Assessment of factors affecting mobile money transactions in Tanzania: A case of Yas agents in Dar es Salaam City Council, Dar es Salaam region

Fredrick Malisa[1]
Ahmed Kijazi[2]

[1]fe66ma@gmail.com
[2]ahmed.kijazi@cbe.ac.tz

[1,2]College of Business Education (CBE), Dar es Salaam Campus, Tanzania

https://doi.org/10.51867/ajernet.6.4.77

ABSTRACT

Tanzania's financial ecosystem has undergone significant transformation over the past two decades, driven by the rapid growth of digital financial services and financial technology. The innovation of mobile money services has played a crucial role in bringing financial services to previously underserved populations, especially in rural areas where large populations were unable to access formal financial services. Despite these efforts, there exist challenges that hinder the participation of the majority of people in mobile money transactions, hence contributing to the underutilization of the full potential of digital financial services and financial technology. This study aimed at assessing the factors affecting mobile money transactions in the country with a focus on Yas agents in Dar es Salaam City Council. It specifically investigated demographic characteristics that may influence participation in mobile money business and dwelled on the effects of inflation factors, financial factors, and multiple regulations on mobile money transactions. This research was guided by three theories: Friedman's Monetary Theory, the Financing Constraint Theory, and Agency Theory. Both quantitative and qualitative research methods were used in this study. The target population is Yas mobile money agents in the study area. The methods of data collection were cross-sectional surveys using structured questionnaires administered to a sample of 89 mobile money agents. Analysis was done using MS Excel to produce graphs, means ($\bar{x}$), and standard deviations (Std dev). The results revealed that to a large extent (mean 3.69, std. dev. 1.91), respondents perceived that inflation factors have a strong impact on mobile money transactions. Secondly, the financial factors that strongly affect mobile money transactions are affordability, risks, and financial inclusion (mean 4.05, std dev 2.11); while multiple regulations (mean 3.94, std dev 2.04) to a large extent also have negative effects on mobile money transactions. Interestingly, the study revealed that the majority of the agents (67%) have invested less than 500,000 TZS in this business, suggesting the concern of risks involved. The study concludes that challenges, including security concerns and issues with agent availability and liquidity, particularly in rural areas, need to be addressed. Furthermore, the study recommends that individual enterprises should have sufficient access to financial resources and that existing regulatory frameworks for electronic payments should be improved so that policies on mobile money focus on maintaining and enhancing confidence in the system.

Keywords: Financial Factors, Inflation Factors, Multiple Regulations, Mobile Money Transactions, Yas Agents

I. INTRODUCTION

Mobile Money was defined by Jenkins (2008) as money that can be used and accessed via mobile phone. It can be used to perform transactions such as remittances, bill payment, payroll deposit, loan receipt and repayment, and purchases of goods and services such as prepaid airtime, groceries and bus tickets. Aker and Mbiti (2010), defined it as a product that allows clients to use text messages to store value in an account that is accessible by the handset, with the ability to convert cash in and out of the account, and transfer money between users. Mobile Money allows subscribers to bank directly from their mobile phones without physically being in a financial institution like the bank (Afanu & Mamattah 2013). Transactions such as sending and receiving money, buying airtime, payment of bills and buying internet bundles can be done through your mobile wallet on the phone.

According Irura et al. (2013), mobile money transactions are getting better with time and are becoming more popular among consumers and businesses. Though it is dependent on the availability of technology, using mobile money transactions has potential of improving the scope and quality of financial services by expanding opportunities of reducing trading risks, enhancing access to financial services, and ultimately resulting in more economical delivery of goods and services (Kabir, 2013). According to Lakshmi (2015), mobile money was replacing cash among migrant workers in South India because both agents and clients trust these systems. Furthermore, mobile money transactions have changed how people conduct business and make informed decisions about their transactions. Maitai and Omwenga (2016), reaffirm that mobile money transactions make life easier because they are simple to use, beneficial for those without bank accounts, and accessible to the impoverished rural people.

Licensed Under Creative Commons Attribution (CC BY-NC)

Notwithstanding the aforementioned advantages and the widespread use of mobile phones, which has encouraged individual businesses to invest significant funds in developing mobile money transaction systems, the adoption rate of mobile money transactions is still lower than anticipated, suggesting that internet and other technology-based transactions are unsafe, impractical, and likely to result in fraud (Ngaruiya, et al., 2014). Mandari and Richard (2018), affirmed that cash transactions despite its apparent ease and convenience have certain drawbacks when compared to mobile money transactions for individual businesses. These drawbacks include anonymity, cash-related crimes, robberies, the expense of handling cash, its easy loss, tracking difficulties, and the potential for money laundering.

However, in Tanzania, Pulver et al. (2010) informed that mobile money transactions have become a more significant support for the establishment and functioning of individual businesses, helping them grow into successful revenue-generating organizations. In an effort to enhance the operations of private businesses, the Tanzanian government has worked to encourage the growth of mobile money transactions through government deduction fees. The 2015 institutionalization of the mobile money transactions policy is one of the government's efforts in this field to hasten individual and socioeconomic development (International Monetary Fund [IMF], 2016). With an increase in users from 360,740 in 2009 to 49,356,465 in 2015, Tanzania's individual industry has seen a rise in mobile money transactions both domestically and internationally. This trend therefore assisted customers to maintain transactional balances in their electronic wallets (United Republic of Tanzania [URT], 2021).

