

**THE IMPACT OF MOBILE MONEY SERVICES ON THE
GROWTH OF MICRO, SMALL AND MEDIUM ENTERPRISES
IN NKASI DISTRICT COUNCIL**

**THE IMPACT OF MOBILE MONEY SERVICES ON THE
GROWTH OF MICRO, SMALL AND MEDIUM ENTERPRISES
IN NKASI DISTRICT COUNCIL**

By

Israel Njabu Tumaini

**A Dissertation Submitted to the Faculty of Social Science in Partial Fulfilment
for the Requirement of Award of the Degree of Master of Science in Economics
of Mzumbe University**

2016

CERTIFICATION

We, the undersigned, certify that we have read and hereby commend for acceptance by the Mzumbe University a dissertation entitled *Impact of Mobile Money Services on the Growth of Micro, Small and Medium Enterprises in Nkasi District, Rukwa Region* in partial fulfilment of requirements for award of the degree of Master of Science in Economics of Mzumbe University.

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LIST OF ABBREVIATIONS AND ACRONYMS

ADB	Africa Development Bank
ATM	Automatic Teller Machine
BI	Behavior Intention
BOT	Bank of Tanzania
DOI	Diffusion of Innovation
DR	Doctor
G2P	Government to Person
GDP	Growth Domestic Product
GSMA	Group Special Mobile Association
HL	Horne- Lemeshow
IADB	Inter- America Development Bank
ICT	Information Communication Technology
IT	Information Technology
MIF	Multilateral Investment Fund
MMS	Mobile Money Services
MMT	Mobile Money Transfer
MNOs	Mobile Network Operators
MSEs	Micro and Small Enterprises
MSMEs	Micro, Small and Medium Enterprises
P2B	Person to Business
P2P	Person to Person
PEU	Perceived Ease of Use
PIN	Personal Identity Number
POS	Point of Sale
PU	Perceived Usefulness
ROSCAS	Rotating saving and Credit Association
SIM	Subscribes Identify Module
SMEs	Small and Medium Enterprises
SMS	Short Message Services
SPSS	Statistical Packages Social Sciences
STATA	Statistical Data

TAM	Technology Accepted Model
TCRA	Tanzania Communications Regulatory
TDV	Tanzania Development Vision
TRA	Theory of Reason Action
TRA	Tanzania Revenue Authority
UNCTAD	United National Conference on trading and Development
UNDP	United National Development Programme
URT	United Republic of Tanzania
US	The United State
UTAUT	Unified Technology Acceptance
VAT	Value Added Tax
WTO	World Trade Organisation

ABSTRACT

Mobile money technology has recently spread in developing countries especially in Tanzania. Despite its recent developments, micro, small and medium enterprises are still excluded from access to financial services. This study aimed to assess the impact of mobile money services on the growth of MSMEs in Nkasi District in Rukwa, Tanzania. The objective of the study were; to examine whether sales through mobile money services has influenced significantly on the growth of MSMEs: To assess whether purchases of stock through mobile money services has significant influence on the growth of MSMEs: To examine whether paying for goods and services through mobile money services has significant influence on the growth of MSMEs: To assess whether saving and credit receiving use of mobile money services has significant influence on the growth of MSMEs. The cross-sectional research design was adopted in this study, where stratified random sampling was used to select respondents from population. Questionnaires were distributed to 100 MSMEs owners and managers in different strata namely; Kasu, Chala, Namanye, Kilando and Kabwe. The binary logit regression analysis was used to analyze the data to observe the relationship between variables. The study found that sales, purchases of stock and paying for services through mobile money services had positively significant influence on the growth of MSMEs. Furthermore, the study found that, saving and credits receiving as well as reduced cost are positively insignificant influence on the growth of MSMEs. Also finding reveals that trust worth and safe has negative insignificant influence on the growth of MSMEs. Mobile money services have significant influence on the growth of MSMEs in rural areas. The study recommended that, government should establish financial policy which can encourage MSMEs to use mobile money services for business purpose and move to cashless society in future. Moreover, the government should reveal its tax policy to eliminate Value Added Tax (VAT) on mobile money services which may stimulate the MSMEs to use the services for the growth of their business especially in rural areas in Tanzania.

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CHAPTER ONE

1.1. Background of the Study

Mobile phone technology is most popular telephone service in developing countries and is progressing very rapidly in Tanzania as well as other African countries, Latin America and Asia. Mobile phones are increasingly playing a great role in the spreading out of e-commerce in less developed countries. Mobile phone services include voice, message transmissions, data services, air time transfer, Mobile money services, internet services, calculator, torch and radio (Hassan and Semkwiji, 2011). According to GSMA (2012), there are 25 mobile money providers operating across Africa. Among the East Africa countries, Kenya has the leading number of registered users of mobile money services with 17.8 million which is 71.3 per cent of the total number of mobile phone users. Tanzania is the second with 9.2 million of users of mobile money which represent 43.4 per cent of the total number of mobile phone subscribers in the country (Chale and Mbamba, 2014). Uganda has the third largest number of mobile money users in the East Africa region 2.1 million users represent 8.1 per cent of the total number of mobile subscribers. Rwanda and Burundi have 309000 and 29000 users of mobile money services representing 8.3 per cent and 2.7 per cent of the total number of mobile phone users in those countries respectively (GSMA, 2012).

Mobile money can be broadly categorised into three groups; M-transfer, M-payment and M-financial services. M-transfer involves money transfer from one user to another, normally without any accompanying exchange of goods and services, it may be domestic or international (Chale and Mbamba, 2014). According to Jenkins (2008), M- payment involves money exchange between users with an accompanying exchange of goods and services. It includes persons to a person (P2P), government to a person (G2P) and person to business (P2B). M-financial services are mobile money services in which mobile money is linked to a bank account to provide the user with transactions that they would access at a bank branch. It includes credit, insurance, and saving, bills payment, and money transfer.

Over the past two decades, Tanzania like many other developing countries has been implementing various policies aimed at increasing job opportunities, development of infrastructure as well as income generating activities (Mashene and Rumanyika, 2014). During this period, the private sector participation in economic activities has been promoted and increased. According to URT (2003), the United Republic of Tanzania Development Vision (TDV) 2025 clarifies that Tanzania intends to attain strong economy by 2025. Although in recent years the Tanzania's economy grew fast absolute poverty and inequality are still present. This contrary to the fact that MSMEs wider spread ownership provides more equitable distribution of income and contributes to poverty reduction (Mashimba and Kuhl, 2014). In addition, there has been a growing trend of Tanzanians participation in the micro, small and medium enterprises (MSMEs) sector (URT, 2012). In 2010, there were more than-3 million small businesses, about 1.7 million were in the trade sector, 0.96 million were in the service sector, 0.43 million were in the manufacturing sector and about 17,000 were in other sectors of the economy (URT, 2012). Among users of mobile money in Tanzania are micro, small and medium enterprises (MSMEs). According to Finscope Tanzania (2013), 21 per cent of SMEs used mobile money services to access financial services and 21 per cent of M-PESA users use their account for business in 2012.

Mobile money services could facilitate financial transaction services have enabled MSMEs to overcome key challenges of limited access financial services, liquidity, and cash flow management (Chale and Mbamba, 2014). MSMEs use mobile money services to make and receive payment, pay taxes, make loan repayment and pay various bills. The increased use of mobile devices joined with the development of technologies has enabled customers and MSMEs to conduct a financial transaction, fostering financial access and inclusion which stimulate the growth of MSMEs sector in Tanzania. Mobile phone technology has improved the access to banking services and the mobile money transfer has increased (Munyanyi, 2014).

Finscope Tanzania (2013) indicates that more than half of adult population in Tanzania had access to financial services and over 12 million Tanzanians used mobile devices to remit, save, borrow and pay bills by 2013.

The innovation of information and communication technology result to increase the number of people to use basic mobile phone transfer money, payment for goods and services, access to sophisticated financial services such as credit, insurance and saving account (Donova, 2012). According to BOT (2014), Mobile payment users increased from 29 million to 31 million by the end of June 2014, the number of mobile money agent's increase to 153369 from 119719 in 2014.

The MSMEs play a crucial role in employment creation and income generation in many developing economies (Makorere, 2014). This role is particularly critical in the national efforts to reduce poverty and reducing inequality in the societies. The micro, small and medium enterprises cover non-farm economic activities include manufacturing, mining, commerce and services (URT, 2003). According to URT (2012), small businesses employed about 5.2 million people; of those, 3.4 million people were owners, 0.96 million were paid workers, 0.72 million were relatives and friends, and 79,000 people were apprentices (URT, 2012). According to World Bank (2012) it is estimated that a third of growth domestic product (GDP) in Tanzania originates from the SMEs sector and a large majority of these (98 per cent) are micro enterprises that are informal employing less than 5 people. It employs 30 per cent of the workforce and contributed for a large share of economic activities which foster equitable distribution of income in 2011 (World Bank, 2012). Specifically to micro, small and medium enterprises (MSMEs) this account for approximately 33 per cent of total employment and about 35 per cent of total GDP (Marwa, 2014).

