



## Exploring factors limiting adoption of mobile-based savings service: A case study of M-Pesa, Meru district, Tanzania

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### Abstract

This research explored the factors that hinder the use of M-Pawa mobile savings services among M-Pesa users in Meru and Arusha, Tanzania, employing a quantitative methodology with a sample of 196 participants. Despite 89.8% of users being aware of M-Pawa, only 25.5% were actively utilizing it, with the majority opting for traditional banks or informal savings alternatives. Major obstacles to adoption were identified, including elevated transaction fees (69.9% agreement), concerns about trust and security (66.4%), restrictive withdrawal limits (67.0%), and inadequate financial literacy (56.9%). Age played a significant role in adoption patterns, with individuals aged 50-70 exhibiting particular hesitance due to a lack of familiarity with technology. The study's conclusions indicate that the challenges of adopting mobile savings extend beyond simple awareness of the service. Recommendations for practical interventions include restructuring fees, improving security protocols, implementing targeted financial education initiatives, and designing user-friendly services to foster M-Pawa adoption. These findings provide essential insights for mobile network operators and policymakers focused on enhancing digital financial inclusion in Tanzania and comparable emerging markets.

**Keywords:** Mobile money, digital savings, financial inclusion, M-Pesa, M-pawa, adoption barriers

### Introduction

In recent years, mobile money services have revolutionized how people access financial systems, particularly in regions where traditional banking remains limited. Globally, mobile money has been hailed as a transformative tool for promoting financial inclusion in low- and middle-income countries (Donovan, 2012<sup>[5]</sup>; Jack & Suri, 2011)<sup>[8]</sup>. In Sub-Saharan Africa, mobile money usage is the highest in the world, accounting for 70% of global transactions by volume. In these regions, mobile platforms are not just supplements to traditional banking they have become primary access points for financial services (Aker & Mbiti, 2010<sup>[1]</sup>; Morawczynski, 2009)<sup>[17]</sup>. East Africa, in particular, stands out due to the success of M-Pesa, a mobile financial service initially launched in Kenya and later replicated across the region. M-Pesa's design allows users to perform financial transactions using even basic mobile phones, overcoming the limitations of physical bank infrastructure (Hughes & Lonie, 2007<sup>[7]</sup>; Mas & Radcliffe, 2011)<sup>[14]</sup>.

In Tanzania, where over 60% of the population resides in rural areas, the reliance on mobile financial platforms is especially pronounced. These services have become essential for bridging financial gaps caused by the sparse distribution of banks and microfinance institutions (Suri & Jack, 2016; Mbiti & Weil, 2013)<sup>[16]</sup>. Tanzanian mobile money adoption has grown significantly, with M-Pesa becoming a dominant financial tool that enables users to send money, pay bills, and buy goods digitally. Despite this widespread use, more sophisticated services like mobile savings through Mpawa have seen much lower adoption rates (Makene, 2022<sup>[12]</sup>; Rwehumbiza, 2021).

Mpawa, offered through M-Pesa in partnership with a commercial bank, allows users to save and access microloans via their mobile phones. Yet, the platform's uptake remains limited, especially when compared to basic money transfer features (Musa, 2020<sup>[19]</sup>; Kashaga, 2023)<sup>[10]</sup>. This mismatch raises key questions about the barriers

preventing users from transitioning from basic mobile money usage to digital savings services. Although mobile savings can foster financial discipline and resilience, they remain underutilized by the same users who actively send and receive money through mobile platforms (Njau, 2022<sup>[20]</sup>; Maenda, 2022).

Furthermore, many Tanzanians continue to depend on informal savings practices, such as storing cash or participating in rotating savings groups like *vikoba*. This behavior reflects a lack of trust in formal institutions and a perception that digital savings tools are either unreliable or inaccessible (Mchomvu, 2023; Sanga, 2022). Despite the availability of platforms like Mpawa, most research in Tanzania has centered on mobile money transfers or access to credit, leaving savings behavior underexplored. This gap is significant because understanding savings behavior could unlock the full potential of mobile financial services in supporting economic development (Mbatia, 2020<sup>[15]</sup>; Maleko, 2023). This study focuses on Mpawa's limited adoption among active M-Pesa users in Tanzania, aiming to explore behavioral, technological, and socio-cultural barriers. By studying users who already engage with mobile money but avoid mobile savings, the research can reveal nuanced insights about service design and user perception