Tigo Tanzania, now known as Yas Tanzania, has a history marked by pioneering digital services and mobile financial solutions. It began operations in 1994 as Mobitel, launching Tanzania's first cellular service. Later rebranded to Tigo, it became a leader in the digital space, offering voice, SMS, internet, and mobile financial services. In 2014, Tigo Pesa (now Mixx by Yas) became Africa's first fully interoperable mobile money service, allowing users to transfer funds across different networks. Recently, Tigo Tanzania has been rebranded to Yas, signaling a shift towards Pan-African ambitions and further digital inclusion.

1.1 Statement of the Problem

Many scholars and researchers agree that mobile money transactions are profoundly changing business and financial decision-making in many markets, especially in developing economies. Ngaruiya et al. (2014) claimed that the advent of mobile money transfers has made banking services more accessible to individual business owners, provided a safe platform for small savings, and encouraged the expansion of individual businesses. The upward surge is further supported by the ever-increasing convenience, expanding financial inclusion for marginalized groups, and enabling new business models. Although there are numerous individual businesses that participate in mobile money transactions, the benefits of these transactions have often been sluggish to materialize, and some businesses do exist as a result of mobile money operations (Olasina, 2015).

Thus, despite the twenty-four hours access to financial services, there is a need for serious push so that businesses can reach new customers, accept new forms of payment, and improve competitiveness, all while contributing to economic growth of the individuals and the country at large. In Tanzania, the majority of people's mobile money transactions have not been fully utilized in spite of good government policy on mobile money transactions of 2016.

The Tanzania Communication Regulatory Authority [TCRA] reported that due to the limited penetration (less than 45%) of mobile and other financial services, business transactions in the formal financial mobile money sector have not yet received widespread acceptance, despite the rise in mobile phone usage (TCRA, 2022). A recent report by Julia (2024) revealed that Tanzania has witnessed a remarkable growth in mobile money uptake, transforming the way people transact across the country. In the same report it affirmed that the adoption of mobile money has increased from 60% in 2017 to 72% in 2023. However, while mobile money has already become an integral part of many Tanzanians' daily lives for peer-to-peer transfers, there remains a significant untapped potential. This phenomenon can be interpreted that are some challenges associated with the use of mobile money transactions; hence the study aims at assessing such challenges and their impact on mobile money transactions in Tanzania.

1.2 Research Objectives

To assess factors affecting mobile money transactions in Tanzania with focus on Yas agents in Dar es Salaam City Council, Tanzania.

1.2.1 Specific objectives

i. Investigate the demographic factors influencing the adoption of mobile money services;
ii. To examine the effects of inflation factors on mobile money transactions;
iii. To determine the effects of financial factors on mobile money transactions;
iv. To identify the effects of multiple regulatory provision on mobile money transactions.

Licensed Under Creative Commons Attribution (CC BY-NC)

II. LITERATURE REVIEW

2.1. Theoretical Review

2.1.1 Friedman's Monetary Theory

The monetary theory of inflation developed by monetarist Milton Friedman in 1970 as explained by Karl and Allan (1972) states that inflation is always and everywhere a monetary phenomenon. It asserts that money supply growth is the cause of inflation and that faster money supply growth causes faster inflation. The theory further narrates that inflation will occur if the money supply increases more quickly than the factor of growth of any particular enterprise budget.

There will not be any inflation if the money supply grows in proportion to actual output. According to different scholars, inflation is always a mobile money transaction phenomenon, because it can only be caused by a faster increase in budgetary quantities than in output. According to the former, inflation is brought on by an increase in the money supply and it rises more quickly as the money supply expands. Specifically, 1% greater inflation results from 1% quicker money supply expansion. The money supply is proportional to the level of prices, all other factors being equal. Prices would double if the money supply doubled.

According to Maitai and Omwenga (2016), inflation has been a dominant feature in the modern world when comparing growth factors; as a result, rising inflation is mirrored in rising mobile money service plans.

2.1.2 The Financing Constraint Theory

One of the most significant pillars of corporate budgeting is the financing factor theory (FFT), which was put forth by Modigliani and Miller in 1958. It contends that the influence of financial factors and mobile money transactions results in the interdependence of decisions regarding financing and mobile money transactions. The FFT theory is based on theoretical foundations that include information-driven issues of analyzing mobile money transactions under financial constraints and incentive restrictions, which are prevalent in emerging markets and have a big impact on how mobile money transactions are carried out and how decisions are financed in imperfect markets. Businesses' susceptibility to changes in the overall economy is influenced by their level of financial stability, which also dictates the kind of financing and mobile money transaction policies they can adopt. According to the former, businesses typically spend less on mobile money transactions when they are financially motivated, which lessens the variance in their overall outputs.

2.1.3 Agency Theory

According to Jensen and Meckling (1976) an agent is a person who acts on behalf of another person in dealing with other people. For example, a selling agent acts on behalf of a principal, a manufacturer of goods, to sell goods on the manufacturer’s behalf. Similarly, a stock broker is an agent who acts on behalf of a client (the principal) to buy or sell shares on the client’s behalf. The agent acts on the name of the principal, and commits the principal to agreements and transactions.

Jensen and Meckling (1976) further suggested a theory of how the governance of a company is based on the conflicts of interest between the company’s owners (shareholders), its managers and major providers of debt finance. Each of these groups has different interests and objectives. The shareholders want to increase their income and wealth, they are therefore concerned about dividends, but they are even more concerned about long-term profitability and financial prospects, because these affect the value of their shares. Meanwhile the managers are employed to run the company on behalf of the shareholders. Managers have an employment contract and earn salaries. Furthermore, major providers of debt have an interest in sound financial management by the company’s managers, so that the company will be able to pay its debts in full and on time.