In developing countries, large population is excluded from formal financial system. For instance, Tanzania was one of whose highest population of citizen was excluded especially in rural area about 91 per cent in 2008 (Cagri and Gidvari, 2014). This is mainly due to lack financial infrastructure and other facilities which enable the services like network problem, limited number of payment instrument, lack of ATMs or Point of sale (POS), shortage of electricity, security and trust which led to high cost on financial services (FITS, 2012). The major obstacle of MSMEs growth is limited access to financial and effective use of the financial product and services. As the access to financial services requires collateral, registered business, credit history which most of MSMEs lack, mobile phone innovations help majority to access

financial services through their phones. Mobile money is used strategically to enable people without a bank account to carry out financial transactions (Mauree, 2013).

The bank of Tanzania (BOT) motivated the use of mobile money with the aim to enhance initiatives in moving Tanzania to be cashless society. The BOT also set a goal to increase the number of people who access financial service from 27% in 2009 to 50% in 2015, but two years later the goal was not only achieved but exceeded to 54%. However most of the societies in Sub-Saharan Africa have very strong cash base heritage and cash use as means for carrying out all transactions, which suggests that, cash is the key to doing business (Bangens and Sorberger, 2011). Adoption of mobile money services in rural and urban areas has been influenced by risks of informal methods of transfer money, poorly developed transport system and expensive money transfer (Mauree, 2013). The recent growth of mobile money services has allowed millions of people who are otherwise excluded from the formal financial system to perform financial transactions relatively cheaply, securely and reliably. In 2011 Mobile money services achieved the broadest success in Sub-Saharan Africa where 16% of adults were reported to use a mobile phone in the past 12 months in 2011 to pay a bill or send or receive money (Mauree, 2013). However, the impacts that the mobile services offers especially to the rural communities remain to be a critical gap that studies are called to address.

1.2. Statement of the Problem

The introduction of mobile phone services especially money transfer system in developing countries offers an alternative means of providing such cash transfer, by allowing the money to be transferred via a mobile phone (Aker et al., 2012). Physical cash withdrawals and deposits are facilitated by network retail agents (Senso and Verkatakrishtanal, 2003). The number of mobile phone subscribers has increased from 126464 in 2000 (Venkatakrishtnan, 2013) up to above 27 million subscribers in 2013 (Masamila 2014) and 40 million in 2015 (URT, 2015; TCRA, 2015). Mobile money is the only available feasible means to provide a mass market alternative to branches banking in Tanzania. The mobile network operators (MNOs) in Tanzania such as Tigo- Pesa with 28% users, 55% for M- Pesa, 1per cent for Ezy Pesa and

16per cent for Airtel Money as well as current Halotel Money (Intermedia, 2012). In 2013 there were 134155 mobile money agents serving 40 per cent of the population and occupying 19 per cent landmass. There were 30.3 million mobile money subscribers in 2013 (Venkatakrishnan, 2013) and over 700 million transactions worth of US\$ 12.3 billion that has been conducted since mobile money was launched in 2008 (Masamila, 2014).

In 2013, consumers used mobile money for the business transaction, with 21 per cent users M-Pesa and 12 per cent being users of Tigo Pesa and Airtel Money in 2013 (Economides and Jeziorski, 2014). The increase in services such as transfers, bill payment, and other payment, provide evidence that access to mobile money services has facilitated risk sharing by significantly reducing the transaction cost and increasing profit to MSMEs. MSMEs face different constraints include insufficient working premises, limited access to finance, low entrepreneurship skills, lack of business training, market shortage, low technological development and access to information. As MSMEs dominate in sub-Saharan Africa and liquidity and cash flow management are the key bottleneck for MSMEs operation, the fast diffusion of mobile money is viewed as a potential key tool for facilitating the financial transaction (URT, 2003).

Most of these studies conducted in East Africa and particularly in Tanzania on the impact of mobile money services on the growth of SMEs are done in urban centres such as Nyaga (2013) in Naivasha Municipal in Kenya, Kone (2014) in Nakuru Business District in Kenya, Chale and Mbamba (2014) in Kinondoni Dar es salaam in Tanzania as well as Msamba (2016) in Moshi Kilimanjaro in Tanzania. The results from studies conducted in urban centres cannot be used to generalize the impact of mobile money services on MSMEs in rural areas since the two differ in terms of economic, social and cultural aspects. This calls for further investigation to widen the knowledge base of policy makers and stakeholders. By using the cross section study design, the study was designed to fill a gap by assessing and provide empirical information on the impact of mobile money services to the growth of micro and small enterprises in Nkasi district, which is a rural area.

1.3. Objective of the Study

1.3.1. Main Objective

The main objective of the present study was to assess the impact of mobile money services on the growth of Micro Small and Medium Enterprises (MSMEs) in Nkasi district Council.

1.3.2. Specific Objective

Specifically, the study;

- i. Examined whether sales transaction through mobile money services has influence significant on the growth of MSMEs.
- ii. Assessed whether purchases of stock through mobile money services has influence significant on the growth of MSMEs.
- iii. Examined whether paying for goods and services through mobile money services has influence on the growth of MSMEs.
- iv. Assessed whether saving and credit receiving through mobile money services has influence on the growth of MSMEs.
- v. Examined whether mobile money services reduce transaction cost of MSMEs.
- vi. Examined whether mobile money services is trust worth and safe to MSMEs

1.4. Research Hypothesis

H₀: Sales through mobile money services has no significant influence on the growth of MSMEs.

H₀: Purchases of stock through mobile money services has no significant influence on the growth of MSMEs.

H₀: Paying for goods and services through mobile money services has no significant influence on the growth of MSMEs.

H₀: Saving and credit receiving use of mobile money services has no significant influence the growth of MSMEs.

H₀: Mobile money services have not reduced transaction cost of MSMEs.

H₀: Mobile money services are not trust worth and safe to MSMEs

1.5. Significance of the Study

The findings of this study contribute to the knowledge and policy implementation on the impact of mobile money on the growth of micro, small and medium enterprises in Tanzania, to both small business stakeholders. The study adds value to the existing literature and establishes the gaps for future research on the same or similar topic by suggesting areas that need further studies to be conducted. This helps policy maker to come out with possible alternative policy intervention to improve micro, small and medium enterprises in Tanzania. The successfully completion of this study constitutes the fulfilment of the conditions for the award of a Master of Science in Economics degree offered by Mzumbe University.

1.6. Organisation of the Dissertation

The following was organisation of the dissertation; Chapter one present background of the study, research problem, objectives, hypotheses, significant of the study and organization of the dissertation; chapter two presents the empirical studies that have been done by different researchers and theoretical on the impact of mobile money services on the growth of MSMEs. It involves the systematic identification, place, and analysis of document containing information related to the research problem being investigated. Msabila and Nalaila (2013) define literature review as a written summary of journal articles, books and other documents like conference papers and government documents that describe the past and the current state of information on the topic of the study (Msabila and Nalaila,2013).The theoretical review provides description and summary of different theories explaining the relationship between the variable in the study and empirical literature review present description and summary of the early studies connected to the problem, comparison, and conceptualization of the current study in relation to the early studies (Kothari,2004); chapter three presents the description of the procedures and strategies that have been used in the study. The discussion focuses on research design, area of the study, targeted population sample and sampling procedures, research instrument and techniques, data collection and data analysis; Chapter four presents findings on the

impact of mobile money services on the growth of micro, small and medium enterprises in Nkasi District in Rukwa region. Section 4.1 presents demographic characteristics of respondents; section 4.2 presents the description of specific objectives. In this study, first objective was meant to examine whether mobile money services improved sales transaction; second objectives ought to assess whether mobile money services increased purchases of stock; third objective was designed to examine whether mobile money services improved the process of paying for goods and services. The fourth objective in this study was designed to assess whether the use of mobile money services helped the small and medium enterprises in saving and credit receiving, whereas the fifth objective sought to examine whether mobile money services reduced transaction cost; and lastly to examine whether mobile money services is trust worth and safe. Section 4.3 presents the logit regression analysis; Chapter five presents the discussion of findings obtained from chapter four, it is observed that sale, purchases of stocks, payment for goods and services, saving and credit receiving as well as reducing cost variables have positive relationships while trust worth and safe have negative relationship in the study. The result revealed that regressors variable affect the growth of Micro, Small and Medium Enterprises in Nkasi District; Chapter six presents the conclusion of the study recommendations, policy implication and limitations and scope for further research.

CHAPTER TWO

LITERATURE REVIEW

2.1. Definition of Terms

2.1.1. Mobile Money

WTO (2013) defines mobile money as payment services provided under financial regulation and performed from or via the mobile devices. Mobile money is being used for sending money, access for other services such as saving, bills payments, credit and insurance. Individuals and businesses develop financial record with mobile money, the ability to provide credit can expand because financial institution will be able to assign credit score. Also defined as financial transaction that conducted using mobile phone where value is stored (e-money) in an account associated with a SIM card. MSMEs can deposit cash into mobile account, make transaction between accounts and withdraw fund as cash mobile money transaction are compatible with basic phones and do not require internet access(Steward and Husain, 2013)

Mobile money refers to electronic money on mobile devices which can allow transactions through mobile devices and can store money wallets (Swarray, 2012) Mobile money transfer that started as a tool for small borrowers to receive and repay their loans has turned out to be a productive for business and way to get money from informal storage of money. Mobile money refers to service whereby customers use their mobile devices to send and receive or transfer money electronically (Senso and Venkatakrishana, 2013). Mobile money allows users to make, deposit and transfer fund and purchase of some limited goods and services using the mobile phone (Munyegera and Matsumoto, 2014).

