Behavioral Determinants of Mobile Phone Payment System Adoption in Tanzania: An Extended Technology Acceptance Model Approach

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ABSTRACT
This study investigates the behavioral determinants of Mobile Phone Payment System (MPPS) adoption in Tanzania using the Technology Acceptance Model (TAM). Results from a survey of 260 respondents indicate that perceived ease of use (PEoU) is the strongest predictor of adoption, followed by service quality, perceived usefulness (PU), and information quality. Nonetheless, barriers such as high transaction costs, limited user competence, trust concerns, and cultural preference for cash constrain widespread utilization. Adoption decisions were also found to be shaped by partner and community practices, underscoring the role of network externalities. The study recommends enhancing digital literacy and user training to reduce technological anxiety, improving service reliability and customer support to build confidence, and introducing transparent, flexible pricing models to address cost sensitivity. Additionally, robust regulatory frameworks promoting interoperability, consumer protection, and cybersecurity are essential. These measures will foster greater trust, inclusivity, and sustainable growth of Tanzania's digital financial ecosystem.

General Terms
Information Systems, Mobile Payments, Technology Acceptance, Digital Finance, Behavioral Adoption Models.

Keywords
Mobile Phone Payment Systems (MPPS), Technology Acceptance Model (TAM).

1. INTRODUCTION
Innovations in Information and Communication Technologies (ICTs) have dramatically reshaped financial transactions globally, fostering efficiency, reducing costs, and advancing financial inclusion especially in developing economies through mobile platforms that enable a shift toward cash-lite societies [1][2][3]. Mobile Phone Payment Systems (MPPS) are central to this transformation, facilitating complex financial activities like utility payments, airtime purchases, electronic cash transfers, microloans, and cash withdrawals, thereby underpinning socio-economic development in regions with limited formal banking infrastructure [4][5].

Tanzania offers a compelling empirical context for this study. As of early 2025, mobile money subscriptions soared from 32.27 million in 2020 to 61.88 million in 2024 marking roughly a 92% increase over four years [6]. By June 2024, telecom subscriptions reached 76.6 million exceeding the population and mobile money accounts totaled 55.7 million, reflecting significant quarterly growth; concurrently, transaction value surged from TZS 129.4 trillion in 2019 to TZS 309.6 trillion in 2023 a 139% increase [7][8]. Despite impressive macro-level metrics, utilization remains uneven: average transactions per subscriber declined from 117 in 2019 to 100 in 2023, even as the agent network expanded and major providers continued dominating the market [7][8].

The paradox of broad availability paired with sporadic usage suggests that infrastructural access alone does not explain adoption dynamics. Behavioral and perceptual factors such as perceived ease of use (PEOU), perceived usefulness (PU), service quality, information clarity, trust, and perceived risk play a defining role. This aligns with empirical findings across sub-Saharan Africa where recognition of PU, trust, and perceived risk are key determinants in mobile money adoption [9]. Globally, research citing extended TAM frameworks highlights the importance of social influence, security perception, trust, and perceived usefulness as critical variables in mobile payment contexts [10][11].

Recent Tanzanian studies further reinforce this perspective. An empirical analysis of QR-code–enabled payments found that PU, confirmation, and ease of use significantly impact user attitude and satisfaction, with trust and perceived risk influencing continuance intention [12]. Another 2024 study confirmed that PU, PEOU, security, cost, trust, and social influence strongly affect e-payment uptake in Tanzania [13]. Broader research in SSA indicates that mobile money adoption improves household welfare, payments, and financial resilience [14], while mobile wallet formalism is maturing raising critical questions about adoption barriers beyond infrastructure alone [15]. Moreover, user-agent dynamics in Tanzania's mobile money system reveal informal workarounds that introduce both usability benefits and systemic risks, indicating complexity beyond the individual-user interface [16].

Collectively, these insights highlight a conceptual void: while macroeconomic assessments abound, there remains limited application of behavioral frameworks such as TAM to interrogate micro-level determinants of MPPS adoption in Tanzania. Understanding why users fail to fully integrate available services into daily practices despite clear economic benefits and widespread infrastructure requires this lens.