Jensen and Meckling (1976) furthermore, defined the agency relationship as a form of contract between a company’s owners and its managers, where the owners (as principal) appoint an agent (the managers) to manage the company on their behalf. As a part of this arrangement, the owners must delegate decision-making authority to the management.

2.2 Empirical Studies

2.2.1 Effects of Inflationary Factor on Mobile Money Transactions

A study by Higgins et al. (2012) examined how mobile money transactions and inflationary factors interacted in Ghana. Primary and secondary data were gathered from several small and medium-sized individual businesses using a descriptive study design. The method of purposive sampling was used. There were 120 responders in the trial. Data was gathered via a questionnaire. The econometric method of ordinary least squares was employed in the investigation. The results revealed that inflationary price increases account for about 30% of the growth. The study came to the conclusion that the government must take the lead in the fight against inflation since it is a national issue. According to

Licensed Under Creative Commons Attribution (CC BY-NC)

the study's findings, the first impact is seen in the form of higher operating expenses brought on by inflationary price which impacted on goods and services bought in the marketplace. The study suggested that in order to control cost-push inflation, the government could lower taxes on a number of suitable indicators that indicate price increases for a range of goods and services.

Wong and Tang (2020), investigated the relationship between credit card usage and inflation in Malaysia using Autoregressive Distributed Lag (ARDL) and time-series data from 1997–2017. The study found that in the long run, credit card usage has a stronger effect on prices than bank lending, and economic activity remains the most influential determinant of price levels. In the short run, bank credit growth and money supply growth are key drivers of inflation.

Puspita et al (2024), carried out a study in Indonesia to identify the effect of e-money, demand deposits, currency, and quasi-money on inflation. Using the Error Correction Model approach and an observation period from 2010 to 2020, the study showed that demand deposits have no effect on inflation in Indonesia. Meanwhile, currency had a positive effect on inflation both in the long and in the short term. The e-money and quasi-money variables proved to have a negative effect on inflation in the country on the long run. The results indicated that the more e-money and quasi-money there is, the more people use non-cash transactions, which in turn can reduce the inflation rate.

2.2.2 Effects of Financial Factor on Mobile Money Transactions

Isaac and Jenny (2010) conducted research to assess the impact of financial factors on mobile money transactions in Brazil. With a sample of 258 respondents that were purposefully chosen, the study used a descriptive design. Data was gathered via questionnaire and interview. To ascertain the relationship between financial factors and mobile money transactions, the researcher employed the Engle-Granger Cointegration test, error correction, and Granger causality as estimation techniques. The results showed that financial factors resulted in a 65 billion budget revenue gap due to lower budget expenditures available to fund business efficiency, of which aid has only covered one-third of the budgeted amount. The study suggested that each business should make sure that there are more creative funding sources available to support advancement toward the development goal's completion. Other important financial factors identified were risks and trust.

In another study in Ghana by Tobbin and Kuwornu (2011) on consumer behaviour towards the adoption and use of mobile money transfer, it was revealed that the intention to use mobile money transfer was found to be below average. Out of a total of 288 respondents, 48.4% responded "Yes" to having an intention to use mobile money, 28.3% said "No" and 23.3% were unsure. The study concluded that the adoption of mobile money transfer is dependent on consumers' perception on trust and risk.

2.3.3 Effects of Multiple Regulatory Provisions on Mobile Money Transactions

The Global System for Mobile Association (GSMA) in 2018 launched the Mobile Money Regulatory Index (MMRI), a tool that quantitatively assessed how effectively countries' regulations enabled mobile money, covering 90 economies with a scale of 0-100 based on six dimensions and 26 weighted indicators. The MMRI's dimensions included authorization, consumer protection, transaction limits, Know Your Customer (KYC), agent networks, and investment/infrastructure. The index provided policymakers and regulators with nuanced insights into their markets to promote mobile money growth and financial inclusion.

A study by World Bank (2021) informed that effectiveness of mobile money payments depends on a supportive regulatory environment. Requirements such as Know-Your-Customer (KYC) rules, consumer protection frameworks, and agent transparency can influence the ease with which people use mobile money. An enabling regulatory framework allows the development of innovative and sustainable mobile money banking services that can effectively serve beneficiaries. In Ghana, revision of agent banking and e-money guidelines permitted mobile network operators to offer mobile money accounts. Ghanaian financial service providers were able to invest in agent recruitment, customer education, and expand coverage of mobile money accounts. According to the Global Findex database, the share of adults with mobile money accounts tripled between 2014 and 2017 in Ghana.

Other studies in Kenya and Tanzania on mobile credit services showed that they have achieved early success in mobile financial services according to Blechman (2016). However, while these new services have the potential to further promote financial inclusion, they also raise novel regulatory issues and do not fit neatly into pre-existing regulatory categories. This is due to the nature of mobile credit and the variety of entities and regulatory frameworks implicated in the business models found in these two markets.

III. METHODOLOGY

3.1 Research Design

Both quantitative and qualitative research methods were used in this study. Quantitative methods probed the demographic characteristics of the study population; while qualitative methods were used to obtain data on the factors

Licensed Under Creative Commons Attribution (CC BY-NC)

affecting mobile money transactions. Qualitative research designs are the commonly used to examine a person, group, community or institution. They focus on understanding concepts and experiences through non-numerical data like interviews and observations (Saunders et al., 2015). All participants chosen must share a unifying factor, which means they all must have a direct or indirect connection to the research question or subject being studied.