According to UNCTAD (2012), mobile money refers as money stored using SIM (Subscriber Identity Module) in a phone as an identifier as opposed to an account number in conventional banking. Notational equivalent is in value issued by mobile network operators (MNOs) and kept in a value account on the SIM within the mobile phone that also transmit or transfer payment instructions while corresponding cash

value safely held elsewhere, normally in a bank. In this study mobile money services was define to electronic money on mobile devices which can allow transactions through mobile devices and can store money wallets.

2.1.2. History of Mobile Money in Tanzania

In Tanzania there are five main mobile money platforms namely; Airtel money, Vodacom M-pesa, Tigo pesa, Easy Pesa and Halotel Pesa. Airtel was the first mobile network operator to introduce a phone to phone airtime credit transfer services ‘Me2U’ in 2005 (Kaffenberger and Butt, 2013). Airtel partners with Citigroup and Standard Chartered Bank provided mobile services including bill payment, payment of goods and services, phone to phone money transfer and mobile wallets. In 2008 Vodacom launched the second East Africa implementation of Vodafone m- money platform, M-Pesa (Paula and Martinez, 2014) and Zantel launched Z-pesa later re-launched to Easy pesa, more mobile network operator joined such as Tigo Pesa in 2010 and Halotel Pesa in 2015.

2.1.3. Micro Small and Medium Enterprises (MSMEs)

The term SME has a wide range of definitions varying from country to country and between the various reporting small and medium enterprises statistics. Some common criteria used to define SMEs are net assets, number of employee and level of sale and investment (WTO, 2013)

According to Gibson and Vaart (2008) different multinational organisation define SMEs as follows; World Bank defined SMEs as a firm with 300 employees or maximum revenue of 15 million dollars, Multilateral Investment Fund and Inter-America Development Bank (MIF-IADB) defines as a firm with 100 workers or maximum revenue of 3 million dollars. The UNDP defined SMEs as a firm with a maximum of 200 employees while Africa Development Bank uses a threshold of 50 employees and Norway the threshold for SMEs is 100 employees.

According to SMEs Tanzania policy (2003), SMEs means small and medium enterprises, it sometimes refers to micro, small and medium enterprises (MSMEs) that cover non-farm activities mainly manufacturing, mining, commerce, and

services. The study adopted definition in the context of Tanzania where micro enterprises are those engaging up to 4 people, in most case family members or employing capital up to TZS 5 million. The majority micro enterprises fall under the informal sector. Small enterprises are mostly formalized which employ between 5 to 49 workers or capital investment from TZS 5 million to TZS 200 million. Medium enterprises employ between 50 and 99 people or capital investment from TZS 200 million to TZS 8000 million(URT, 2003).The table 2.1 show the categories of enterprises in multilateral institution and table 2.2 shows categories in Tanzania.

Table 2.1: SMEs Definitions Used by Multilateral Institutions

Institutions	Maximum number of Employee	Maximum Revenue or turnover in million dollar	Maximum Revenue in dollar	Asset
World Bank	300	15	15	
MIF-IADB	100	3	None	
ADB	50	None	None	
Asian Development Bank (ADB)	No official definition use only definitions of individual national governments			
UNDP	200	None	None	

Source: Gibson and Vaart (2008)

Table 2.2: Categories of Enterprises in Tanzania

Category	Number of Employees	Capital Investment in Machinery (TZS)
Micro Enterprises	1-4	Up to 5 million
Small Enterprises	5-49	Above 5 million to 200 million
Medium Enterprises	50-99	Above 200 million to 800 million
Large Enterprises	100+	Above 800 million

Source: URT, 2003

2.2. Theoretical Literature Review

Many theories have been developed on information technology adoption such as Ajzen and Fishbein (1975) Theory of Reason Action (TRA), Davis (1989) Technology Acceptance Model (TAM), Rogers (1995) Diffusion of Innovation (DoI) and Unified Technology Acceptance User Theory (UTAUT) (Chale and Mbamba, 2014).

The study adopted Ajzen and Fishbein (1975) Theory of Reason Action (TRA), Davis (1989) Technology Acceptance Model (TAM) and Rogers (1995) Diffusion of Innovation (DoI) to the impact of mobile money services on the growth of MSMEs

2.2.1. Theory of Reasoned Action (TRA)

Ajzen and Fishbein's (1975) Theory of Reasoned Action (TRA) was developed in 1975 to explain the relationship between attitudes and behaviours within a human action. The theory suggests that attitudes and subjective norms are two factors that determine intention for individual's to engage in a given behaviour. The theory defines attitude as an individual's positive or negative feeling about performing the target behaviour. A person who believes a particular behaviour to have a positive impact on him or her will have a positive attitude towards that behaviour, such attitude influence one's behaviour through the formation of intentions in several ways. Also subjective norms defined as person's perception that most people who are important to him or her think he or she should or should not perform the given behaviour (Mtebe, 2014).

The TRA suggests that individual always have control of whether or not to perform the behaviour. The theory is useful in predicting how individual behaves based on their pre-existing attitudes and behaviour intention. However the theory have critics that it concerned to individual level behaviour and does not consider environment and social factors that might influence the behaviour. From the theory MSMEs owners use mobile money services if they beliefs that that services resulted to outcome which would benefit organisation or an individual, then intentional or actually participate in particular behaviour that the usage of mobile money services.

2.2.2. Technology Acceptance Model (TAM)

Technology acceptance Model was developed by Fred David in 1989. The model is rooted in the Theory of Reasoned Action (TRA). TAM model is considered to be the most influential and commonly employed theory describing an individual acceptance information system (Lee et al., 2003). Originally, the model was made with four variables; perceived usefulness, perceived ease to use, attitude toward using and actual system uses. Later two variables were added in the model which were external variables and behavioural intention (Erasmus et al., 2015). Also the theory suggests that perceived usefulness and perceived ease of use are affected by external variables (Alharbi and Drew, 2014).

The TAM indicates that perceived usefulness and perceived ease of use predict attitude toward using mobile money services, perceived usefulness also influences the users' behavioural intention (BI) using mobile money services, intention to use also determines the actual use of mobile money services.

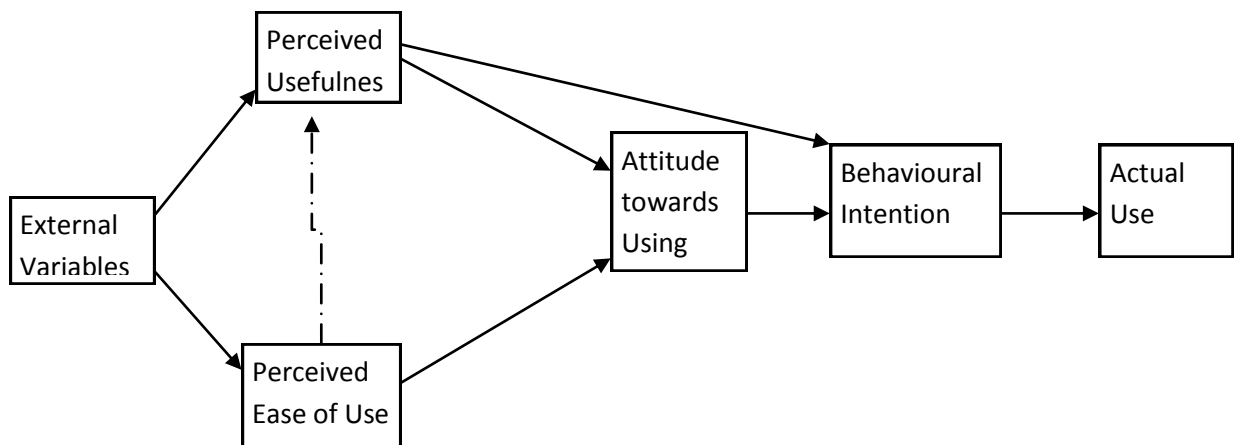


Figure 2.1: Technology Adoption Model

Sources: Park (2009)

(i) Perceived Usefulness (PU)

Perceived Usefulness is defined as the degree to which a person believes that using a particular system would enhance his or her performance (Erasmus et al., 2015). According to the model, perceived usefulness is a key reason to technology adoption,

the expected benefits to MSMEs include lower administration cost, increased internal efficiency, enhanced relationship with business partners, improved competitiveness, improved quality of information, access to bank account, fund transfer as well as bill payment (Riyadh et al., 2009).

(ii) Perceived Ease of Use (PEU)

Perceived Ease of Use (PEU) is defined as the degree to which a person believes that using a particular system would need little effort or no effort in using technology (Eramus et al., 2015). The model hypothesised that the attitude of ease of use is the major determinant of whether the user will use or reject the system. The user believes that the system which is easier to use is more useful to his or her job performance. Perceived ease of use determines both perceived usefulness and attitude towards using the system.

(iii) Attitude Toward Using

Attitude toward using is defined as an individual's positive or negative feeling about performing the target behaviour (Fadhena et al., 2015). According to TAM both perceived usefulness and perceived ease of use influences the users' attitude toward a mobile money services. Hence usefulness and ease to use then develop a positive attitude toward services (Fethena et al., 2015). In this study usefulness of mobile money services had influence on the growth of MSMEs.

(iv) External Variable

TAM model had some limitations in explaining the reason for which person would perceive a given system useful, so Venkatesh and Davis proposed addition variable to the original TAM model, they considered other factors referred to as external variables that might influence the beliefs of person toward a system, such variables are system characteristics, user training, user participation in design and the nature of the implementation process (Chullur, 2009). TAM was developed to explain and predict particular IT usage. The model has been used by many researchers in

studying adoption and diffusion of various information system technologies (Riyadh et al., 2009).

