Access and Use of Mobile Money by Microentrepreneurs in Moshi District, Tanzania

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Abstract

This study assessed the accessibility and usage of mobile money services by micro-entrepreneurs *in Moshi District, Tanzania. A multistage sampling technique with a combination of random and purposive sampling was adopted to obtain a total of 120 shop retailers for questionnaire survey and six key informants for in depth interviews. Data were collected through questionnaire and checklist guide and analysed using Statistical Package for Social Sciences (SPSS) and content analysis. The findings show that most (70%) of the respondents owned one mobile handset. Almost (95%) respondents were using mobile money services for their businesses, and M-Pesa from Vodacom had the highest number of subscribers. Nearly, two thirds (65%) of the respondents had one Subscriber Identity Module (SIM) card. The majority of the respondents frequently (often or very often) used mobile money services for paying bills (91.7%), sending or withdrawing cash (91.6%), making purchases and commodity dealing (90.8%), making money transfer (87.5%), recharging airtime (84.1%) and storing money (72.7%). It is concluded that mobile money has been adopted by microentrepreneurs' even in rural areas. Furthermore, micro entrepreneurs were easily accessing the mobile money services mainly through Vodacom, Tigo and Airtel telecommunication*

companies. The study recommends that the user should adopt the services so to benefit from their business. Furthermore, these mobile telecommunication companies should offer affordable services especially on the marginalized rural areas.

Keywords: Mobile money, mobile phones, microenterprises, Moshi, Tanzania

1.0 Introduction

Mobile phones have become key primary forms of communication worldwide whereby currently there are 7.1 billion mobile phone subscribers. Asia-Pacific region has the highest annual growth rate of mobile phone subscribers (3.5 billion) followed by America (1.0 billion), Europe (790 million) and Africa (545 million) (International Telecommunication Union (ITU, 2020). This rapid increase in the number of mobile phone subscribers is attributed to many factors including the relatively low cost of cellular networks (mobiles are much more scalable than fixed-line phones) the high premium placed on mobility by consumers, the presence of the private investors in mobile phone sector, and the favourable regulatory environment (Morawczynski and Pickens, 2009).

In Tanzania, mobile telephony is one of the fastest growing sectors in terms of both the number of service providers and users. According to Tanzania Communication Regulatory Authority (TCRA) by the end of the second quarter of 2021, the total number of mobile network operators were seven namely, Vodacom, Airtel, Tigo, Halotel, Zantel, Tanzania Telecommunications Company Limited (TTCL) and Smile. The mobile phone cellular subscriptions in Tanzania amounted to 53.18 million of which Vodacom had the highest proportion (12.31 million), followed by Airtel (7.6 million), Tigo (5.7 million), Zantel (2.36 million), TTCL (227,424), Sasatel (4810) and Benson (1050) (TCRA, 2021). Nevertheless, the actual number of mobile phone users might be higher than the available statistics due to sharing culture of mobile phones among families and friends (Sife, 2014). Initially, telecom companies focused their coverage on highly populated areas especially the urban areas but there has been a rapid mobile penetration and adoption in the rural areas in recent years (Nyamba and Mlozi, 2012; Gaddies, 2012). It is estimated that more than three-quarters (78%) of Tanzanian households own mobile phones.

The conventional uses of mobile phones have been making calls as well as sending and receiving short message service (SMS). Nevertheless, increasingly there have been more innovative uses of mobile phones including the internet and web services, audio, video and image applications; computing applications and mobile money services (Sife, 2014). Mobile money services enable people to perform financial transactions such as transferring funds, storing money, withdrawing money, making payments, buying airtime, accessing credit, and even manipulating bank accounts to withdraw and pay bills (Jonathan and Camilo, 2008; Coetzee and Kabucho's, 2003). As a result, the introduction of mobile money services has been a new platform for unbanked population that counts for about 58% per cent of the Tanzanians (Mori and Mlambiti , 2020).

In many developing countries, banking systems are underdeveloped and access to financial services is lacking. Nearly 2.7 billion adults in the developing world do not have access to financial services such as the banks (Kimenyi, 2009; CGAP, 2013). Research indicates that on average, one bank branch and one automated teller machine (ATM) exists for every 10,000 people (McKinsey, 2010; Donovan, 2011) and a single person in five households has access to financial services (Kimenyi, 2009) in many developing countries. A survey conducted between 2009 and 2011 in some developing countries found out that only between 15 and 21 per cent of the households use formal bank services in rural areas (Jonathan and Camilo, 2008). This is mainly because the rural people are often considered by the formal financial sector as poor and not viable customers. The positive aspect of mobile phones is that mobile networks can reach remote areas at a relatively low cost. .