3.2 Area of the Study

The study was carried out in Dar es Salaam City Council of Dar es Salaam region which has an area of 208Km^2. This area was selected because cost effective and assurance of accessibility of information as well as closeness of researcher to the study population in terms of transportation. Dar es Salaam City Council with a population of 1,649,912 inhabitants in 458614 households, is one of the Local Governments in Dar es Salaam region and occupies almost the entire Ilala district (URT, 2021). The City council has many different business companies and one of them Yas Mobile Network Operators who use several Agents which are the focus under this study. Other Mobile telephone companies who have invested heavily the city include Airtel, Vodacom, Halotel and Zantel.

According to NBS (2024), there is a significant mobile phone penetration in Dar es Salaam region, with 94.0 percent of persons aged 15 years and above owning mobile phones, 47.6 percent of them own only non-smartphones. Usage proportions are similarly high, with 92.2 % of persons aged 15 years and above use ICT equipment for communication. The non-smartphones are mostly used by individuals who attained training after secondary education (98.4%).

3.3 Population of the Study

According to Kothari et al. (2022), a population is any whole group of things or individuals that have certain traits in common. Either, McMillan and Schumacher (2013), defined a population as a group of individuals or events from which a sample is drawn and to which results can be generalized. In this study the population is Yas mobile money agents. According to TCRA (2022) the operation of Yas mobile money infrastructure has been increasing since inception (Table 1).

Table 1

Development of Mobile Money Services with Yas Company

Year	Registered subscribers	Market share	MM subscribers	Market share
2012	6,370,796	24%	N/A	N/A
2013	6,297,288	23%	N/A	N/A
2014	8,624,638	25%	N/A	N/A
2015	11,115,991	28%	5,252,523	30%
2016*	11,606,567	29%	5,584,052	32%
2017	11,062,852	27.7%	6,091,578	27%
2020	12,660,697	25%	8,754,060	28%

Source: Tanzania Communication Regulatory Authority (2022)

Table 1 shows that by December 2020, Yas mobile money services had 8,754,060 subscribers countrywide. However, there were 110,000 Yas mobile money agents registered by 2022 across the whole mainland Tanzania. In this study the regional figures for Dar es Salaam and subsequent the city council, the focus of this study are not clearly given, however, preliminary survey through transects walk in a rectangular polygon 100m x 33km from Ilala Boma to Chanika identified 120 agents, which formed study population.

3.4 Sampling Design and Sample Size

3.4.1 Sampling Design

A sample is a collection of items selected from a population in order to estimate the population's characteristics (Adam & Kamuzora, 2008). Purposive and random sampling was used in the study to choose study participants. Choosing the most pertinent data instances to find and select individuals or groups of individuals who possess the necessary skills and knowledge about a given phenomenon is a commonly employed technique in both quantitative and qualitative research (Bowling, 2009).

3.4.2 Sample Size

According to Kothari et al. (2022), sample size is the quantity of objects or responders that must be chosen from the entire population in order to form a sample. Yamane (1967) provided a simplified formula for computing sample size when the targeted population is formed by less than ten thousand individuals/variables which is widely used. This formula was employed by Saunders et al. (2015) in their study while computing the sample sizes for different categories of the targeted populations for study, at a 5% precision level. This study employed the same formula: $n = N/(1+N(e)^2)$;

Licensed Under Creative Commons Attribution (CC BY-NC)

where: n = Sample size; N = is the Targeted study population; e = Level of precision (0.05) to generate a sample size of 92 respondents, which upon data cleaning 89 were found to be responsive.

3.5 Data Gathering Methods

During the study both primary and secondary data were collected. Primary data collection methods used include observation, questionnaires and interviews. Secondary data collection method that used were reviews of different documents relevant to the study.

3.6 Data Collection Tools

According to Cooper and Schindler (2008), a questionnaire is made up of several questions that are typed or printed on a form or series of forms in a specific order for the purpose of carrying out surveys to gather information. The researcher used both closed-ended and small number of open-ended questions. Thirty-five (35) questions made up the questionnaires, six of them focused on demographic characteristics of the study population that influence participation in mobile money business, ten of them focused on inflation factors, eleven questions concentrated on financial factors and eight questions probed on the effects of multiple regulatory provision factors on mobile money transactions.

3.7 Data Analysis

This study used both quantitative and qualitative data analysis. The assessment variables were the actual probe questions used to generate data on the issues being researched. With the exception of the demographic characteristics, which had discrete figures, each factor being investigated had five (5) possible responses: Strongly disagree, Disagree, Neutral, Agree, and Strongly Agree. For the purpose of qualitative analysis in the MS Excel program, the five possible responses corresponding to the Likert scale were coded as follows: Strongly disagree (1), Disagree (2), Neutral (3), Agree (4), and Strongly Agree (5). The quantitative analysis was used to analyze the demographic characteristics of the study population.

IV. FINDINGS & DISCUSSION

The study findings on demographic characteristics the study population as presented in figures and tables, while those on effects of inflation and financial factors on mobile money transactions and that of multiple regulatory provisions are presented in tables of means ($\bar{x}$) and standard deviations (Std dev) supported by a 5-point Likert scale with a range of 0.8.

4.1 Reliability TestA

Reliability test in these findings used the Cronbach's alpha (α) coefficient. When Cronbach's alpha is greater than 0.9 it means that the internal consistency reliability is excellent. When it is greater than 0.8 (>0.8) the reliability is good; while greater than 0.7 is acceptable and greater than 0.6 is still acceptable. When it is 0.5 to 0.58 is poor and when it is less than 0.5, internal consistency is unacceptable. In this study Cronbach's alpha (α) coefficient was 0.97, meaning that internal consistency is excellent (Creswell, 2009).

4.2 Demographic characteristics

4.2.1 Age groups distribution

Four age groups composition of the participants have been identified and presented in Table 2.