TAM model has some of limitation first TAM may not predict technology used across all culture in the world. This implies that culture has impact on the adoption of technology. Secondly the model could not work well for modern and complex technology. The explanatory power of the TAM for perceived ease of use, might weaken as the competency of the users increases (Han, 2014) and the thirdly limitation according to Bagozzi (2007) is that intentional actual use and observed that behaviour could not be considered as a terminal goal. Then he suggested that behaviour should be treated as means to a more fundamental goal (Chullur, 2009).

2.2.3. Diffusion of Innovation Theory

Diffusion of Innovation theory by Rogers (1995) is defined as an idea, practice or objective while diffusion is the process by which innovation or perceived new technology is communicated through certain channel over time member of a social system. Diffusion of Innovation theory includes five significant innovation characteristics namely; relative advantage, compatibility, complexity, trialability and observability. Relative advantage defined as the degree of which innovation is considered better than the existing method of performing the same task. The theory suggests that relative advantage has a positive influence on behaviour intention. Compatibility is defined as the degree to which adopting innovation is compatible with what people do, existing values, experiences and needs. Complexity is defined as the degree to which innovation is perceived as relatively difficult to understand and use. Trialability defined as the degree to which innovation may be experienced on a limited basis before making (or rejection) decision. Observability is defined as a degree to which results of an innovation are visible to other (Tobbin, 2010). Some similarities can be drawn between relative advantage and perceived usefulness, complexity and perceived ease of use to the extent that some researcher identifies that TAM as a subset of Diffusion of Innovation Theory. Rogers's diffusion of innovation theory is the most appropriate theory among all theories for investigating the adoption of technology (Tobbin, 2010).

The present theories (TRA, TAM and DoI) provide a cornerstone for understanding of the impact of mobile money technology on the growth of micro, small and medium enterprises. The study included the key determinant of TAM that is perceived usefulness and perceived ease of use and some aspect of Diffusion of innovation theory that is a relative advantage, compatibility and complexity. The theories suggest that an individual engage in particular behaviour is based on the expected outcome. Perceived benefit is a key reason for technology adoption, perceived benefit to adoption of mobile money technology to MSMEs include low administrative cost, increased internal efficient in purchases of stock, receiving payment, payment of goods and services, credit and servings, improved relationship with partners, improved competitiveness, improved quality of information, access to bank account, fund transfer and bill payment. Then result to the growth of MSMEs in term of sales, revenue and profit.

2.3. Empirical Literature Review

Different studies have been conducted to assess the impact of mobile money technology on the growth of micro, small and medium enterprises.

Nyaga (2013) investigated the impact of mobile money services on SMEs growth. Survey questionnaires were used to obtain data in Naivasha Municipal in Kenya for the period 2013. The findings show that mobile money services have a positive influence on sales. Effectiveness and reliability contribute small and medium enterprises growth. However, the study also shows that many of the players in the SMEs sector do not use the services for saving, to access credit or have bank accounts therefore creating opportunity for mobile money. The study found that mobile money users are not familiar with mobile-bank transactions on loan applications and repayment and choose the normal banking system to mobile banking when applying for loans and advances.

Wanyonyi and Bwisa (2013) investigated the impact of mobile money transfer services on the performance of micro enterprises in Kitale municipal in Kenya. The study was based on a survey of 36 micro enterprises, from agriculture, service and processing sectors. Micro enterprises studied were those that have been in existence

before commencement of Mobile Money Transfer (MMT) in 2007. The data was analyzed using chi-square to set up the relationship between Mobile Money Transfer use and business performance. The key findings from this study show that business to business transfer when making purchases from supplier, and consumers to business transfers when consumers buy from the business and for debt collection for credit sales contributed to improved performance of the micro enterprises.

Kones (2014) investigated the factors influencing the use of mobile banking by small and medium Enterprises in Nakuru Central Business District in Kenya. This study based on a cross-sectional survey conducted through the administration of questionnaires.

The findings revealed that trust and security, perceived cost, perceived convenience and information communication technology knowledge and skills had a positive influence on a use of mobile banking. The study wind up that security was one of the major factors when it came to using mobile banking, followed by usefulness and trust.

Onyango et al (2014) determined the impact of adoption and use of mobile phone technology on the performance of micro and small enterprises in Kisii Town, Kenya. A cross-sectional survey research design and stratified sampling were used to identify the micro and small enterprises and simple random sampling method was used to select the respondents and questionnaires placed to collect the data. The survey questionnaire was adopted to collect data. Multiple correlation analysis was adopted to assess the relationship between the regressor and regressand variables. The main findings shown that there mobile phone technology has influence on the performance of micro and small enterprises and these included; better response to customers, improved communication with suppliers or customers, ability to store and retrieve customer data fast, and lower operational costs.

Kikulwe et al. (2014), analyzed impacts of mobile money technology on the welfare of smallholders from households in Kenya, using panel survey data and regression models. The study found that mobile money had a positive significant on household income.

Also mobile money services are used for remittances receiving from relatives and friends. These contribute to household income and reduce risk and liquidity constraints, hence promoting agricultural commercialization. Mobile money services users apply more for purchased impacts, market large propositions of output and have profits than on- users of mobile money services. These results revealed that mobile money can help to overcome some of the smallholder market access limitations that hinder rural development and poverty reduction.

Mbiti and Weil (2011), examine how M-PESA is used as well as its economic impacts analyzing data from two waves of individual data on financial access in Kenya. Data was collected for finances survey. Key findings show that increased use of M-Pesa lowers the propensity of people to use the informal saving mechanism such as ROSCAs, but raises the probability of their being banked. By using aggregate data, they calculate the velocity of M-Pesa of between 11.0 and 14.6 present to person transfer per month. In addition, they found that M-Pesa causes a decrease in the price of care posting money transfer services such as the Western Union. Also there was little evidence that people used their M-Pesa accounts as a place to store wealth, their result suggest that M-Pesa improves individual outcome by promoting banking and increasing transfer.

Muyegera and Matsumoto (2014) investigated the impact of financial innovation on household welfare, by using household survey panel data from rural Uganda. The results prove that adapting Mobile Money services increase household per capital consumption by 72 per cent. The mechanism of this impact is facilitated by remittances. User households are likely to receive remittances more frequently and total value receive is significantly higher than that non- user households.

Mramba et al. (2014) investigated on mobile phone usage patterns among street vendors in Dar es Salaam city in Tanzania. Data were collected from 174 mobile street vendors in Dar es Salaam, stratified and convenience sampling was employed. Data were subjected to detailed exploratory analysis through descriptive procedures and reliable analysis was carried out by using Cronbach's alpha. The study found that among street vendors, the mobile phone is commonly used in source perspectives

and little in business specifically for mobile money and business communication. Also result shows low perceived difficulties and high benefit of mobile.

Chale and Mbamba (2014) examined the role of mobile money services on the growth of SMEs in Tanzania; Data was collected from Kinodoni in Dar es Salaam region, through a questionnaire to 100 respondents. Multiple regression analysis was used to test the role of increased volume of sales, efficiency in purchases of stock, reduce time in the processing of payment, paying goods and services, improved tendency of savings and money transfer on trade growth in term of market share, revenue, and profitability. They found that small and medium enterprises used mobile money services in a various way for a business purpose which include sales transaction, efficient of purchases of stocks, receiving payment, payment for goods and services, saving and money transfer that influence their business growth. The study concluded that there is a need for SMEs to continue using mobile money in their business so as to enhance their business and reduce some cost such as the cost of travelling, money transfer and time to processing payments.

Madila and Msamba (2016) determined the role of mobile money in supporting the growth of SMEs in Tanzania. The study was carried out in Moshi urban in Kilimanjaro region. A total of SMEs owners were randomly selected, primary data were collected through interview and using semi-structure questionnaire followed by focus discussion. They found that users benefit from the use of mobile money in the development of their SMEs and majority of SMEs which use mobile money services are wholesale followed by retailer shops. Also, the factors that influence the adoption of mobile money in SMEs among others are the cost of services and ease to use. The study concludes that the cost of using mobile money should be reduced to attract more SMEs to use mobile money; it will increase the competitive advantage with the financial institution.

Frederick (2015) examined the effects of mobile money usage on enterprise profit in Zambia. The instrument variable strategy was used as the instrument to address the selection bias in an adoption of mobile money services.

The main findings show that mobile money as a positive net marginal benefit for micro enterprises, it increase profit to range from 36 per cent 74 per cent.

Ngaruiya et al. (2014) examined effect of mobile money transaction of financial performance of small and medium enterprises in Nakuru central business in Kenya. The study employed descriptive research design; purpose sampling was used to select sample size, questionnaires were used to correct data from despondence. The study found that mobile money transaction has a significant effect on sales revenue.

Nyaga and Okonga (2014) investigated on mobile money service if have any impact on SMEs performance in Naivasha in Kenya. A cross section research design was adopted and 113 sample sizes were selected. The study found that mobile money services transaction cost were expensive but business owners confirmed that services positively contributed to their business growth.