According to quarterly communications statistics report of Tanzania Communication Regulatory Authority (TCRA), until March 2021 there were 32,720,180 mobile money subscribers in Tanzania. Currently, a large part of Tanzania society is engaged in using mobile money services as it provides them with the opportunity of access banking services even among those who were previously isolated by traditional banking system, thus, becoming a key drive-in business communication channel which influence its usage (John , et al, 2018). The quality of user support and comfort ability with transaction steps among users, independently influence the adoption of mobile money services

among small and medium enterprises (SMEs) owners (Lubua, and Semlambo, 2017. This part focuses on two major areas of study which are access to mobile money services among micro entrepreneurs and the usefulness of mobile money services to micro entrepreneurs

Tanzania is one among the earliest countries to launch mobile money services in the year 2008, since then the country has witnessed a massive growth of the service which has been greatly attributed by growth of information communication infrastructures as well as a wide mobile phone penetration in urban and rural areas (USAID, 2013; Mandari, 2017). Due to numerous benefits which come with mobile money services, stakeholders in the country are investing efforts to make sure the provided services become accessible to the whole community (Lubuaand Semlambo, 2017). The study conducted by Nyello, et al, 2017 found that access to mobile money services has a significant contribution on micro business financial performance. Despite the benefits and increased use of mobile money services in Tanzania, micro-business financial situation continues to worsen although few perform well. It is therefore necessary to study further on how the enhanced access to mobile money services has contributed to efficiency and profitability of micro entrepreneurial activities.

The development of the mobile money services allows the businesses and individuals to access financial services and become part of the financial system which is a key driver to business growth and entrepreneurial development (Mohamed and Nor, (2021). It also enables entrepreneurs to have control over their accounts and perform financial transactions at any time as long as there is a network connectivity (John, *et al*,; 2018). Mobile money services have a great potential for financial inclusion in developing economies which are characterized by distinctive conditions such as price sensitivity, low digital penetration, high failure risks and competitions from the emerging markets which greatly influence mobile payments (Qureshi, 2020). It). Mobile money services offer safe storage, deposit, withdraw and transfer of funds at lower costs as compared to the banks and they also facilitate domestic remittances at much lower costs (Said and Kaplelach, 2019; Chiemo,2020). Basically, business operations of small entrepreneurs have been greatly supported by mobile

money services because these operate with or without internet connection provided that the telecommunication signals are accessible (Selmlambo, 2018). Mobile money is a greater innovation in financial ecosystem because, it reduces friction in payments as well as improves customers satisfaction by providing real-time transactions (GSMA, 2016; Koloseni and Mandari 2017). Despite various advantages of mobile money services there are still a good number of small and medium enterprises operators who refuse to use the services for fear of risks and other factors associated with mobile money services (John, et al, 2018). Because of these reasons, this study intended to assess the use and access of mobile money by micro entrepreneurs in Moshi District so as to determine the extent of the service usage and its limitation by micro entrepreneurs

This study was guided by the Activity Theory (AT) which focuses on understanding the human activity and work practices. Engeström (1987) formulated Activity Context (Fig. 1.1) as a network of different parameters or elements that influence each other (Uden, 2007). The Activity (what people do) is reflected through actions as people interact with their environment and it is undertaken by human agents (subjects), who are motivated towards a solution to the problem of purpose (object) and mediated by tools (artefacts) in collaboration with others in the operational environment (community). The structure of the activity is constrained by some conventions (rules) and social strata (division of labour) within the context (Fig. 1.1) (Ng-Kruelle *et al.,* 2002). The framework has been used in different areas including enterprise engineering and in learning, to mention but a few. Activity theory is relevant to this study because its principles can be applied to analyse problems of human computer interaction, and the mobile phone usage is not exceptional. Activity theory in this study helps to understand how ICTs are used in the context of the real activity. AT was selected to guide this study because it would provide a clear link between the use of mobile phone and its outcomes.