Table 2

Age Group Distribution

Age groups	Frequencies (n=89)	%
18-25 years	12	13.48
26-35 years	56	62.92
36-45 years	17	19.10
>45 years	4	4.49

Table 2 shows that the most active age group in mobile money business is between 26-35 years occupying 63% of the study population. In a normal community this the age in which people are actively involved with their own development agenda in order to make a difference within the community settings.

Licensed Under Creative Commons Attribution (CC BY-NC)

4.2.2 Gender Composition

Gender composition revealed that 49.4% of the study population are women, while 50.6% are males. Table 3 shows this trend and actually it can be interpreted that both female and male are equally involved in mobile money transaction business.

Table 3

Gender Composition

Gender	Frequencies (n=89)	%
Female	44	49.44
Male	45	50.56

4.2.3 Education status of study population

Education is a pre-requisite for any business to shrive. Table 4 reveals that most of the participants involved in the Yas mobile money business have technical education (31%), graduates with first degree (28%), or secondary school leavers (28%). Interesting is note that even some respondents are postgraduate degree holders (12%). This trend can be interpreted that mobile money transaction business has created a diverse employment status across the communities.

Table 4

Education Status

Education	Frequencies (n=89)	%
Bachelor degree	25	28
Secondary education	25	28
Postgraduate	11	12
Technical education	28	31

4.2.4 Employment Opportunities

Table 5 displays the employment opportunity provided by mobile money transaction business among the Yas agents in the study area.

Table 5

Employment by Sector in the Study Population

Employment	Frequencies (n=89)	%
Private Sector	28	31.46
Public Sector	19	21.35
Self-employment	29	32.58
Students	5	5.62
Informal employment	8	8.99

The table shows that most of the agents are self-employment (33%), while 32% are registered in the private sector. Either public sector has absorbed 21%, and 9% are in informal sector, while students (6%) are the lowest engaged in the mobile money transaction business. In relation to the education status findings, these results can be interpreted that the most technical education graduates and those with first degree do find employment opportunity in the mobile money transaction business.

4.2.5 Financial Investment in Mobile Money Transactions

Table 6 shows that majority of the respondents (67%) have invested below 500,000 TZS in mobile money transactions and about 18% have investment ranging between 510,000-1,000,000 TZS, about 8% invested between 1,100,000-1,500,000TZS, about 3.5% fall in the range of 1,510,000-2,000,000 TZS, while another group of 3.5% do afford to invest above 2,000,000 TZS.

Table 6

Financial Investment in Mobile Money Sector

Investment	Frequencies (n=87)	%
<500,000 TZS	58	66.67
510,000 - 1,000,000 TZS	16	18.39
1,100,000-1,500,000 TZS	7	8.05
1,510,000-2,000,000 TZS	3	3.45
>2,000,000 TZS	3	3.45

Licensed Under Creative Commons Attribution (CC BY-NC)

The interpretation can be that majority of the people involved in mobile money business are unable to access financial capital or are afraid of taking financial risks. As revealed in the educational status probe, the majority of these respondents are the technical graduates and those with first degree.

4.3 Factors Affecting Mobile Money Transactions in Tanzania

4.3.1 Effects of Inflation Factors on Mobile Money Transactions

Most important inflation factors that affect mobile money transactions are agency fee and network costs, erosion of purchasing power and financial instability, and shifting priorities. The results of inflation factors and their related impacts on mobile money transactions are summarized in table 7. The table shows that all inflation factors to a large extent (Mean 3.69, Std dev 1.91) contribute negatively to the effects of mobile money transactions. However, the need for Central banks to carefully manage monetary policy to control inflation and maintain the stability of mobile money systems (Mean 4.01, Std dev 2.10) is strongly echoed by most of the respondents. Also, the need for regulators to ensure that mobile money platforms are adequately protected from the negative effects of inflation so that users are not unduly burdened seems to be highly agreed by most the respondents (Mean 4.03, Std dev 2.09).

Table 7

Summary of Inflation Factors on Mobile Money Transactions

Variables	Mean	Std dev
Inflation increases transaction costs due to rise of cost of goods and services	3.65	1.89
Inflation triggers increase in agent fees on mobile money transaction for the agency to maintain profitability	3.65	1.88
Inflation has the potential of making mobile money a less attractive option for users.	3.71	1.92
As the costs of maintaining mobile network infrastructure increase with inflation, mobile network operators might pass those costs onto users	3.69	1.88
Inflation erodes the purchasing power of digital balances held in mobile money accounts, meaning users need more money to buy the same goods or services.	3.64	1.87
Inflation triggers users to prioritize spending on essential goods and services over saving or making non-essential transactions through mobile money services	3.43	1.75
High and sustained inflation might lead users to be less inclined to save money in mobile money accounts, as the real value of their savings decreases over time	3.33	1.73
Increased inflation can lead to greater volatility in mobile money transactions, as users might be more cautious with their spending and saving habits	3.50	1.83
In areas with limited access to traditional banking, mobile money can still offer a vital service for sending and receiving money, even during inflationary periods	3.98	2.08
Central banks need to carefully manage monetary policy to control inflation and maintain the stability of mobile money systems	4.01	2.10
Regulators need to ensure that mobile money platforms are adequately protected from the negative effects of inflation so that users are not unduly burdened	4.03	2.09
Mean average and SD	**3.69**	**1.91**

It should be noted that as the more the mean is closer to 5, the higher the impact, hence it can be deduced that there is a high potentiality of inflation making mobile money a less attractive option for mobile money users. According to Maitai and Omwenga (2016), inflation has been a dominant feature in the modern world when comparing growth factors; as a result, rising inflation is mirrored in rising mobile money service plans. The main problem posed by intergenerational money is striking a balance between the challenges that are now and those that may arise in the future (Njau, 2015). In this case, future pricing standards that may deviate from the amount of mobile money are typically influenced by the liabilities as well as the simplicity of completing endowment mobile money transactions.