Swarry et al. (2012) examine the bridging the financial gap and unlocking the financial of informal business through mobile money in four east African countries. The study used a censure sampling method in 12 countries. The study found that mobile technology capitalized to create financial inclusion of informal sector. Aldo found that mobile network operators could use transaction data generated from mobile money services to generate transaction history, trial balance that may be used for business plans and gaining access to formal financial business.

Rumanyika and Mwashene (2014) examined on impediment of E-commerce adoption among small and medium enterprises in Tanzania. 12 current literature reviews (2010-2014) were used to find out impediment of e-commerce adoption among SMEs. The study found that poor telecommunication infrastructure, poor e-commerce security systems, lack of IT education and training, poor e-readiness and social cultural believes and lack of IT experts are significant impediments of e-commerce adoption among SMEs. Moreover the study recommended that policy makers should view impediment as interrelated obstacles of e-commerce adopted among SMEs in Tanzania which need integrated effort and strategies when addressing them.

Ongango et al. (2014) determined the impact of adoption and use of mobile phone technology on the performance of MSEs in Kiisi municipality in Kenya. Cross section survey research design was adopted to identify MSE owner's perception on the adoption and use of mobile phone technology. Stratified random sampling was used to select 400 sample size from MSEs's population through questionnaires. Multiple analysis regression was used to access the relationships among independent and dependent variables. The study found that there is an impact on adoption and use of mobile phone technology on the performance of micro and small enterprises.

Jussiana (2015) investigated the impact and importance of mobile money services in business as well as type of customers who use mobile money. The study used literature reviews, empirical experience analysis and quantitative analysis of business and consumer survey data from world. The study found that easy to use bring solution to rural areas access finance, Also business influenced by speed and low cost of financial transaction while barriers of using mobile money based on limits on values of transaction. Furthermore business used mobile money for payment options, and customer with high income and education are likely to use mobile money services more.

Njau and Njuga (2015) examined the mobile usage and its impact on micro enterprises performance in Moshi municipality Kilimanjaro, Tanzania. A descriptive research design was employed where 70 micro enterprises were randomly selected by using questionnaire and interview techniques. Both qualitative and quantitative data were collected. The quantitative data were analysed into percentage while qualitative data were analysed by using content analysis. The study found that mobile money services contribute positively to micro enterprises business performance, 87 per cent of the respondent used mobile phone services mainly for business. Also found that the more use of mobile phone services by micro enterprises the more the business success. However the study shows that low perceived of using mobile phone services, the study suggested that there is a need for awareness campaigns on the user of mobile phone in business activities at grassroots level.

Beck et al. (2015) study on access to mobile money, trade credit and economic development used novel enterprises survey form Kenya. The study adopted dynamic general equilibrium model, the study found that there is strong positive relationships between use of mobile money to pay suppliers and access to trade credit, also mobile money dominated fiat money so as to avoid theft but it is high expensive in term of cost. Moreover availability of mobile money technology increases the entrepreneurial sector by 0.33 per cent to 0.41 per cent.

Batisha and Vicente (2012) investigated the access and the impact of randomized mobile money dissemination in rural Mozambique. The study used designed and conducted field experiment. The study found that financial literacy and trust outcome were positively affected by the treatment group. Also the willingness of transfer money was increases due to present of mobile money services. Furthermore the study found that mobile money substitute traditional alternative for both saving and remittance.

2.4. Conceptual Framework

Based on the literature review the impact Mobile Money Services on the growth of MSMEs depends on (i) Perceived Sale (ii) Purchases of stock(iii) Payment of services (iv) credit and saving (v) Reducing cost and (vi) Trust and safety as regressors. The regressand in this study was growth of MSMEs.

2.4.1. Sales Transactions

The convenience and speed of entry at the point of sale, which is essential to capture transaction details and buyer's payment authorization, the speed of exchange to issue process payment instruction and confirm transaction and security. According to Bangen and Serberg (2011), mobile money saves time and is safe. The SMEs owners stay away from wasting time lining up waiting for bank services, therefore, more time is used up in the shops and increase sales amount. Seller are willing to invest in the system which an able mobile money transaction unless their buyer demand while buyer will not use the services unless seller accept them (Dennehy and Sammon,

2015). Therefore for mobile money services to be used both parts should agree for transaction that is MSMEs and buyer.

Mobile money services reduce costs, increase income and increase availability and mobility, they can help to extend social and business network and be clear substitute for journey for brokers, traders, and other business intermediaries (Kone, 2013). This study examined whether selling through money mobile services influence the growth of MSMEs.

2.4.2. Purchases of Stock

Purchases refer to activities acquiring goods and services from nominated supplies it include ordering, receipt and payment. Bangen and Serberger (2011) suggest that mobile money services help to ease ordering goods and services, speeder logistics and enable a business to lessen the time between order and delivery time hence improve liquidity. Furthermore Mobile money may be used to pay goods and services and purchase from suppliers (Simiyu, 2015).

According to Dennehy and Sammon (2015) majority of mobile phone users also resisted as mobile money services users for business purpose in purchases of inventory and paying goods and services.

2.4.3. Payment for services

Mobile payment is a service allowing unbanked people to buy or sell goods and services at a merchant shop or store using their mobile wallet through their phones instead of cash as well as paying utility bills. According to GSMS (2010) mobile payment means the movement of value that made from a mobile wallet accrue mobile wallet initiated using a mobile phone or transfer to pay for goods or services either at point of sale or bill payment. The seller requests payment via the telephone services by SMS with a buyer number. The telephone service provider then sends an SMS to the buyer with a bill of the reference number and then customer authorized payment. Finally, the telephone service provider sends a payment notification with details to both the seller and the buyer (Paula and Martines, 2011).

Mobile payments platforms allow for the sender immediately receive verification data of the recipient as the receiver is getting this payment. This information is stored within the phone short message services (SMS) storage option allowing for future recovery and tracking if there required. Also, information services that can be made through mobile money include a request for and viewing of bank statements requesting for bank balance and cash services (Bangen and Serberg, 2011).

This study explored whether payment for services through mobile money services had influence on the MSMEs growth.

2.4.4. Saving and Credit Receiving

Saving and credit refers to mobile financial services where by mobile phone is correlated with bank account (FITS, 2012). Also saving can means the storage of client money in a bank or any store of money such as the balance of electronic money within a mobile wallet (GSMS, 2010). In Tanzania majority of MSMEs face a challenge of accessing financial and effective use financial product and services as the major obstacle to its growth since formal financial institutions need formal registration of businesses, collateral as well as credit history (FSDT, 2012). Therefore mobile money services try to cross the gap by allowing MSMEs to access credit and earn interest on saving through mobile phone. This MMS enable MSMEs to expand and achieve financial stability in day to day transaction. Saving transaction is not very prevalent as 90 per cent of the money leaves the network within 5 days of being cash in compare to transfer. Also, 1 per cent of users keep the money in the network for long than a month which indicates a low contribution of mobile money transaction to long saving rate (Economides and Jeziorski, 2014). Also, Mobile phone cash transfer which is a tool for small borrowers for receiving and paying their loans has become lucrative in business and way to get money from under the pillow (Hawaiju, 2013). The study assessed whether saving money and credit receiving through mobile money services help the MSMEs to grow.

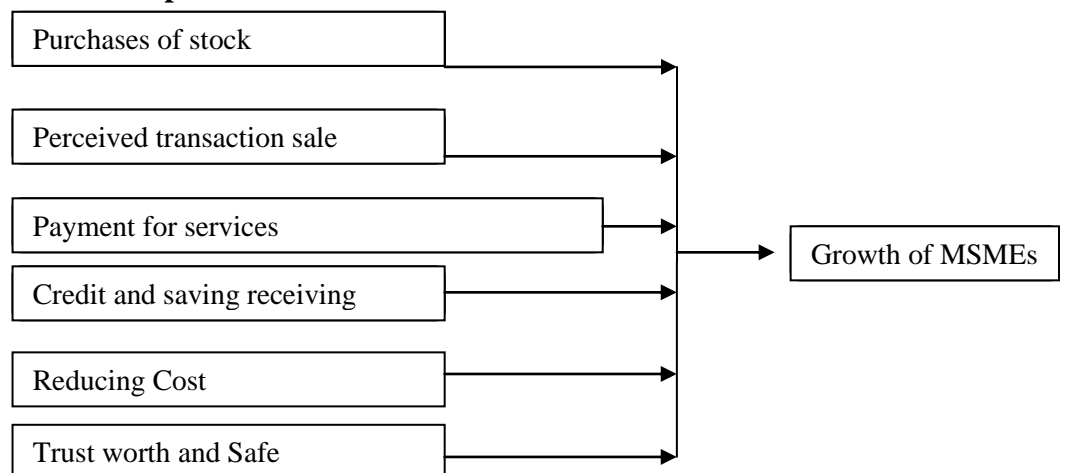
2.4.5. Reduce Transaction Cost

Transaction cost refers to all direct and indirect charges which MSMEs incur for using mobile money services. These charges include transport cost, cost of sending money and transfer etc. Most of businesses agree that mobile money had improved the way of operating the business in term of saving and facilitating financial transactions (Swarry, Ndiwala and Stork, 2012). Mobile money services to consumers its convenience and time saving which reduce physical contact with service provider, this led to reduce cost to access and use banking services hence better financial management in the business. The study examined whether mobile money services reduce transaction cost of MSMEs in rural areas.