### Methodology

The research conducted in the Meru District in Arusha region of Tanzania where there many M-Pesa users who can utilize Mpawa for mobile savings options. A quantitative research approach was adopted to investigate the factors that hinder the adoption of these services. Initially, purposive sampling was employed to select only M-Pesa users, followed by simple random sampling to ensure statistical reliability. Data was gathered through structured questionnaires containing closed-ended and Likert scale questions to assess perceptions, obstacles, and adoption rates. Key factors such as technological challenges,

economic limitations, social influences, and levels of financial literacy were analyzed. A sample size of 196 participants was determined using the finite population formula, ensuring a 95% confidence interval and a 5% margin of error. The data collected was analyzed through descriptive and inferential statistical methods, utilizing software like Stata and SPSS. Descriptive statistics (for instance, mean and frequency distributions) were employed to summarize the demographic characteristics of respondents and their adoption rates, while inferential statistics (including Likert scale) was used to explore the relationships between mobile savings service adoption and key factors such as trust, limited withdraw amounts, and transaction costs. For the Likert scale responses, the answers were numerically coded (for example, 1 = Strongly Disagree and 4 = Strongly Agree) to quantify respondents' views on various elements influencing the adoption of mobile savings. This data was subsequently analyzed using mean scores and standard deviations to uncover trends in participants' attitudes toward mobile savings services. Furthermore, factor analysis was performed to cluster related variables and identify underlying factors that impact adoption. Liker scale analysis was utilized to explore the connection between these factors and the propensity to adopt mobile savings services, offering insights into which variables most significantly affected users' choices. The study seeks to pinpoint adoption barriers and suggest ways to enhance mobile savings services in Tanzania.

**Findings and discussion**

**Age**

The results of this research demonstrated that age had a significant impact on the acceptance of mobile savings services like Mpawa. Among participants aged 50 to 70, who represented 33% of the sample, over 60% expressed disagreement or strong disagreement with statements endorsing the adoption of mobile savings, primarily due to trust issues, security concerns, and limited financial literacy. In contrast, 46.6% of users between 18 and 39 exhibited greater acceptance, with more than 70% agreeing or strongly agreeing that mobile savings were both accessible and advantageous. These findings indicated that older individuals were more hesitant to embrace digital financial services, pointing to the necessity for targeted education and simplified service designs aimed at encouraging adoption. This aligns with the research by Makurumidze et al. (2021) [13], which found that age and digital literacy significantly influenced mobile banking adoption, as younger individuals were more inclined to use mobile financial platforms due to greater confidence and familiarity with technology.

**Table 1: Age**

Age Group	Number of Respondents	Percentage of Total
18–29 years	38	21.6%
30–39 years	44	25.0%
40–49 years	36	20.5%
50–59 years	34	19.3%
60–70 years	24	13.6%
Total	176	100%

**Usage of Vodacom Network and M-pesa**

The research indicated that all participants (100%, n = 196) actively utilize the Vodacom network, with 100% also acknowledging their use of M-Pesa, which demonstrates

complete penetration of Vodacom's mobile money service within the studied group. This notable level of M-Pesa usage showcases the significant integration of mobile financial services in users' everyday activities. However, this starkly contrasts with the adoption of M-Pawa Vodacom's mobile savings service implying that accessibility and knowledge of the mobile money ecosystem are not the primary barriers. This finding aligns with the GSMA (2023), which noted that Tanzania is among the top countries globally for mobile money usage, with M-Pesa being the leading platform. Nonetheless, it also highlighted that mobile savings and credit offerings are underperforming due to issues related to behavior and trust.