4.3.2 Effects of Financial Factors on Mobile Money Transactions

Financial factors examined include affordability of transaction costs, security risks and financial inclusion and impact on businesses performance. The results in table 8 show that the perceived cost and value of mobile money services to large extent (Mean 3.77, Std dev 1.92) play a crucial role in adoption. If the cost of transactions, registration, or maintaining an account is perceived as too high, it can deter potential users, as echoed by most of the respondents (Mean 4.02, Std dev 2.10). Meanwhile, mobile money aims to reduce transaction costs compared to traditional banking. To a large extent (Mean 4.10, Std dev 2.15) lower transaction fees, especially for small transfers, can encourage wider adoption and usage. Either, to large extent (Mean 4.20, Std dev 2.23) perceived security risks, such as fraud or data

Licensed Under Creative Commons Attribution (CC BY-NC)

breaches, can significantly impact user confidence. Thus, robust security measures and clear communication about safety protocols are essential for building trust and encouraging adoption (Mean 4.14, Std dev 2.16).

Table 8

Summary of Financial Factors on Mobile Money Transactions

Variables	Mean	Std dev
The perceived cost and value of mobile money services play a crucial role in adoption	3.77	1.92
High cost of transactions, registration, or maintaining an account it can deter potential user	4.02	2.10
Lower transaction fees can encourage wider adoption and usage of mobile money services	4.10	2.15
Perceived security risks, such as fraud or data breaches, can significantly impact user confidence	4.20	2.23
Robust security measures are essential for building trust and encouraging adoption of MMT	4.14	2.16
Mobile money transactions can increase economic activity and improved financial well-being of its users	4.07	2.13
Mobile money has the potential to expand financial inclusion for the unbanked or under-banked populations	4.11	2.16
The integration of mobile money with other financial services enhances utility and encourage wider adoption	4.02	2.09
Sound and supportive regulation from governments is vital for fostering a healthy mobile money ecosystem	3.94	2.03
MMS can positively impact the financial performance of businesses, particularly small and medium-sized	4.19	2.18
Mobile money improves individual financial management by providing secure way to save, send and receive money.	3.94	2.05
Mean average and Std dev	**4.05**	**2.11**

Furthermore, mobile money to a large extent (Mean 4.11, Std dev 2.16) has the potential to expand financial inclusion by providing access to financial services for the unbanked or underbanked populations. This can lead to increased economic activity and improved financial well-being for individuals and communities. Either, integration of mobile money with other financial services, such as bank accounts and credit systems, to a large extent (Mean 4.02, Std dev 2.09) can enhance its utility and encourage wider adoption. Interoperability between different mobile money platforms is also crucial for seamless transactions.

Upon assessment of impact of mobile money transactions on business performance, the results show that to large extent (Mean 4.19, Std dev 2.18) mobile money can positively impact the financial performance of businesses, particularly small and medium-sized enterprises (SMEs) like the Yas mobile money services. It can reduce transaction costs, improve cash flow management, and facilitate access to new markets. Also, to a large extent (Mean 3.94, Std dev 2.05), mobile money can improve individual financial management by providing a convenient and secure way to save, send and receive money, pay bills, and access other financial services.

A study by Senso and Venkatakrishnan (2013) conducted in Singida district on challenges of market penetration and expansion by the mobile-phone money transfer services identified several significant challenges affecting the market penetration, market expansion and regular use of mobile money. Among them were lack of financial capital for agents, unavailability of network coverage and regulatory barriers. Hence, the reduction of transaction charges, ensuring widespread availability of agents in rural areas, stability of network, regular supply of electricity, training and information to users were suggested as the necessary measures required to increase the usage, penetration and expansion of MMS.

Kirui et al. (2013) found that mobile phone-based money transfer services in rural areas helped to resolve a market failure that farmers face and it enabled them access financial services. They observed that mobile money services were simple to operate; the registration process was simple and could be completed within few minutes and there were many access points (agents) which improved the delivery of financial services. This means that the usage of mobile money services enabled SMEs improve financial services which increased financial inclusion and thus influenced its usage in business undertaking. Interoperability between different mobile money platforms is also crucial for seamless transactions.

A study by Abiona and Koppensteiner (2018) integrated three variables namely perceived risk, perceived benefit and perceived value, to predict consumers' intention to use mobile money services. The study found that the perceived value together with the perceived risk and benefit directly affect consumers' intention of adopting the technology in business operation. In another study, Pavlou (2003) integrated trust and risk with the technology acceptance model in explaining the consumer acceptance of electronic commerce. The results showed that trust and risk were significant in influencing the usage of technology.

Licensed Under Creative Commons Attribution (CC BY-NC)

4.3.3 Effects of multiple regulatory provision factors on mobile money transactions

The results showed that supportive regulatory environment, including clear KYC rules, robust consumer protection, and transparent agent practices, to large extent (Mean 3.98, Std dev 2.06) encourages user adoption and trust as revealed in table 9. Conversely, overly complex or unclear regulations to a large extent (Mean 4.08, Std dev 2.15) can discourage both providers and users. For example, onerous enrolment procedures can slow customer acquisition and increase costs.