2.4.6. Trust and Safety

The risk arise on uncertainty that customer face when they cannot foresee the consequences of the purchases decision (Yu, 2009).it is obvious that user's target to use mobile money services is affected by their perception of risk, whether or not such risk actual exist which may affect the performance of SMEs. That is, if mobile money has a high safety then SMEs owners can trust the technology and led to its performance. The study examined whether mobile money services were trust worth and safe to MSMEs.

Figure 2.2: Relationships between Variables



Source: Researcher's construct (2016)

Table 2.3: Expected Sign of Variables

Variable	Expected Sign
Sale Transaction	Positive influence (+)
Purchases of Stocks	Positive influence (+)
Paying for Services	Positive influence (+)
Saving and Credit Receiving	Positive influence (+)
Reduce Cost	Positive/Negative influence (+/-)
Trust worth and Safe	Positive influence (+)

Source: Researcher's construct (2016)

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Research design

The research design is a plan on how a study had been conducted or a detailed outline of how the investigation should take place. It specifies conditions and optimum research procedure to be followed in conducting a research study (Msabila and Nalaila, 2013). It is defined as a study which gathers information at only one point in time (Economides and Jeziorski, 2014). It is no repetitive as it is carried out at a particular point. Moreover, it facilitates the study to examine a section of the population of a single time period (Kothari, 2004).

The study adopted cross-sectional research design to access the impact of mobile money on the growth of MSMEs in Nkasi district. A cross-sectional research design has the advantage of saving time and collecting data at a single point in time; that is data has been collected in a particular point of time in the study without change variables. It was the efficient method of data collection in term of time and financial resources. Both qualitative and quantitative data were collected.

3.2. Area of the Study

This study was conducted in Nkasi district council. Nkasi district is one of the four districts in Rukwa region. The district lies between latitude 6⁰58' north and 8⁰17' south and longitude 30⁰20' and 31⁰30' east of Greenwich. It has a total area of 23,124 sq Km of which 19,375 sq Km of land, 3,749 sq Km is water.

The total area 2,228.36 sq Km is Under Lwafi Game Reserves and 5100 sq Km available land (Rwamahe, 2008).

The climate was influenced by its altitude; the area receives mean annual rainfall of 800-1300 mm accompanied with mean temperature ranging between 15⁰c to 26⁰c (URT, 2004). Nkasi is a large and sparsely population, divided into five administrative divisions with 17 ward and 87 registered villages (Kapongo, 2011).It

has the total population of 228,885 of which 112,744 are male and 116,142 females. The average growth rate is 4.8 per cent per annum which is above the national population growth rate that is 3.3 per cent (URT, 2012). The major economic activities are farming, fishing, and livestock keeping and trading.

The study was conducted in a few selected areas, thus, the researcher was able to get the required data and information to identify the impact of mobile money on the performance of MSMEs in Nkasi district council.

3.3. Targeted Population

The study population is all individuals of interest in the research. It is full set cares from a sample can be taken. Study population defined as all people possess the characteristics of interest of research (Economides and Jeziorski, 2014). The study targeted MSMEs owner and assistant staff who used mobile money services and who did not use it. According to Nkasi socio-economic profile (2015), the district has 2698 MSMEs which the study targeted.

The sample was selected from this population in the district in order to capture useful information about mobile money services and it has impact on the performance of MSMEs.

3.4. Sampling techniques

3.4.1. Sample and Sample Type

Kothari (2004) defines a sample as a collection of some parts of the population on the basis of which decision is made. A sample is small adequate to make data collection convenient and large enough to be a true representative of the population from which it had been selected. Sample size refers to a number of items to be selected from the population of the study to constitute a sample. The sample must be optimum, that is, it fulfils requirements of efficiency, reliability and flexibility. The sample used in this study involved all micro, small and medium enterprises whereas the reliable data collected used to make conclusion on the research problem.

3.4.2. Sampling Procedures

Sampling procedures refer to the technique or procedures used to select the sample. The study used both probability sampling and non-probability sampling procedure. Probability sampling is based on the concept of random selection that is each unit in the population has an equal chance of being selected and non-probability is based on the research judgment (Kothari 2004). According to Kothari (2004), sampling is defined as the selection process of some parts of the aggregate of the totality based on which a judgment or inference about the aggregate or totality is made. It is a process of selecting a group of people, events, behaviour, or other elements with which to conduct a study. An important issue influencing the choice of a sampling technique is whether a sampling frame is available, that is, a list of units comprising the study population. In the study stratified sampling method was employed to select respondents from among the population. This sampling design ensured that all elements of the population are given an equal chance of being selected (Kothari 2002). The study collected data from MSMEs business owners, the technique was used because many micros, small and medium enterprises mostly occur in centres where customers are available and they can sell their products and services easily.

3.4.3. Sample Size

The sample size is defined as the size of the population included in a research study (Economides and Jeziorski, 2014). The population is portioned into overlapping groups, this technique produces small errors and low cost per observation. The study involved a total of 100 respondents who were selected through stratified random sampling technique among micro, small and medium enterprises owners from different age, education levels, experience, family members and both females and males in Nkasi district council, who were randomly selected from different locations in the district namely; Kasu10 (10%), Chala20 (20%), Namanyele33 (33%), Kabwe15 (15%) and Kilando22 (22%). This ensured validity, reliability and representativeness of the sample of the study.

The study used Slovin's formula of calculating the sample size which was given as follows;

$$n = \frac{N}{1 + Ne^2}$$

Where n = sample size

N = Total population

e = Error tolerant (error margin)

Given:

$$N = 2698$$

$$e = 0.098$$

$$n = ?$$

$$n = \frac{2698}{1 + 2698 \times 0.098^2}$$

$$n = \frac{2698}{1 + 2200 \times 0.009604}$$

$$n = 100.25$$

However the sample size was approximated to 100, all sample units were personally contacted.

Sample size in each stratum

$$n_w = \frac{N_w \times n}{N}$$

Where n_w = sample size in ward

N_w = Population in ward

n = Sample size

N = Total population of district

The information in the table 3.1 shows number of respondent in each ward

Table 3.1: Number of Respondents in Ward

Ward	MSMEs population	Number of Respondents	Per cent
Kasu	270	10	10
Chala	540	20	20
Namanye	890	33	33
Kilando	594	22	22
Kabwe	404	15	15
Total	2698	100	100

Source: Researcher's construct (2016)

3.5. Data Collection Methods

In this study, both primary data and secondary data collection methods were applied. There are two main types of data collection method that is primary and secondary data. Primary data are those collected afresh and for the first time and thus happen to be original in character while secondary data are those which already been collected by someone else and which have passed through a statistical process (Kothari, 2004). Primary data collection methods include observation, questionnaire and interviews; while secondary data collection method is that which uses documentary analysis (Msabila and Nalaila, 2013).

The data were collected from small and medium enterprises owners by using the questionnaire as the instrument for data collection, an unstructured interview was used to cross check the information. The methods ensured validity, reliability, suitability and adequacy of information.

The questionnaire was used because it enabled to get detailed information on the subject matter. Secondary data was from the company's and organisation website and from the various literature and reports prepared by the companies and organisation such as Vodacom, Airtel, Tigo, TCRA, Ministry of Industry and Trade as well as Bank of Tanzania (BOT).

Questionnaires were structured into three sections, A, B and C. Section A sought information regarding respondent's profile such as age, gender, status, occupation level of education and family member. Section B focussed on business information of respondents such as businesses experience, types of business and sources of

capital. And section C sought the perceived benefits of using mobile money services on the growth of MSMEs business.

3.5.1. Primary Data

The primary data refers to the data collected directly from the field; it involves observation, questionnaires and interviews. The primary data enabled to get the first handed data (Kothari, 2004).Therefore in this study has used questionnaire and interview data collection method.

3.5.2. Secondary Data

Secondary data are those which have previously been collected by someone else and which have been passed through the statistical process (Kothari, 2004).Also, can be defined as facts and figures that have already been recorded before the project at hand (Ishengoma, 2011). On other hand are data sets that are already in existence such as census (Economides and Jeziorski, 2014). This study collected secondary data from mobile phone company offices, from various articles, the internet and TCRA website.

3.6. Research instruments

3.6.1. Questionnaire

A questionnaire is a tool related to the survey method in the research that collects data from a large sample. It gives the ability to a researcher to collect data from the large sample and save time and other expenses (Economides and Jeziorski, 2013).There are two types of questionnaire; closed-ended questionnaire and open-ended questions. The study was adopted closed-ended questions, in which the respondents owners and managers were limited to answer the questions and which were provided to choice. The reason is that it took a short time to collect a lot of information and made it simple in data analysis.

3.6.2. Observations

This method implies the collection of information by way of investigator's own observation, without questioning the respondents. The information obtained relates to what is currently happening and is not complex by either the past behaviour or future intentions or attitude of respondents (Magutu, 2010). The study employed observation method to see amount of capital and sale, this helped to cross check the information.

3.6.3. Interviews

Interview refers to a conversation between two people where questions are asked by an interviewer to obtain information from interviewee (Ishengoma, 2011). A personal interview will be conducted in order to get data through a set of a checklist. The method was chosen in order to cross-check the information from the respondent. Interview was done with SMEs owners in Nkasi district council so as to cross check the information.