This study, therefore, applies the Technology Acceptance Model to examine adoption of MPPS in Tanzania, focusing on the roles of perceived usefulness, perceived ease of use, service quality, trust, information clarity, and perceived risk. It aims to illuminate how these behavioral dimensions shape adoption in a context of near-universal availability but inconsistent utilization. By contextualizing and potentially extending TAM within a developing-country high-growth mobile money ecosystem, the research seeks both to advance theoretical knowledge and yield actionable insights for policymakers,

regulators, and service providers. Ultimately, findings will inform strategies to deepen user trust, enhance service delivery, and strengthen Tanzania's digital financial landscape as a platform for inclusive economic transformation..

2. LITERATURE REVIEW

The diffusion of Mobile Phone Payment Systems (MPPS) has generated significant scholarly inquiry, particularly as these platforms redefine financial ecosystems in developing economies. The Technology Acceptance Model (TAM) provides the central theoretical lens through which user acceptance is examined, positing that perceived ease of use (PEOU) and perceived usefulness (PU) directly influence user attitudes and behavioral intentions [17]. Over time, refinements to TAM have integrated constructs such as trust, security perceptions, social influence, and service quality to capture the multifaceted realities of digital finance adoption [18][19]. These extensions enhance explanatory power in contexts where adoption is strongly shaped by user confidence, cultural norms, and infrastructural environments [20].

Globally, empirical evidence confirms TAM's enduring relevance in predicting mobile payment adoption. A systematic review of mobile payment studies published between 2020 and 2024 demonstrates that PU, PEOU, and trust consistently emerge as the strongest predictors of adoption, while perceived risk and transaction costs remain significant barriers [21]. Findings from Asian markets highlight the role of information quality in shaping adoption, particularly in digitally integrated economies such as South Korea and Singapore [22]. Similarly, European studies emphasize the influence of social norms and transparency on user confidence and adoption intentions [23]. Moreover, consumer trust and security perceptions continue to play a decisive role in determining continuance intention, particularly as fraudulent practices and hidden charges remain persistent global challenges [24].

Within Sub-Saharan Africa, mobile money is widely recognized as a catalyst for financial inclusion and socio-economic transformation. Comparative analyses demonstrate that mobile money adoption enhances household welfare, access to credit, and financial resilience [25]. Evidence from Ghana, Kenya, and Uganda indicates that agent network density, interoperability, and service reliability are critical drivers of trust and adoption [26][27]. Nonetheless, challenges of perceived risk, inconsistent service quality, and limited user awareness constrain deeper utilization across demographic segments [28]. Scholars therefore argue that while infrastructural and regulatory reforms have expanded access, behavioral and perceptual barriers remain underexplored, reinforcing TAM's relevance in explaining micro-level adoption determinants [29].

The Tanzanian context offers a striking illustration of this paradox. By mid-2024, mobile money accounts reached 55.7 million, with transactions valued at over TZS 309 trillion, reflecting the sector's macroeconomic significance [30]. However, adoption remains inconsistent, as average transactions per user have declined despite expansive agent networks and intense competition among providers. Empirical studies reveal that PU, PEOU, trust, and cost perceptions significantly predict adoption, while fraud risks and digital literacy gaps continue to limit intensive usage [31]. Research on QR-code–enabled payments demonstrates that confirmation, satisfaction, and trust strongly influence continuance intention, underscoring the importance of psychological and experiential variables in sustaining adoption [32]. Furthermore, policy reports reveal persistent queues at utility offices despite the availability of mobile platforms, suggesting gaps in user confidence and awareness [33][34]. These challenges highlight that barriers to adoption in Tanzania are less infrastructural and more behavioral, necessitating systematic application of TAM constructs to interrogate user-level dynamics.