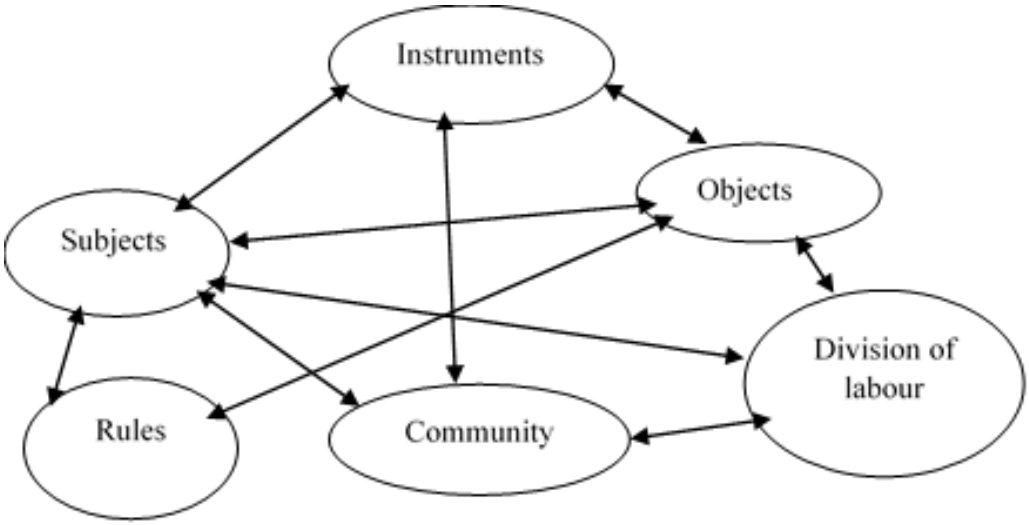

Figure 1.1: Components of the Activity Theory

Source: Komunte *et al.,* (2012)

The activity theory is a framework for enhanced understanding of actors' activities within social, economic and organizational contexts, attempting to link actors' actions within the relevant contextual elements. Activity theory has been understood as a body of knowledge for assessing social economic issues in a given environment. However, the theory is universal and blind that isolate some of the aspects. In showing the connection between mobile money services and Activity Theory, Chogi (2007) asserts that social context as per AT is made up of the community, subjects, rules and division of labour. The community is the environment in which the microenterprises operate. A subject involves all the microentrepreneurs and the division of labour includes the categories of the microenterprises in the study that is, shop retails (Donner, 2006).

At the same time, the rules regulate the use of mobile phone (tools) while the microentrepreneurs (subjects) adopt and use of these tools (mobile phones). The tools (mobile phones) transform activities of the microenterprises under the set rules to achieve the outcomes, which are either tangible or intangible

benefits that result from the use of the mobile phones by microentrepreneurs (Chogi, 2007). Generally, mobile phones are perceived as tools used to mediate activities of the microentrepreneurs, transforming objectives into outcomes, which have an effect on profitability, social relations and productivity in the microenterprises (Chogi, 2007).

Despite the high adoption of mobile money services in Tanzania as alluded to earlier, there is a dearth of evidence on the use of these services. That is to say, scholarly literature on the use of mobile money to support micro enterprises' activities is scarce. This study therefore examined the accessibility and usage of mobile money services by shop retailers in Moshi district, Tanzania

2.0 Methodology

This study was conducted in Moshi District in Kilimanjaro region, Tanzania. Moshi District was selected because of the availability of many microentrepreneurs mainly because business is one of the main economic activities for the ethnic groups (Chagga and Pare) living in Kilimanjaro region. In addition, there is no similar study that has been conducted in the study area. This study adopted a cross-sectional research design whereby data were collected only once. The study sample was drawn through multi-stage sampling procedure since this technique is appropriate for the population that covers a large area.

In the first stage, two divisions namely Kibosho and West Vunjo were randomly selected out of four divisions in Moshi District. The second stage involved random selection of four among 13 wards in the two divisions. In the third stage, eight villages were randomly selected out of 68 in the four wards. In selecting microentrepreneurs from the villages, a simple random sampling technique was applied. In this regard, there were 2,320 registered and unregistered shops in the district. According to Kish, (1965), a sample (n) can be chosen such that it is at least equal to or greater than 5 per cent of the population. In this study, 120 microenterprise owners (approximately 5%), 15 from each village were purposeful selected for the study. Only those who owned mobile phones were included in the sampling frame. In addition, six key informants were purposively selected including two mobile money

service providers from Vodacom and Airtel in Kilimanjaro region, two mobile money service agents in Moshi District and two microentrepreneurs who demonstrated good experience in the use of mobile money services.