Table 9

Summary of Multiple Regulatory Factors on Mobile Money Transactions

Variables	Mean	Std dev
Supportive regulatory environment on mobile money transactions encourages user adoption	3.98	2.06
Clear rules, robust consumer protection, and transparent agent practices builds trust and encourages user adoption	4.01	2.08
Complex or unclear regulations can discourage both providers and users of mobile money services.	4.08	2.15
Stringent KYC processes can be a barrier to entry for some, particularly those lacking formal identification, potentially leading to financial exclusion	3.82	1.95
Strong consumer protection frameworks are crucial for building user trust and confidence in mobile money services	4.02	2.08
Regulations governing mobile money agents, such as agent liquidity and performance, are vital for ensuring smooth transactions	3.92	2.01
Regulations promoting interoperability between different mobile money platforms can enhance user convenience and drive wider adoption	3.73	1.90
Tanzania has seen substantial growth in mobile money subscriptions and transactions, driven by factors like increased mobile phone and internet access, and a growing awareness of the service.	3.95	2.05
Mean average and Std dev	**3.94**	**2.04**

It should be noted that regulations affect the commercial viability of mobile money services. For instance, unclear legal frameworks or lack of consumer protection can deter users. Furthermore, the importance of KYC requirements cannot be underscored, however while essential for security, stringent KYC processes can be a barrier to entry for some, particularly those lacking formal identification, potentially leading to financial exclusion. This observation has been confirmed by most of the respondents to large extent (Mean 3.82, Std dev 1.95) as indicated in table 9. Thus, strong consumer protection frameworks are crucial for building user trust and confidence in mobile money services (Mean 4.02, Std dev 2.08). Furthermore, regulations governing mobile money agents, such as agent liquidity and performance to large extent (Mean 3.92, Std dev 2.01) are vital for ensuring smooth transactions. The study also revealed that regulations that promoting interoperability between different mobile money platforms to a large extent (Mean 3.73, Std dev 1.90) can enhance user convenience and drive wider adoption.

These findings support those generated by Senso and Venkatakrishnan (2013) which concluded that regulatory barriers contribute to low penetration level of mobile money services in Singida district. Similarly, the World Bank report (2013) on Enterprise survey in Tanzania pointed out that, poorly designed or implemented regulations can hinder benefits, potentially create new digital divides and exclude vulnerable populations. Therefore, a balanced and well-considered regulatory approach is essential for maximizing the positive impact of mobile money on individuals, businesses, and the overall economy.

V. CONCLUSION & RECOMMENDATIONS

5.1 Conclusion

Tanzania has seen substantial growth in mobile money subscriptions and transactions, driven by factors like increased mobile phone and internet access, and a growing awareness of the service. A good portion of the population (men and women) do participate in mobile money transaction business. Awareness and lack of employment in the public sector have driven a number of technical and University graduates to be engaged in mobile money business. This should be taken as positive venture because mobile money transactions agents are becoming refugees for the unemployed graduates. However, challenges remain, such as security concerns, agent availability and liquidity, particularly in rural areas. Although the Tanzanian government is implementing regulations to address these challenges more efforts are needed to build confidence among the users of mobile money transactions.

5.2 Recommendations

This research has unpacked the factors and challenges related to mobile money transactions with Yas mobile money agents in Tanzania, which are likely applicable to other mobile service providers such as Vodacom, Airtel, and

Licensed Under Creative Commons Attribution (CC BY-NC)

others. Consequently, it offers some important recommendations. Among these, individual enterprises involved in the mobile money business must ensure they have sufficient access to financial resources to fund their operations and support their ventures for improved efficiency. The study further recommends that existing regulatory frameworks for electronic payments be enhanced to ensure policies on mobile money focus on maintaining and strengthening confidence in the system. Additionally, reviewing the National Payments System Act, 2015, is crucial to clarify the roles of regulators, strengthen oversight, and allow for the expansion of the regulatory framework. Furthermore, it would be prudent for the Bank of Tanzania (BoT) to initiate and implement deposit insurance coverage for individual mobile money accounts, thereby addressing operational risks and enhancing contingency planning. Notwithstanding these suggestions, the BoT could also strengthen the interest rate channel to enable even small financial capitals to borrow and pay accordingly. The study additionally emphasizes the importance of improving interoperability between different mobile money providers to promote wider adoption and usage of mobile money services. Lastly, reducing regulatory barriers is essential to build confidence in mobile money platforms, ensuring that payments are processed safely, securely, and efficiently, and that mobile money deposits remain available for conversion and transfer at all times.

REFERENCES

Abiona, O., & Koppensteiner, M. F. (2018). *Financial inclusion, shocks and poverty: Evidence from the expansion of mobile money in Tanzania*. IZA Discussion Paper No. 11928. Institute of Labor Economics (IZA). https://ideas.repec.org/p/iza/izadps/dp11928.html

Adam, J., & Kamuzora, F. (2008). *Research methods for business and social studies*. Mzumbe Book Project.

Afanu, E. K., & Mamattah, R. S. (2013). Mobile money security – "A holistic approach". MSc. Information Security, Lulea University of Technology.

Aker, J. C., & Mbiti, I. M. (2010). Mobile phones and economic development in Africa. *The Journal of Economic Perspectives, 24*(3), 207–232.

Blechman, J. G. (2016). Mobile credit in Kenya and Tanzania: Emerging regulatory challenges in consumer protection, credit reporting, and use of customer transactional data. *The African Journal of Information and Communication, 17*, 61–88.

Bowling, A. (2009). *Research methodologies in health* (3rd ed., pp. 162–176). McGraw-Hill.

Brunner, K., & Meltzer, A. H. (1972). Money, debt, and economic activity. *Journal of Political Economy, 80*(5), 951–977.

Creswell, J. W. (2009). *Research design: Qualitative, quantitative, and mixed methods approaches* (6th ed.). Sage Publications.