Building on this, prior research underscores the centrality of perceived ease of use in shaping adoption. Davis [17] established that PEOU directly influences intention to use technology, and subsequent studies have shown that simple, user-friendly systems are more likely to be embraced in digital finance [21]. *Accordingly, this study hypothesizes that perceived ease of use has a significant positive relationship with the adoption and use of Mobile Phone Payment Systems (H1).* Similarly, perceived usefulness has been consistently linked to technology adoption. Tobin [35], in a study of rural Ghana, found that PU strongly influenced intention to use mobile services, while Davis [17] highlighted its role in shaping user behavior. Although Akturan and Tezcan [36] reported mixed effects, they confirmed its indirect impact through attitudes. *Thus, it is posited that perceived usefulness has a significant positive relationship with the adoption and use of Mobile Phone Payment Systems (H2).*

Beyond TAM's original constructs, service quality has also emerged as an important explanatory factor. While Wang and Lin [37] found limited direct effects, DeLone and McLean [38] recognized service quality as a central determinant of system success, with attributes such as responsiveness and reliability fostering user trust. *In this light, it is hypothesized that service quality has a significant positive relationship with the adoption and use of Mobile Phone Payment Systems (H3).* Finally, information quality, as articulated in the DeLone and McLean IS Success Model [38], influences system adoption through clarity, transparency, and accuracy of information provided. Studies show that higher-quality information reduces uncertainty and perceived risk, thereby increasing user confidence [22]. *Thus, this study hypothesizes that information quality has a significant positive relationship with the adoption and use of Mobile Phone Payment Systems (H4).*

From a scholarly standpoint, this integrated perspective underscores a critical conceptual and empirical gap. While Tanzanian and regional studies have primarily focused on macroeconomic outcomes of mobile money, few have systematically applied behavioral adoption models to explain user-level perceptions. Extending TAM to include service quality and information quality, alongside PEOU and PU, strengthens its predictive capacity in the Tanzanian context, where infrastructural availability alone has not translated into consistent adoption. Addressing these gaps is therefore essential in explaining micro-level determinants of MPPS adoption and use in Tanzania..

3. METHODOLOGY

This section outlines the methodological procedures adopted to investigate the acceptance of Mobile Phone Payment Systems (MPPS) in Tanzania using the Technology Acceptance Model (TAM) as the guiding framework

This study employed a quantitative research design grounded in the Technology Acceptance Model (TAM) framework to examine the determinants of acceptance of Mobile Phone Payment Systems (MPPS) in Tanzania. The quantitative approach was considered appropriate as it allows for the systematic testing of hypothesized relationships among constructs, thereby providing statistical evidence on behavioral intentions and adoption patterns [37].

Data for the study were collected through a structured survey conducted across Tanzania's central business districts and residential areas of Mwanza, Dar es Salaam, Arusha, Dodoma, and Mbeya. These locations were selected purposively to capture a heterogeneous population comprising urban and semi-urban users of MPPS, thus ensuring broader representativeness of the sample. The survey method was deemed suitable as it enables a quantitative description of attitudes, experiences, and opinions of the target population in relation to mobile payment systems [39].

The measurement items used in the survey instrument were adapted from prior validated studies on technology adoption [40][41][42][43]. Items were modified to reflect the contextual realities of Tanzania, including widespread use of MPPS for utility bill payment, airtime recharge, and peer-to-peer transfers. Each construct in the TAM perceived ease of use, perceived usefulness, behavioral intention, and actual usage was measured using multiple items on a five-point Likert scale ranging from "strongly disagree" (1) to "strongly agree" (5). Additional constructs, including trust, service quality, information quality, and perceived risk, were incorporated to extend the explanatory power of the model. Demographic factors such as education level and monthly income were included as potential moderating variables given their influence on digital finance adoption in prior research [44].

The questionnaire was subjected to a rigorous pretesting and refinement process. An initial pretest was conducted with ten postgraduate students, one senior lecturer in information systems, and two information systems research experts. Their feedback informed refinements to question phrasing, survey instructions, and construct operationalization, ensuring content validity and clarity. A subsequent pilot test further enhanced reliability by addressing ambiguities and redundancies in the instrument.