Primary data were collected through direct administration of questionnaire and key informant interviews. Secondary data were obtained from various sources such as Business Development Office in Moshi District as well as published and unpublished documents. Quantitative data were analysed using Statistical Package for Social Science (SPSS) software in which descriptive statistics including frequencies and percentages were calculated and used to present the findings. Qualitative data were subjected to content analysis after being sorted and categorized according to the emerging and recurrent issues, and were reduced to small sets of underlying themes. In some cases, the respondents' actual words were quoted directly. The qualitative results were reported to support quantitative results obtained through questionnaire.

3.0 Results and Discussion

3.1 Availability of mobile phone services

This study assessed the ownership of the mobile phones and SIM cards, telecom companies subscribed, the level of mobile network coverage and the available mobile money services. The study findings in Table 2.2 show that most (70%) of the respondents owned single mobile phone handset. This is contrary to Venkatakrishnan and Ngilangwa (2013) who reported that more than 75 per cent of those surveyed in Dodoma region had three or more mobile phones. This might be due to the location differences, this is because often, there is low mobile phone adoption in rural areas compared to the urban areas. In terms of SIM card ownership, nearly two thirds (65%) of the respondents had one SIM card while the rest (35%) had two or three SIM cards. The reasons for owning multiple mobile phones and SIM cards include overcoming network problems, reducing the costs of making calls, poor services and condition provided by some of the telecom companies, making backups for storing contacts, saving the cost through making on-net calls[1] and low phone book capacity (Table

1 On-net calls are calls between the same networks. Off-net calls are calls with other networks.

2.1). Most (70%) of the respondents were Vodacom subscribers followed at a distant by Tigo (15%) and Airtel (15%) whereas none were subscribing to Zantel, TTCL or Benson Company Services. This is somewhat consistent to the country wide statistics in which Vodacom has the highest proportion of subscribers followed by Airtel and Tigo. In addition, the selection of the telecom company by users often depends on the quality of the services, availability of quality network coverage and the cost of making calls (Sife, 2007; Sedoyeka, 2017).

Table 2.1: Reasons for use of multiple SIM cards and handsets (n=120)

Factors	Percentages
Affordable cost involved in making calls	82.5
Poor services and condition provided by some of telecom companies	81.7
Low phone book capacity	78.3
Securing the contacts against loss of important information	75.2

Source: Field Data 2021

There were three telecom companies that offered mobile money services in the study area namely M-Pesa (66.7%), Tigo-Pesa (15.8%) and Airtel Money (17.5%) as shown in Table 2.2. The proportion of M-Pesa (offered by Vodacom) users clearly reflects the proportion of those subscribing to Vodacom services. According to Mas and Radcliffe (2010), most users prefer M-Pesa due to its widespread agent's network and their high level of activity. The mobile phone network in the study area was regarded as being good because the majority (91.7%) of the respondents indicated that the network coverage was either high or moderate.

Table 2: Availability of mobile phone services in the study area (n=120)

Variables		Frequency (n)	Percentage (%)
Number of mobile phones owned	One	84	70
	Two	34	28.3
	Three	2	1.7
Number of SIM cards owned	One	22	18.3
	Two	78	65
	More Than two	20	16.7
Level of network coverage	No network	5	4.2
	Very weak network	4	3.3
	Moderate network	35	29.2
	High network coverage	75	62.5
Telecom companies	Vodacom	84	70
	Airtel	18	15
	Tigo	18	15
Mobile money services	M – Pesa	80	66.7
	Airtel Money	13	17.5
	Tigo –Pesa	19	15.8

3.2. Use of mobile money services

The study findings indicate that almost all (95%) the respondents were using mobile money services (Fig. 1). The high proportion of users because the selection of the respondents purposely targeted those who owned mobile phones. This means every mobile phone subscriber do subscribe to mobile money service as well. In other words, at present, owning a mobile phone allows a person to easily register and use mobile money services.