**Table 2: Usage of Vodacom Network and M-pesa**

Category	Sub-category / Response Option	Frequency	Percentage
Do you use Vodacom Network?	Yes	196	100.0%
	No	0	0.0%
	Total	196	100.0%
Do you use M-Pesa?	Yes	196	100.0%
	No	0	0.0%
	Total	196	100.0%

**M-pawa Awareness and Usage**

The research found that among 196 participants, 176 individuals (89.8%) were familiar with M-Pawa, whereas only 20 participants (10.2%) indicated that they were not aware of the service. This reflects a substantial level of awareness regarding the mobile financial platform within the surveyed population. Nevertheless, despite this high awareness, the findings also indicated a notable preference for traditional banking systems. In fact, 66.5% of the participants showed greater confidence in conventional banks compared to digital options like M-Pawa. This trend is consistent with observations made by Demirgüç-Kunt et al. (2018) [4], who noted that while mobile services have increased financial accessibility worldwide, the adoption of more sophisticated digital financial instruments, such as savings and credit, is frequently hindered by trust concerns and institutional biases. These findings underscore that although there is considerable awareness of M-Pawa, trust in traditional financial institutions continues to play a significant role in shaping the financial choices of participants.

**Table 3: Awareness of M-Pawa Service**

Response	Frequency	Percentage
Yes	176	89.8%
No	20	10.2%
Total	196	100%

**Key Factors Limiting M-Pawa Savings Service Adoption**

The research identified multiple significant obstacles that hinder the uptake of M-Pawa, a mobile savings solution provided through M-Pesa. Through an examination of responses gathered using a Likert scale, the study assessed the mean, median, standard deviation, and percentage agreement to gain insights into user attitudes toward M-Pawa. These results contribute to an understanding of the strength and uniformity of the barriers to adoption and indicate potential areas for enhancement.

**Table 4:** Key Factors Limiting M-Pawa Savings Service Adoption

Limiting Factor	Strongly Agree (4)	Agree (3)	Disagree (2)	Strongly Disagree (1)	Total	% Agree (SA+A)	% Disagree (D+SD)	Mean	Median	St. Dev
High Transaction Fees	78 (44.3%)	48 (27.3%)	36 (20.5%)	14 (8.0%)	176	69.9%	28.5%	3.08	3.0	0.96
Limited Withdrawal Amounts	62 (35.2%)	56 (31.8%)	42 (23.9%)	16 (9.1%)	176	67.0%	33.0%	2.93	3.0	1.00
Trust & Security Concerns	46 (26.1%)	71 (40.3%)	39 (22.2%)	20 (11.4%)	176	66.4%	33.6%	2.81	3.0	0.98
Limited Financial Literacy	33 (18.8%)	67 (38.1%)	51 (29.0%)	25 (14.2%)	176	56.9%	43.2%	2.61	3.0	0.97
Low or No Interest Earnings	25 (14.2%)	31 (17.6%)	62 (35.2%)	38 (21.6%)	176	31.8%	56.8%	2.36	2.0	1.01
Preference for Traditional Banks	62 (35.2%)	55 (31.3%)	20 (11.4%)	39 (22.2%)	176	66.5%	33.6%	2.79	3.0	1.12

**High Transaction Fees**

The research indicated that users’ foremost concern was the high transaction fees, with 69.9% of participants agreeing that these costs deter them from using M-Pawa. This conclusion is supported by the highest mean score of 3.08, a median of 3.0, and a low standard deviation of 0.96, suggesting a strong and uniform belief that these charges are a substantial obstacle. This suggests that lowering transaction fees or providing fee-free deposit options could promote greater usage of the service. Furthermore, studies conducted by mobile money specialists have shown that elevated transaction fees continue to pose a significant challenge to mobile money adoption in developing nations (Porteous, 2006) [21].

**Limited Withdrawal Amounts**

The research also revealed that the restricted withdrawal amounts represent another major hindrance to M-Pawa usage, with 67.0% of participants agreeing that this limitation affects their utilization of the service. The mean score of 2.93, a median of 3.0, and a standard deviation of 1.00 indicate that users typically view withdrawal restrictions as limiting, although opinions vary moderately. This suggests that providing increased flexibility in withdrawal amounts or enhancing communication about withdrawal limits could enhance user satisfaction and involvement. Prior studies on mobile financial services have also recognized withdrawal flexibility as a pivotal factor influencing mobile money adoption (Bourgoin, 2016) [2].