The final instrument was administered to a target sample of 468 respondents who were identified based on their awareness and/or engagement in mobile payment transactions. Of the distributed questionnaires, 260 were returned fully completed and deemed usable after careful screening for plausibility, integrity, and completeness. To complement the survey data, random follow-up interviews were conducted with a subset of respondents to capture nuanced perspectives. The qualitative insights from these interviews were subsequently integrated into the discussion section to enrich interpretation of the quantitative findings.

Data analysis was conducted using both descriptive and inferential statistical techniques. Descriptive statistics were employed to summarize the demographic and behavioral characteristics of respondents, while inferential analysis focused on testing the hypothesized relationships within the extended TAM framework. Multiple linear regression models were utilized to assess the influence of independent variables such as perceived usefulness, ease of use, trust, service quality, and perceived risk on behavioral intention and actual usage of MPPS. The application of multivariate techniques was critical in improving robustness by reducing exposure to misinterpretations that could arise from simple bivariate analyses [45]. All analyses were performed using SPSS and AMOS software packages to allow for both regression and structural model estimation.

4. FINDINGS

4.1 Demographic data

As presented in table 1, the demographic profile of the respondents provides important insights into the adoption dynamics of Mobile Phone Payment Systems (MPPS) in Tanzania. The findings reveal that the gender distribution of respondents is relatively balanced, with males representing 55 percent and females 45 percent, suggesting that both genders are significantly involved in the use of mobile phone payment systems (MPPS). In terms of education, the majority of respondents are fairly well educated, with university graduates accounting for 38 percent and vocational or diploma holders 32 percent, compared to 18 percent with secondary education and 12 percent with only primary education. This indicates that higher education levels are strongly associated with greater adoption and use of MPPS, likely due to increased exposure to technology and digital financial services.

The income distribution shows that most respondents earn between TZS 100,000 and 2,000,000 per month, with 31 percent in the 100,000–500,000 range and 27 percent in the 1,000,000–2,000,000 range. Only a small proportion (13 percent) report incomes above TZS 4,000,000, which highlights that MPPS are not limited to higher-income groups but are widely embraced by low- and middle-income earners, demonstrating their inclusivity and role in bridging financial access gaps.

Experience levels with MPPS are also high, with nearly half of the respondents (46 percent) having between 6 and 10 years of usage, while 35 percent have used them for more than 11 years. This finding suggests that mobile payment platforms are well-established and trusted, reflecting long-term adoption rather than being perceived as a new innovation. Finally, airtime recharging habits show that while scratch vouchers remain slightly more common at 44 percent, mobile payment services account for 42 percent, indicating a strong transition toward digital recharges. The relatively low reliance on vendor-based recharges (13 percent) further reinforces the shift toward convenience-driven mobile solutions. Overall, the data suggests that MPPS have become a mainstream financial tool across gender, education, and income categories, with a clear trend toward sustained and digitally integrated usage.

Table 1. Demographic data

Variable	Frequency	Percentage
Gender		
Male	142	55
Female	118	45
Level of education		
Primary	32	12
Secondary	47	18
Vocational/Diploma	83	32
University	98	38
Income Per Month		
100,000 – 500,000	81	31
500,000 – 1,000,000	50	19
1,000,000 – 2,000,000	71	27
2,000,000 – 4,000,000	23	9
4,000,000 +	35	13
Experience with MPPS (years)		
1 – 5 years	49	19
6 – 10 years	119	46
11 + years	92	35
Recharging airtime		
Using scratch voucher	115	44
Recharge from vendor	35	13
Mobile payment services	110	42

4.2 Measurement Model

The hypothesized model for this study comprised five constructs: Adoption and Use (AU), Perceived Ease of Use (PEoU), Perceived Usefulness (PU), Service Quality (SVQ), and Information System Quality (IQ). Prior to hypothesis testing, the measurement items were subjected to rigorous content and construct validity assessments to ensure the reliability and accuracy of the scales.