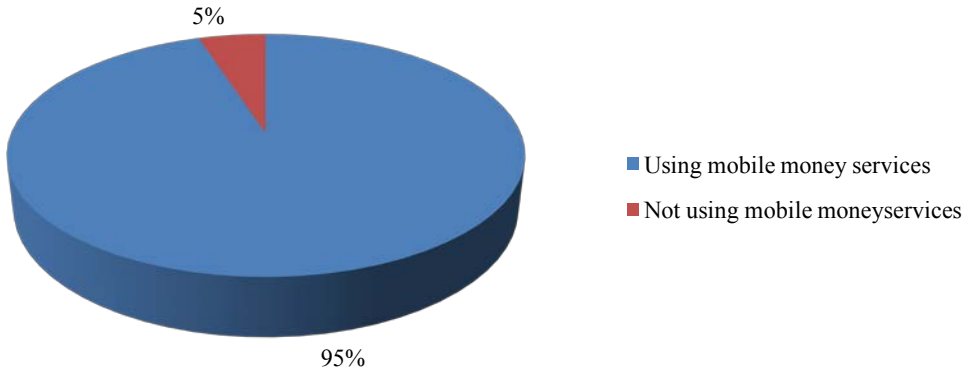

Figure 1: Use of mobile money services (n=120)

3.3 Financial Transactions Undertaken Through Mobile Money Services

The study results on the financial transactions undertaken by micro entrepreneurs in the study area are presented in Table 2.4. The findings in Table 2.4 show that majority of the respondents frequently (often or very often) used mobile money services in recharging airtime (84.1%) making cash transfer (87.5%), paying for bills (91.7%) withdrawing money (91.6%), purchasing commodities (90.8%) and storing money (72.7%).

The ability of purchasing airtime using mobile money services helped the micro entrepreneurs to save time they could waste by closing up their business whenever they are in need of airtime. Transferring cash through mobile money enhances business activities because it hoards interruption to business owners had they used formal banks to send or receive money. The use of mobile money has been the cheapest way of transferring money compared to other alternatives such as the banks and the use of public transport especially the buses (Omwansa, 2009; Sife *et al*., 2010; Inter Media, 2010; Makame, 2014). Mobile money has also simplified the payment of bills which were previous paid by physically visiting the respective offices, sometimes carrying large sums of cash. Similarly, as Jack and Suri (2009) argue, electricity and water bills can be paid with a push of a few buttons instead of traveling to an often-distant office with a fistful of cash and waiting in a long queue. Purchasing commodities in which money is sent through mobile phone and the supplier dispatches the goods saves time and money for travelling to the suppliers. Previous studies (Anurag, *et al.,* 2009; Zutt, 2010; Kennedy and Jacky, 2013; Wamuyu, 2014) have also shown that it is possible to purchase bulk of goods and commodities without unnecessarily traveling during business hours.

Table 3: **Financial transaction undertaking through mobile money services (n=120)**

Variables	Frequency (%)			
	Very Often	Often	Sometimes	Never use
Airtime recharge	58.3	25.8	8.3	7.5
Money transfer	57.5	30.0	5.0	7.5
Accessing bank information	10.0	30.8	25.8	33.3
Bill payment	41.7	41.7	8.3	8.3
Cash withdraw	58.3	25.8	7.5	8.3
Purchasing and commodity dealing	28.3	55.8	6.7	9.2
Savings for the future	28.3	44.2	16.7	10.8

Mobile money was also used as a means of storing money. This means the services are viewed as a variation of branchless banking with the potential for the delivery of financial services outside the conventional banking. As Christine (2007); Mas and Kumar (2008) argue, mobile money allows saving as is the case in formal banks. Furthermore, the study shows that 40.8 per cent of the respondents frequently accessed information from the formal banks. This suggests that those microentrepreneurs who had formal bank accounts could make transactions through their mobile phone.

4.0 Conclusions and Recommendations

Based on the study findings, it is concluded that majority of the respondents owned single mobile phone handsets. Also, micro - entrepreneurs were easily accessing the mobile money services mainly through Vodacom, Tigo and Airtel telecommunication companies. There were three of them that offered mobile money services in the study area namely M-Pesa, Tigo-Pesa and Airtel Money. Through mobile money, the respondents subscribed to various financial transactions such as airtime recharge, money transfer and withdraw, purchasing and dealing with commodities as well as savings. On the other hand, majority of the microentrepreneurs had not managed to receive information from formal banks such as balance inquiry because the use of mobile money services was highly adopted in the area. It is therefore recommended that telecommunication companies should improve their services in rural areas to increase access and use of mobile money services.

Secondly, it is recommended that mobile phone network operators should bring forward affordable prices of services for transactions to the customers.

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