3.7. Variable and Measurement

Measurement is the assignment of numbers to objects to symbolize amount or degree of a property possessed by all of the objects. Msabila and Nalaila (2013) categorised measurement into four types, which is normal, ordinal, interval and ratio. Nominal measurement involves the determination of the presence or absence of quality that is categorical measurement. An ordinal measurement shows the relative position of the variable such as socio-economic status of people in a certain area. An interval measurement measures an arbitrary amount such as the amount of temperature and ratio measurement, it suitable for measuring properties have natural zero points such as age, weight, distance, money value, the population of the respondent. This study employ categorical and interval variables.

Table 3.2: Variable Description and Measurement

S/No	Variable Description	Variable Measurement/ Coding
2	Growth of MSMEs	Dummy variable with reference categorical being increase MSMEs growth. 1= if increase grow, 0= if otherwise
3	Sale	Dummy variable with reference categorical being sales 1= if MMS improve MSMEs sale, 0 = if other wise
4	Purchases of Stocks	variable with reference categorical being purchases of stock 1= if MMS improve MSMEs purchase stock, 0 = if other wise
5	Payment for Services	variable with reference categorical being payment for services 1= if MMS improve MSMEs payment for services, 0 = if other wise
6	Saving and Credit receiving	variable with reference categorical being saving and Credit Receiving 1= if MMS improve MSMEs saving and credit receiving, 0 = if other wise
6	Reduce cost	variable with reference categorical being reduced cost 1= if MMS reduce cost, 0 = if other wise
7	Trust worth and Safe	variable with reference categorical being Trust worth and Safe 1= if MMS is Trust worth and Safe, 0 = if other wise

Source: Researcher's construct (2016)

3.8. Data Analysis

The important aspect of research studies is preparing the data for analysis; analysing data and interpreting of data (Economides and Jeziorski, 2014). Data analysis is defined as a process that implies editing, coding, classification and tabulation of data (Kothari, 2004). The collected data was analysed and interpreted to make them more useful and meaningful. Both descriptive and quantitative were conducted on the data and information collected from micro, small and medium enterprises in Nkasi District was presented in a form of numbers, frequencies, percentage or descriptive statistics. Data was entered into a computer program for analysis by using Statistical Packages for Social Sciences (SPSS) Version 16.0. questionnaire was organized by coding for analysis. Responses for each question in each questionnaire were clearly screened to ensure clarity of responses. STATA 09 was used for data analysis, the study had adopted logit model to analyse the variable since the regressand is binary choice that is mobile money services increase growth of MSMEs. Moreover the logistic model is easy in computations than other limited dependent variable models such as probit and linear probability model; that is why logit model is often used as a substitute of probit model (Pindyck and Rubinfeld, 1991).

3.8.1. General Econometric Model

Logistic model was developed by statistician Davis Cox in 1958. It used to estimate the probability of binary responses based on one or regressors, it measure the relationship between the categorical regressand variable and one or more regressor variables by estimating probability by using logistic function(cumulative logistic function).

Likelihood function was used to estimate for discrete value defined as the probability that value is realized rather than as the probability density of the value (Davidson and Mackinnon, 2004). Binary regression and variable can be estimated by alternative approach such as probit, logit and linear probability model. In this study logistic regression was because it guarantees estimated regress and values will lie between 0 and 1 and does not assume that probability of regressand increases linearly with the regressor variables with its mathematical simplicity (Gujarati, 2006).Also logit model somewhat easier to work with and logistic probability density function is smooth about zero and bell-shaped like the standard normally probability density function but has slight thicker tail (Griffiths, Hill and Judge, 1992). The regressand was the growth of MSMEs in term of profit while regressors were sales, purchases of stock, paying for services, saving and credit receiving, reduce cost as well as trust worth and safe of using mobile money services. The study also undertake different test, that is, multicollinearity test using Pseudo R^2 and correlation (r_{12}), correlation test by persons correlation two tail, heteroskedasticity test by using robust, specification error by using link test and Model fitness by using Horner- Lemeshow (HL).

3.8.2. Theoretically Logit Model

Let $Y_i^* = X_i$

Where Y_i^* a latent response is variable is a vector of parameters to be estimated X_i is a vector of regressor variables and μ_i is the error term. In reality Y_i^* is unobservable and we can only observe a dummy variable Y_i which is defined as
$$\begin{bmatrix} Y_i = 1 \text{ if } Y_i^* > 0 \\ Y_i = 0 \end{bmatrix}$$

According to our study the probability of mobile money services influencing the growth of MSMEs was denoted as $\text{Prob}(Y_i = 1) = \text{Pr ob}(Y_i^* > 0)$

$$\begin{aligned} &= \text{Prob}(Y_i^* > 0 - X_i) \\ &= 1 - F(-X_i) \\ &= F(X_i). \dots\dots\dots (1) \end{aligned}$$

Whereby F is the cumulative distribution function (CDF) of the error term μ_i

Therefore the model was employed to estimate probability of mobile money services influencing the growth of MSMEs in Nkasi District. This was expressed as follows

$$\text{Prob}(Y_i = 1/X_i) = \frac{1}{1 + e^{-Z_i}} = \frac{e^{Z_i}}{1 + e^{Z_i}} \dots\dots\dots (2)$$

Where $Z_i = \beta_0 + \beta_1 X_i$

Equation(2) is called (cumulative) logistic distribution function (LDF or CDF) which has been used to analyzing growth, such as population, GDP and money supply (Gujarati,2006) Therefore the study examined the impact of mobile money services on the MSMEs growth. The logistic regression was adopted and sample was randomly selected, where all the observations were sampled independently to contribute to the observation as follows:-

$P_i^{Y_i} (1 - P_i)^{1-Y_i}$, and there for likelihood function was be given as

$$L = \pi_i^n P_i^{Y_i} (1 - P_i)^{1-Y_i} \dots\dots\dots (3)$$

By logarithm in both side and P_i was replaced by $\frac{e^{Z_i}}{1 + e^{Z_i}}$ the log likehoold function become

$$\text{Log} \sum_i^n Y_i X_i - \sum_i^n \log(1 + e^{Z_i}) \dots\dots\dots (4)$$

In this model with binary regressand the parameters are no interpreted as the marginal effect on the regressand but rather the marginal effect on the conditional probability, that is $\frac{dP_i}{dZ_j}$. These mean changes in the probability as a result of unit

change in the regressand variable (Gujarati, 2004). The difference between probit and logit model is that logistic distributions has slightly heavier tails than the standard normal distribution. The model assumes no important variables are omitted, regressor variables are measured without error, observations are independent and regressor variables are nonlinearly.

3.8.3. Features of the Logit Model

According to Gujarati (2006), first feature is as p goes from 0 to 1 that is Z varies from $-\infty$ to $+\infty$, the logit goes from $-\infty$ to $+\infty$; this implies that although the probability lies between 0 and 1, the logit is not bounded. Secondly although L is linear in X , the probability is not linear, third characteristic it can include dummy variables in the model, fourth if log is positive, this implies that the value of regressor increases regressand and assumes that the log of odds is linear related to X_i .

3.8.4. Demerits of the Logit Model

The following are some of the weaknesses of the logit model: heteroskedasticity problem, hence we should go to weighted least square, sample size has to be fairly large for all explanatory variables and for small sample size, the estimated result should be interpreted carefully, multicollinearity problems and R^2 is not good to judge the goodness of the model.

In this study the user of mobile money services influence the growth of MSMEs while other user's mobile money services did not influence the MSMEs' growth. This is a typical binary choice; hence an appropriate logit model was adopted to investigate the impact of mobile money services on the growth of MSMEs in Nkasi District (Greene, 2003). The model was used to estimate parameters because it has the ability to overcome three major shortcomings which are associated with other models. Firstly, it has the power to generate bounded probability estimates for each observation (Ilembo et al., 2012); secondly the variance of the error term is not constant but depends upon regressor variables (Verbeek, 2004) and thirdly its assumption regressors are normally distributed that is equal variance, hence it ease

to interpreted estimated coefficient as adjusted log odds ratio (Tanguma and Saldivar, 2015).

The probability of the growth of MSMEs were explained by sale, purchases of stocks, paying for services, saving and credit receiving, reduced cost transaction and trust and safe.

Data were computed by using STATA and SPSS software to show the relationship between regressors variables as well as the relationships between regressors and regressand variables in the model.

3.8.5. Multicollinearity Test

The model assumes that there is no exact linear relationship between any of the regressor variables in the model (Rindyck and Rubinfeld, 1991) if such a linear relationship does exist then regressor variable are perfect co-linearity exist. Multicollinearity arises when two or more variable are highly correlated with each other.

3.8.6. Correlation Test

Person correlation analysis was calculated by using SPSS software between regressors variables in order to test their relationships and analysis between regressors and regressand variables. In this study correlation coefficient (r) was used to determine if there is positive or negative relationship between variables. From the decision the correlation coefficient which is close to positive one or negative one indicates that there is strong positive or negative correlation between variables. Computation of correlation is important because the two step approach may easily imply correlation outside positive one and negative one (Verber, 2004). The regressors and regressand are statistically independent if correlation coefficient is zero but zero correlation does not necessary imply independence (Gujatati, 2004).

CHAPTER FOUR

PRESENTATION OF RESEARCH FINDINGS AND DATA ANALYSIS

4.1 Demographic Characteristics of Respondents

4.1.1 Distribution of Respondent

This study was conducted in Nkasi District in Rukwa region. A total of 100 respondents were randomly selected from five centers, where; Namanyele have 33 (33%) respondents, Kilando 22 (22%) respondents, Kasu 10% (10%) respondents, Kabwe 15 (15%) respondents and Chala 20 (20%) respondents as shown in table 4.1. These wards were selected because many MSMEs are found because it is business centres than other wards.

