance a model that examines how the interplay between trust, security, and privacy collectively fosters consumer confidence regarding the widespread use of mobile payments. Based on the M-Payment Adoption Model, the hypothetical framework incorporates critical components to enhance consumer adoption of mobile payments in Nigeria by focusing on trust, security, and privacy. This model emphasizes the continuous authentication and validation of users and devices to address security concerns. By integrating features that bolster user trust and ensure robust data protection, the framework aims to enhance mobile payment systems' perceived security and privacy. It supports seamless transactions while addressing privacy issues, thereby fostering greater consumer confidence and adoption of mobile payment solutions.

Keywords: Mobile Payment, Trust, Security, Privacy

1. INTRODUCTION

M-payment system is any payment transaction that initiates, activates, and confirms the payment using a mobile communication device, such as a mobile phone. Driven by increased smartphone usage and technological improvements, the adoption of mobile payment systems has become a disruptive force in the global financial scene. In Nigeria, where mobile payment solutions are gaining traction, understanding the factors influencing consumer adoption is essential for fostering economic inclusion and improving digital transaction systems (Ajzen, 1991; Davis, 1989). This journal explores the adoption dynamics of mobile payments in Nigeria, focusing on the interplay of trust, security, and privacy through the lens of the M-Payment Adoption Model. Unlike traditional security frameworks such as the zero-trust model, which emphasizes stringent access controls, the M-Payment Adoption Model provides a comprehensive perspective on how perceived ease of use, perceived usefulness, and other adoption-related factors influence consumer behavior (Venkatesh et al., 2003).

The M-Payment Adoption Model is a valuable tool for examining the factors that drive or hinder the acceptance of mobile technologies. It assesses how perceived ease of use and perceived usefulness affect technology adoption (Davis, 1989). Factors like trust, security, and privacy concerns are closely related to mobile payments. Understanding how these components interact is essential for creating strategies that

effectively increase consumer acceptance and remove obstacles as mobile payments become an increasingly important part of financial transactions in Nigeria (Rogers, 2003; Venkatesh et al., 2012).

Trust plays a pivotal role in influencing consumer decisions regarding mobile payments. It includes elements like the dependability of the payment provider, the transparency of its operations, and the quality of its customer service (Gefen et al., 2003). Establishing and preserving high levels of trust is crucial for encouraging the widespread use of mobile payment systems in the Nigerian market, where worries about financial fraud and data security are prevalent (McKnight et al., 2002). This study will explore how different aspects of trust impact consumer adoption intentions and identify strategies to build and sustain trust in the Nigerian mobile payment landscape.

Security and privacy concerns are closely tied to trust and critical to consumer acceptance. Features for security, like fraud detection and encryption, are essential for protecting financial transactions and mitigating risks (Pavlou, 2003). Additionally, privacy concerns related to data sharing and collection can significantly affect consumer attitudes towards mobile payments (Smith et al., 2011). This journal will analyze how perceptions of security and privacy impact adoption behaviours and provide insights into how mobile payment providers can address these concerns to enhance consumer confidence and adoption in Nigeria (Chen et al., 2008; Xu et al., 2011).

2. RELATED WORKS

These studies provide well-rounded views of how different frameworks and methodologies have been used to explore mobile payment adoption in Nigeria, emphasizing the interplay of trust, security, and privacy.

A framework for investigating the variables impacting Nigeria's adoption of mobile payment systems was proposed by Olaleke et al. (2016). The researchers used a mixed-method strategy to collect information on customer attitudes, combined with quantitative surveys and qualitative interviews. The framework incorporated constructs such as perceived usefulness, perceived ease of use, trust, and security, drawing from the Technology Acceptance Model (TAM) and extending it to include factors relevant to the Nigerian context. The findings highlighted the importance of trust and security in driving adoption, providing a comprehensive understanding of consumer behaviour in the mobile payment landscape.

In another study, Eze et al. (2019) proposed a framework focusing on security and privacy concerns as critical determinants of mobile payment adoption in Nigeria. The researchers used a quantitative methodology, administering structured questionnaires to a sample of Nigerian consumers. The study integrated elements from the M-Adoption Model and the Privacy Calculus Theory, analyzing how security and privacy concerns impact consumer trust and adoption decisions. The results emphasized that addressing privacy and security issues is crucial for increasing mobile payment adoption.

Adesina and Ayo (2018) proposed a framework to investigate the role of trust and privacy in mobile payment adoption. The researchers used a mixed-method approach, combining quantitative survey data with qualitative insights from focus groups. The study incorporated constructs from the M-Adoption Model and extended them to address specific trust and privacy issues relevant to Nigerian consumers. The framework found that building consumer trust and addressing privacy concerns is essential for increasing mobile payment adoption.

3. PROPOSED MODEL

The M-Payment Adoption Model incorporates several important variables that affect consumers' choices

regarding mobile payments. To illustrate this paradigm, a framework with trust, security, and privacy as its main pillars and other elements like ease of use, usefulness, social influence, and facilitating conditions surrounding them can be used. The "M-payment Adoption Model," as provided by Figure 1, outlines the elements linked to consumer trust in m-payment systems while also theorizing the importance of trust in m-payment system adoption intentions.