GSMA. (2018). Mobile money regulatory index, 2018. https://www.gsma.com/solutions-and-impact/connectivity-for-good/mobile-for-development/the-mobile-money-regulatory-index/

Higgins, D., Kendall, J., & Lyon, B. (2012). Kenyan small and medium businesses' mobile money usage trends. *Innovations: Globalization, Governance, and Technology, 7*(2), 67–81.

IMF. (2016). *United Republic of Tanzania, country report no. 2016/255: Selected issues—macrofinancial issues*. https://doi.org/10.5089/9781498391177.002

Irura, S., Nganga, M., Mwachofi, & Munjiru, M. (2013). Technology adoption and the banking agency in rural Kenya. *Journal of Sociological Research, 4*(1), 249-266.

Isaac, M., & Jenny, C. A. (2010). African economic development with mobile phones. *Journal of Economic Perspectives, 24*(3), 207–232.

Jenkins, B. (2008). *Report on developing mobile money ecosystems*. International Finance Corporation & Harvard Kennedy School.

Jensen, C. M., & Meckling, H. W. (1976). Theory of the firm: Managerial behavior, agency costs, and ownership structure. *Journal of Financial Economics, 3*(4), 305–360.

Julia, S. (2024). Deepening rural financial inclusion through expansion of banking agents. *Research and Insights, Financial Sector Deepening Tanzania (FSDT)*.

Kabir, M. R. (2013). Factors affecting mobile banking use: A case from a developing nation. *World Review of Business Research, 3*(3), 96–114.

Kirui, O. K., Okello, J. J., Nyika, R. A., & Njiraini, G. W. (2013). Impact of mobile phone-based money transfer services in agriculture: Evidence from Kenya. *Quarterly Journal of International Agriculture, 52*, 141–162.

Kothari, C. R., Umesh Kumar, B., & Dubey, D. (2022). *Research methodology: Techniques and trends* (1st ed.). Chapman & Hall/CRC Press.

Lakshmi, K. (2015). Role of mobile money in replacing cash: A study among migrant workers in South India. *Economic and Political Weekly, 50*(28), 116–123.

Licensed Under Creative Commons Attribution (CC BY-NC)

Maitai, J., & Omwenga, D. (2016). Factors influencing the adoption of mobile money transfer strategies in Kenya's telecom sector: A case study of Safaricom-Kenya Ltd. *IOSR Journal of Management and Business, 18*(10), 84–94.

Mandari, E., & Richard, E. (2018). Factors affecting mobile banking service usage: Tanzania's Ilala District case. *Journal of ORSEA, 7*(1), 42–54.

McMillan, J., & Schumacher, S. (2013). *Research in education: Evidence-based inquiry* (7th ed.). Pearson.

NBS. (2024). Dar es Salaam region basic demographic and socio-economic profile report; Tanzania, December 2024.

Ngaruiya, B., Bosire, M., & Kamau, S. (2014). Effect of mobile money transactions on financial performance of small and medium enterprises in Nakuru Central Business District. *Research Journal of Finance and Accounting, 5*(12), 53–58.

Njau, J. E. (2015). Tanzanian microbusinesses' use of mobile phones and how it affects their operations: A case study of Moshi municipality microbusinesses. *Journal of Economics International, 3*(6), 1047–1057.

Olasina, G. (2015). Factors affecting academics' use of M-banking: A case study of SMS-based M-banking. *Journal of Information Systems in Africa, 7*(4), 56–76.

Pavlou, P. A. (2003). Consumer acceptance of electronic commerce: Integrating trust and risk with the technology acceptance model. *International Journal of Electronic Commerce, 7*(3), 101–134.

Pulver, C., Camner, G., & Sjoblom, E. (2010). What makes a successful mobile money implementation? Learnings from M-PESA in Kenya and Tanzania. GSMA – Mobile Money for the Unbanked.

Puspita, D. S., Saraswati, B. D., & Pertiwi, A. T. (2024). The effect of e-money on inflation in Indonesia: An application of the quantity theory of money. In *Proceedings of the Medan International Conference on Economics and Business (MICEB)* (Vol. 2). Universitas Muhammadiyah Sumatera Utara.

Saunders, M., Thornhill, A., & Lewis, P. (2015). *Business research techniques* (6th ed.). Pearson.

Schindler, P. S., & Cooper, D. R. (2008). *Business research methods* (10th ed.). McGraw-Hill International.

Senso, N. C., & Venkatakrishnan, V. (2013). Challenges of mobile-phone money transfer services' market penetration and expansion in Singida District, Tanzania. *International Journal of Research in Management & Technology, 3*(6), 205–215.

TCRA. (2022). Tanzania communication regulatory authority: Quarterly telecom statistics, quarter 4 report, 2022.

Tobbin, P., & Kuwornu, J. K. M. (2011). Adoption of mobile money transfer technology: Structural equation modeling approach. *European Journal of Business and Management, 3*(7), 59–77.

URT. (2021). Dar es Salaam region investment guide. President's Office, Regional Administration and Local Government.

Wong, Z. J. R., & Tang, T. C. (2020). Credit card usage and inflation: A case study of a small open economy. *Journal of Economics Malaysia, 54*(1), 19–32.

World Bank. (2013). Enterprise surveys: Tanzania country profile. https://doi.org/10.1596/978-0-8213-9877-3

World Bank. (2021). The role of mobile money regulations: Evidence from Sub-Saharan Africa. World Bank Development Research Group.

Yamane, T. (1967). *Statistics: An introductory analysis* (2nd ed.). Wiley & Sons.

Licensed Under Creative Commons Attribution (CC BY-NC)