Content validity was established through an extensive review of prior studies, whereby measurement items were adapted from previously validated research on technology acceptance and information system quality [37,38,9,40,41,42,43]. To further refine the questionnaire, a pre-testing procedure was conducted to check clarity, appropriateness, and contextual alignment of the items with the Tanzanian mobile payment environment. Feedback from the pre-test informed minor modifications to survey instructions and rephrasing of selected items.

Construct validity was assessed using principal component analysis (PCA) with varimax rotation. Items were retained based on three criteria: (i) factor loadings of 0.50 or greater were accepted; (ii) items with loadings below 0.50 were eliminated; and (iii) items with loadings of 0.50 or greater on multiple components were excluded to avoid cross-loading issues. The results of the PCA, along with the reliability assessment, are presented in Table 3.

Reliability was examined using Cronbach's alpha, with all constructs demonstrating values above the 0.70 threshold, thereby confirming internal consistency of the measures [44][45]. Furthermore, the average variance extracted (AVE) values for all constructs exceeded the recommended cut-off of 0.50, and the factor loadings of all items were greater than 0.50. These results provided strong evidence of convergent validity, confirming that the items effectively measured the intended latent constructs [46]

Table 3: Reliability test

Constructs	Mean	SD	AVE	Composite reliability	Cronbach's Alpha
AU	3.543	0.774	0.6	0.739	0.748
PEoU	4.358	0.403	0.716	0.967	0.844
PU	4.543	0.502	0.942	0.749	0.726
SVQ	4.899	0.609	0.609	0.728	0.932
IQ	4.324	0.696	0.695	0.855	0.706

Table 4: Factor loadings

Construct	Item	Loading	t-statistics
Adoption and use	AU1	0.771	27.8
	AU2	0.785	35.3
	AU3	0.806	40.7
	AU4	0.707	36.2
	AU5	0.813	41.7
	AU6	0.742	23
	AU7	0.703	24.8
	AU8	0.691	22.2
Perceived ease of use	PEoU1	0.923	84.6
	PEoU2	0.801	29.5
	PEoU3	0.602	22
	PEoU4	0.857	41.2
	PEoU5	0.765	37.6
	PEoU6	0.798	39.1
Perceived usefulness	PU1	0.679	19.8
	PU2	0.756	36.2
	PU3	0.601	25.9
	PU4	0.671	29.1
	PU5	0.714	41
Service quality	SVQ1	0.693	33.4
	SVQ2	0.61	32
	SVQ3	0.9	67.3
	SVQ4	0.777	55.2
	SVQ5	0.753	50.2
Information quality	IQ1	0.613	29.1
	IQ2	0.699	31.8
	IQ3	0.884	49.6
	IQ4	0.782	53

4.3 Regression Analysis

Regression analysis was employed to test the hypothesized relationships within the study model. The results, presented in Tables IV, V, and VI, indicate that the overall research model was well supported, with the independent constructs demonstrating positive correlations and accounting for an explained variance of R = 54.2%. All four control measures in the model were statistically significant, with Perceived Ease of Use (PEoU) emerging as the strongest predictor of adoption and use, recording the highest beta value ($\beta = .526$, $p < 0.01$).

The results further confirm the statistical significance of the proposed model and provide substantial empirical support for the hypotheses (H1–H4). Specifically, the first hypothesis

(H1), which proposed a positive relationship between perceived ease of use and adoption and use of mobile phone payment systems, was strongly supported at the $p < 0.01$ level. Similarly, the second hypothesis (H2), concerning the effect of perceived usefulness on adoption and use, was also significantly supported at the $p < 0.01$ level. The third (H3) and fourth (H4) hypotheses, relating to service quality and information system quality respectively, were likewise supported with strong significance at $p < 0.01$.