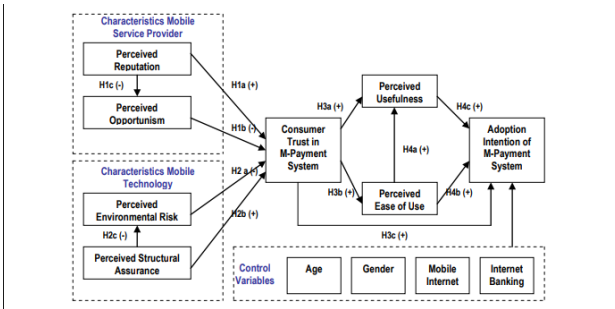

Figure 1. M-Payment Adoption Research Model

These variables interact dynamically to promote or inhibit consumer adoption of mobile payment technologies in Nigeria. Additionally, factors such as perceived ease of use, perceived usefulness, social influence, and the availability of facilitating conditions, as highlighted by established theoretical models like TAM and UTAUT, complement the core elements of trust, security, and privacy. For mobile payments to achieve widespread adoption in Nigeria, service providers must address these concerns through robust technological solutions and transparent communication strategies.

1. Trust as a Core Factor

Trust is a crucial determinant of mobile payment adoption globally and in Nigeria. According to McKnight and Chervany (2002), trust is critical in consumer decision-making, particularly in online and mobile environments. In this model, trust is viewed as multi-dimensional:

- **Institutional Trust**: Trust in financial institutions, mobile service providers, and fintech companies is essential. Nigerian consumers are influenced by the reputation and credibility of these institutions, especially given the prevalence of fraud in the financial sector (Oye et al., 2011).
- **Technology Trust**: Trust in the technology itself—i.e., confidence in the platform's ability to process payments securely and efficiently—is crucial. In Nigeria, technical failures or glitches can quickly erode consumer trust, making technology reliability essential (Gefen et al., 2003).
- **Interpersonal Trust**: Many Nigerian consumers rely on peer recommendations and word-of-mouth before adopting new technologies. Social trust influences adoption behaviours in Nigeria, consistent with studies on the role of interpersonal trust in mobile payments (Pavlou, 2003).

2. Security Concerns

Security is a top concern for Nigerian consumers when considering mobile payments. According to Kim, Shin, and Lee (2009), perceived security and the extent to which consumers believe their financial information is protected play a pivotal role in M obile payment adoption decisions. The M-payment adoption model incorporates:

- **Perceived Security:** Nigerian consumers are particularly concerned about cybercrime and fraud. Mobile payment systems with robust security features like encryption and biometric authentication are more likely to be trusted (Lee, 2009).
- **Fraud Prevention Features**: Visible security measures, like two-factor authentication, play a significant role in consumer confidence. Previous studies have shown that these features help mitigate fears of fraud and enhance security perceptions, facilitating adoption (Beldad et al., 2010).

3. Privacy Concerns

Privacy is a significant factor in mobile payment adoption, particularly in countries where data protection regulations are still developing, like Nigeria. As Dinev and Hart (2006) explain, privacy concerns- fears about the misuse of personal and financial data—can significantly inhibit adoption. The M-payment adoption model integrates privacy concerns through:

- **Perceived Privacy Risk:** Nigerian consumers must know how mobile payment providers handle their data. This concern is amplified when data breaches and unauthorized data sharing are prevalent (Xu et al., 2008).
- **Privacy Policies and Consumer Confidence:** Transparent and comprehensive privacy policies are necessary to alleviate consumer concerns. Clear communication of how personal data is collected and used can significantly increase consumer trust and willingness to adopt mobile payments (Smith et al., 1996).

Other factors included in the M-payment adoption model are derived from established theories like the **Technology Acceptance Model (TAM)** and the **Unified Theory of Acceptance and Use of Technology (UTAUT)**:

- **Perceived Ease of Use**: According to Davis (1989), the ease with which consumers can use a system is a significant driver of technology adoption. In the Nigerian context, mobile payment systems need to be simple and user-friendly to gain widespread acceptance.
- **Perceived Usefulness**: Consumers must perceive mobile payments as offering advantages over traditional payment methods. This is particularly important in Nigeria, where mobile payments can facilitate financial inclusion for underbanked populations (Rogers, 1962).
- **Social Influence**: Venkatesh et al. (2003) highlight the role of social influence in technology adoption. In Nigeria, consumer decisions are often influenced by peers and family members, with a preference for technologies that are trusted within their social circles.
- **Facilitating Conditions**: The availability of infrastructure and customer support is critical. In Nigeria, where mobile network coverage and internet access can be unreliable, the availability of facilitating conditions can significantly impact adoption rates (Ayo, Oni, Adewoye, & Eweoya, 2010).

4. CONCLUSION

The adoption of mobile payment systems in Nigeria significantly depends on consumers' perceptions of trust, security, and privacy. The proposed M-Payment Adoption Model emphasizes the pivotal role of these factors in driving consumer decisions. Trust, whether in institutions, technology, or interpersonal relationships, emerges as a cornerstone for adoption, while security concerns related to fraud and data protection are critical in shaping consumer confidence. Privacy issues influence adoption behavior, particularly in data handling and regulatory frameworks. Ultimately, the successful adoption of mobile payment systems in Nigeria hinges on creating an ecosystem where consumers feel secure, informed, and confident in using digital financial services. The model provides a thorough understanding of the interplay of critical factors in driving mobile payment adoption, offering insights for researchers and industry stakeholders seeking to improve mobile payment services in Nigeria.

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