**Trust and Security Concerns**

The analysis found that issues related to trust and security were another significant deterrent, with 66.4% of respondents voicing concerns about the safety of digital savings platforms like M-Pawa. With a mean of 2.81, a median of 3.0, and a standard deviation of 0.98, these findings suggest that while security issues are not as prevalent as transaction fees, they are still widely recognized. Users are cautious about storing money on digital platforms mainly due to perceived risks such as fraud and account inaccessibility. Addressing these worries by improving security features and clearly communicating safety measures could boost user trust in M-Pawa. This aligns with broader mobile money research, which stresses the necessity of trust in the acceptance of mobile financial services (Donovan, 2012) [5].

**Limited Financial Literacy**

Limited financial literacy was identified as another barrier, with 56.9% of respondents agreeing that a lack of understanding influences their use of M-Pawa. The mean

score of 2.61, a median of 3.0, and a standard deviation of 0.97 indicate a moderate degree of concern, albeit with noticeable differences in opinion. This underscores the significance of focusing on user education initiatives, such as offering financial literacy programs or simplifying the app interface, to assist less experienced users in comprehending and navigating the service. Financial literacy has long been recognized as a vital component in the acceptance of digital financial services (Suri & Jack, 2016) [22].

**Low or No Interest Earnings**

The findings indicated that low or absent interest earnings were not a prominent barrier for the majority of users, with only 31.8% agreeing that it impacts their adoption of M-Pawa. A mean score of 2.36, a median of 2.0, and a standard deviation of 1.01 reflect a divided perspective on this matter. Although some users might appreciate interest earnings, most appear to prioritize the functionality, security, and accessibility that M-Pawa offers. This implies that providing interest incentives may be an additional benefit for long-term users rather than a main factor influencing adoption. Research focused on user preferences in mobile savings services supports this perspective, indicating that convenience frequently outweighs the significance of interest earnings in adoption choices (Aker & Mbiti, 2010) [1].

**Preference for Traditional Banks**

Finally, the research indicated that a preference for traditional banks remains a significant factor, with 66.5% of participants expressing more trust in conventional banking institutions compared to digital alternatives such as M-Pawa. The average score of 2.79, a median of 3.0, and the highest standard deviation of 1.12 among all variables imply considerable variation in viewpoints, with some users having greater confidence in traditional banks than in digital services, while others are more receptive to mobile options. This contrast highlights the necessity for enhanced integration between traditional banking and mobile financial services to facilitate user transitions and foster greater trust in digital platforms. This insight aligns with findings indicating that individuals in developing economies frequently favor traditional banks, even as the use of mobile money services continues to rise (Jack & Suri, 2011) [8].

**Conclusion and recommendations**

**Conclusion**

This study reveals significant barriers preventing M-Pesa users in Tanzania from adopting M-Pawa's mobile savings services, despite their active use of other M-Pesa features

like money transfers, bill payments, and airtime purchases. Key deterrents include high transaction fees, restrictive withdrawal limits, security concerns, low financial literacy, unattractive interest rates, and a strong preference for traditional banking particularly among older users who distrust digital savings. The findings demonstrate that while M-Pesa has successfully penetrated Tanzania's mobile money market, its savings product (M-Pawa) struggles to gain traction, even among tech-savvy users who regularly engage with other digital financial services. This disconnect suggests that convenience and accessibility alone are insufficient to drive adoption; instead, M-Pawa must address structural and behavioral barriers through lower costs, enhanced security, financial education, and incentives that make digital savings more appealing than informal alternatives. Without these reforms, Tanzania's progress toward full financial inclusion may remain uneven, with mobile money serving primarily for transactions rather than long-term financial growth.

### Recommendation

To boost adoption, stakeholders including Vodacom, financial institutions, and policymakers should implement targeted strategies. First, reducing transaction costs and increasing withdrawal flexibility could incentivize usage. Second, financial literacy campaigns and simplified user interfaces should be introduced, particularly for older and less tech-savvy individuals. Third, enhancing security measures and transparency in mobile savings operations can build user trust. Finally, integrating mobile savings with traditional banking systems may bridge the gap for users hesitant to fully transition to digital platforms. By addressing these barriers, Tanzania can accelerate financial inclusion, empowering individuals to leverage digital savings for long-term economic resilience.

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