Table 5: Model summary

			Change statistics						
Model	R	R Square	Adjusted R Square	SE	R Square Change	F Change	df1	df2	Sig. F Change
1	0.548	0.3	0.188	0.7291	0.12	8.62	4	255	0

a. Predictors: (Constant), IQ, PEoU, PU, SVQ

Table 6: ANOVA b

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	18.52	4	4.63	8.62	0
	Residual	137.21	255	0.538		
	Total	155.73	259			

a. Predictors: (Constant), IQ, PEoU, PU, SVQ
b. Dependent variable. AU

Table 7: Coefficients a

		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	0.472	0.481		0.582	0.004
	PEoU	0.526	0.118	0.57	2.81	0.006
	PU	0.49	0.108	0.498	2.74	0.007
	SVQ	0.505	0.092	0.562	2.25	0.002
	IQ	0.374	0.089	0.455	1.93	0.006

Dependent variable: AU

These findings provide compelling statistical evidence that the adoption and use of mobile phone payment systems in Tanzania are significantly shaped by users' perceptions of ease of use, usefulness, service quality, and information system quality. Collectively, the regression outcomes underscore the robustness of the extended Technology Acceptance Model (TAM) in explaining behavioral intentions and actual usage of digital financial services in the Tanzanian context.

5. DISCUSSION OF FINDINGS

The findings of this study confirm that perceived ease of use (PEoU) was the strongest determinant of adoption of mobile phone payment systems (MPPS) in Tanzania. This indicates that users prioritize simplicity, convenience, and minimal effort in learning when adopting mobile-based financial solutions. The result resonates with recent studies in developing economies, where ease of navigation and reduced complexity have been shown to accelerate digital service uptake [47]. Given that a significant proportion of respondents possessed tertiary education, their digital literacy may have contributed to greater confidence in operating MPPS without requiring continuous support [48]. On the other hand, perceived usefulness (PU), although statistically significant, demonstrated a weaker impact compared to ease of use. This contrasts with global studies which emphasize PU as the central driver of technology adoption. For example, [49] stressed that strategic perception of usefulness drives adoption, yet in Tanzania, factors such as transaction fees, agent limitations, and consumer trust appear to diminish the strength of PU in shaping behavioral intention. Similar evidence from Sub-Saharan Africa suggests that inconsistent service delivery and high costs often reduce users' appreciation of mobile financial innovations [50].

The results also show that service quality strongly influences adoption, with respondents valuing secure, reliable, and responsive platforms. This finding aligns with global evidence that emphasizes service responsiveness as a key determinant of sustained user engagement [51]. Studies in Kenya and Rwanda have similarly shown that consistent quality in mobile financial services increases satisfaction and long-term adoption [52]. In Tanzania, this implies that providers must prioritize reliable systems and effective customer support to build stronger consumer trust and loyalty.

Another critical observation from the findings is the interdependence of adoption decisions among stakeholders. Some respondents resisted using MPPS because their business partners had not yet adopted the technology, reflecting network externality effects where the value of adoption increases as more actors within a community or trading network participate. [53] highlighted that the success of mobile payments depends heavily on multi-stakeholder participation, and similar conclusions have been drawn in recent African studies stressing the importance of peer influence and collective trust in digital finance adoption [53,54]. Trading partners, particularly educated or digitally literate ones, were reported to influence perceptions of usefulness, consistent with [55] argument that adoption of e-commerce is often partner-driven. This highlights the role of informal networks in shaping acceptance of MPPS, especially in Tanzania's cash-dominated economy.

Despite the theoretical importance of PEoU, practical challenges were evident. Many merchants lacked competence in confidently operating MPPS, often making errors that reduced consumer trust. This finding aligns with research that shows technological anxiety and poor user training are barriers

to adoption in low-income contexts [56]. Poor first experiences, such as failed transactions or input mistakes, discouraged users and undermined long-term acceptance—consistent with studies emphasizing the critical role of initial trust in technology adoption [57].

The study also highlights that transaction costs remain a significant barrier. While MPPS are positioned as cost-saving alternatives to debit cards, Tanzanian users did not perceive the marginal cost reductions as sufficient to drive widespread adoption. Instead, many still preferred cash payments, citing cultural familiarity and the avoidance of additional fees. IFC (2024) similarly reported that Tanzanian consumers continue to favor cash over digital platforms due to fee sensitivity and lack of confidence in mobile financial ecosystems [58]. Moreover, banks still dominate the financial landscape, controlling transaction charges while simultaneously offering mobile services. Their dual role as partners and competitors complicates the adoption environment for MPPS, reflecting institutional challenges also noted in East African financial ecosystems [59].

Taken together, the findings suggest that while ease of use and service quality strongly influence adoption, broader systemic challenges such as stakeholder interdependence, inconsistent user competence, and cost structures continue to hinder the widespread acceptance of MPPS in Tanzania. This highlights the need for targeted policy interventions, stronger consumer education, and collaborative strategies between banks, service providers, and government institutions to foster a more inclusive mobile payment environment.

6. CONCLUSION

This study examined the acceptance of Mobile Phone Payment Systems (MPPS) in Tanzania through the Technology Acceptance Model (TAM). Findings establish perceived ease of use as the most influential determinant of adoption, highlighting the primacy of simplicity, convenience, and low cognitive effort in shaping user behavior. While perceived usefulness, service quality, and information quality also contribute positively, their comparatively weaker effects reflect persistent frictions—limited user competence, variable service reliability, fee sensitivity, and enduring cash preferences—that blunt otherwise strong infrastructural gains.

At the ecosystem level, adoption proved socially interdependent rather than purely individual. Network externalities—signals from business partners, peers, and trading communities—amplify or suppress willingness to use MPPS, with trust, interoperability, and agent performance acting as visible cues of reliability. Consequently, technical upgrades alone are insufficient; sustained progress requires synchronized actions by providers, regulators, and market intermediaries to stabilize service, improve dispute resolution and customer support, and implement transparent, inclusive pricing models that reduce perceived and actual costs for low-value transactions.

Future work should deepen and extend the model by integrating constructs that capture evolving realities: digital and financial literacy, cultural norms, perceived value, and security innovations (e.g., biometrics and AI-driven fraud monitoring). Longitudinal and sector-comparative designs can track how perceptions shift as policy reforms and interoperability mature, while focused studies on underserved populations (rural users, women, informal traders) can inform targeted inclusion strategies. Evaluations of regulatory interventions and provider-led experiments—fee waivers, tiered pricing, agent quality standards, in-app tutorials—will generate actionable evidence. Taken together, a user-centric, evidence-based agenda can convert broad access into confident, habitual use, advancing a more inclusive and trusted digital finance landscape in Tanzania.

6.1 Recommendations

Based on the findings of this study, several strategic measures are necessary to enhance the adoption, reliability, and security of mobile phone payment systems (MPPS) in Tanzania.

6.1.1 Enhance User Training and Digital Literacy

Service providers should invest in continuous user education campaigns, both face-to-face and digital, to address technological anxiety and improve competence in using MPPS. Simplified tutorials embedded in applications could help minimize transaction errors.

6.1.2 Improve Service Reliability and Customer Support

Providers must prioritize system stability, transaction speed, and responsive support services to build user confidence. Establishing reliable agent networks, especially in rural areas, would help ensure accessibility and trust.

6.1.3 Address Transaction Costs Transparently

Regulators and service providers should collaborate to review and standardize transaction charges. Introducing flexible and transparent pricing models, including fee waivers for small-value payments, could encourage broader usage.

6.1.4 Strengthen Policy and Regulatory Frameworks

The government, through the Bank of Tanzania and related agencies, should establish policies that safeguard consumer interests, regulate transaction fees, and promote interoperability among different service providers to ensure inclusivity.

6.1.5 Strengthen Fraud Prevention and Cybersecurity Measures

With the increasing prevalence of online theft and mobile-based fraud, it is critical for providers to invest in advanced security features such as multi-factor authentication, biometric verification, and AI-driven fraud detection. Public awareness campaigns should emphasize safe digital financial practices, while regulators should enforce strict compliance on cybersecurity standards to reduce vulnerabilities in mobile payment system.

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