Table 4.1 Distribution of Respondent

Centers	Frequency	Per cent	Cumulative Per cent
Namanyele	33	33	33
Kilando	22	22	55
Kasu	10	10	65
Kabwe	15	15	80
Chala	20	20	100
Total	100	100	

Sources: Research finding (2016)

4.1.2 Respondents' Gender

The information in table 4.2 show that out of 100 respondents (91) 91% use mobile money while 9(9%) they not use the services. Also reveals that among 91 respondents, 73(80.2%) of the respondents were male and 18 (19.8%) were female. This implies majority were male who used mobile money services. This is because most of males are involved in MSMEs compared to female to generate income for the family as the head of household. This is also due to African culture where male are regarded as being responsible in economic activities while female stay at home to take care of children. Therefore more efforts should be invested to encourage female to adopt the services which can lead to growth of MSMEs in near future. This also suggests that males participate in MSMEs than female.

Table 4.2: Respondents' Gender

Gender of respondent	Frequency	Per cent	Cumulative Frequency
Male	73	80.2	80.2
Female	18	19.8	19.8
Total	91	100	

Sources: Research Findings (2016)

4.1.3 Respondents' Age

In terms of respondent's ages, the results in table 4.3 show that, 68 (74.7%) of the respondents had the age of 18 to 38 years, and 29 (25.3%) had the age of 39 to 59 years old. The results show that most of the respondents were young people within the age range from 18 to 38 years. This age group indicates that most of the young people are engaged in micro, small and medium business and use mobile money services compared to other age groups. This is also the productive age which can easily adopt new technology than any other groups in the society.

Table 4.3: Respondents' Age

Age of respondent	Frequency	Per cent	Cumulative Frequency
18 to 38 years	68	74.7	74.7
39 to 59 years	23	25.3	100
Total	91	100	

Sources: Research findings, (2016)

4.1.4 Business Experience

Respondents were asked about their business experience and their experience in mobile money technology usage. 22 (24.1%) of respondent have 0 to 2 years' experience; 36 (39.6%) have 3 to 4 years' experience and 33 (36.3%) have 5 years and above business experience. These results reveal that majority (75.9%) of respondents have business experience of more than 3 years. Indicated in table 4.4, 69 respondents, which form the majority of MSMEs 69 (75.9%) with experience of 3 years and above in the business, use mobile money services than those who have 0 to 2 years of experience. The result implies that MSMEs who stay for long time in

business may have received different advices form customers on easy way of making transaction in business especially using mobile phone technology.

Table 4.4: Respondents' Business Experience

Business Experience	Frequency	Per cent	Cumulative Per cent
0 to 2 years	22	24.1	24.1
3 to 4 years	36	39.6	63.7
5years and above	33	36.3	100
Total	91	100	

Sources: Research Findings (2016)

4.1.5 Capital Range of the Enterprises

The question about the respondent capital range was asked to help the study to identify the size of enterprises category. The table 4.5 show that 33 (36.3%) of respondents have a capital which range between 0 to 500,000 TZS, 10 (10.9%) operate capital range between 500,001 to 1000,000 TZS and 12 (13.2%) operate capital range between 1,000,001 to 1,500,000 TZS, 36 (39.6%) operate capital range between 1500,001 TZS and above. According URT (2013) micro enterprises in Tanzania are those employing capital below 5 million. From the findings of the study, it implies that majority of MSMEs are micro and small enterprises regarding to their operation capital.

Table 4.5: Capital of Enterprises

Capital of Enterprises (TZS)	Frequency	Per cent	Cumulative Per cent
0 to 500,000	33	36.3	36.3
500,001 to 1,000,000	10	10.9	47.2
1,000,001 to 1,500,000	12	13.2	60.4
1,500,001 and above	36	39.6	100
Total	91	100	

Sources: Research finding (2016)

4.1.6 Sources of Capital

The information on Table 4.6 shows that 54(59.3%) of the respondents raised capital from their own savings, 11 (12.1%) from financial institutions, 11(12.1%) from relatives, 2 (2.2%) from friends, 2 (2.2%) from their own saving and agricultural activities, 5 (5.5%) from their own saving and financial institution and 6 (6.6%) from

other sources. This information shows that 80 (87.9%) of respondent financed their business from other source than financial institution and use mobile money services. MSMEs which generate capital form own saving report high use of mobile money services than other sources. This implies that most of the micro, small and medium businesses do not rely on capital from financial institution rather depend on from their own saving. Also findings revealed that own source use mobile money services than other source of capital because for low financial infrastructure in rural hence they use the service to save for future investment and precautionary events.

This suggests high interest rate and legal procedures of access to loan and lack of collateral to majority of MSMEs which hinder to access loan form formal financial institution such as banks.

Table 4.6: Source of Capital

Source of Capital	Frequent	Per cent	Cumulative Per cent
Saving	54	59.3	59.3
Financial institution	11	12.1	71.4
Relatives	11	12.1	83.5
Friends	2	2.2	85.7
Saving and Agriculture	2	2.2	87.9
Saving and financial institution	5	5.5	94.4
Other source	6	6.6	100
Total	91	100	

Sources: Research finding (2016)

4.1.7 Marital Status of Respondents

In Table 4.7 shows that 30(33%) of respondents were single, 58 (63.7%) were married, 1(1.1%) was separated, 0(0%) was divorced and 2 (2.2%) were widowed. The results show that most of the respondents were married and engaged in small business enterprises. Findings indicate that married respondents use mobile money services than other groups. This suggests that married people use mobile money services for sending money to his/her family as well as paying for utility services. It also suggests the engagement in MSMEs as economic activities for accommodating their family.

Table 4.7 Marital status of respondents

Marital Status	Frequency	Per cent	Cumulative Per cent
Single	30	33	33
Married	58	63.7	96.7
Separated	1	1.1	97.8
Divorced	0	0	97.8
Widowed	2	2.2	100
Total	91	100	

Sources: Research finding (2016)

4.1.8 Level of Education of respondents

Findings on the education level of respondent indicate that, 5 (5.5%) have not completed primary education, 46(50.5%) are primary education level leavers, 24 (26.4%) of respondent are secondary education level leavers, 7(7.7%) college education 9 (9.9%) university graduates. The results shown in Table 4.8 reveal that at least most of the respondents had attained primary education which is (94) 94% of all respondents. This information implies that the most use of mobile money services are those who completed primary education than who never attended primary education.

Table 4.8: Level of education of respondents

Education Level	Frequency	Per cent	Cumulative Per cent
No completed Primary Education	5	5.5	5.5
Primary Education	46	50.5	56
Secondary education	24	26.4	82.4
College education	7	7.7	90.1
University Education	9	9.9	100
Total	91	100	

Sources: Research findings (2016)

4.1.9 Respondents' Occupation

Information in Table 4.9 shows that 15(16.5%) of the respondents were salary employed and engaged in business and use mobile money services; 76 (83.5%) are not salary employed, while 10(66.7%) were employed in the government sector and 5 (33.3%) are employed in the private sector and use mobile money services for business purpose. The information reveals that majority none salary employed use mobile money services than salary employed. This suggests the fact that most of employee have access to bank account than none salary employee. It also implies that both employees in all sectors use mobile money services in one way or another.

Table 4.9: Occupation of Respondent

Occupation of respondent	Frequency	Per cent	Cumulative Per cent
Salary employed	15	16.5	16.5
Not salary employed	76	83.5	100
Total	91	100	
Employer	Frequency	Per cent	Cumulative Per cent
Government	10	66.7	66.7
Private	5	33.3	100
Total	15	100	

Source: Research findings (2016)

4.1.10 Members of Family of Respondents

The information in Table 4.10 shows that 35(38.4%) of respondent have 1 to 3 family members, 37(40.7%) have 4 to 6 family members and 19 (20.9%) have 7 members and above. This result reveals that 56(60.6%) of respondents in rural business are extended family and are the majority user of mobile money services. This suggests the fact that members of the family need money for different purpose so that mobile money would be used to transfer money to them.

Table 4.10: Family Members of Respondents

Number of family	Frequency	Per cent	Cumulative Per cent
1 to 3 members	35	38.4	36
4 to 6 members	37	40.7	78
7 members and above	19	20.9	100
Total	91	100	

Sources: Research finding (2016)

4.1.11 Types of Business

Information in Table 4.11 indicate that 52 (57%) are engaged in mixed products business; 16 (16.5%) of the respondents were engaged in foods, fruits, and vegetable business, 13 (14.3%) were engaged in shoes and clothes 6 (6.6%) were engaged in electronics appliances and 5 (5.5%) were engaged in other types of business in the rural area. From the findings it can be revealed mixed product MSMEs in Nkasi District use mobile money services than other types of business due to the fact that their dealing with difference customers who may need mobile money services.

Table 4.11: Types of Business

Number of family	Frequency	Per cent	Cumulative Per cent
Mixed Product	52	57	57
Food, Fruits and Vegetables	15	16.5	73.5
Shoes and Clothes	13	14.3	87.8
Electronic Appliances	6	6.6	94.4
Other type of Business	5	5.5	100
Total	91	100	

Sources: Research findings (2016)

4.1.12 Users of Mobile money services

The use of mobile money in Nkasi District business is male dominated. The information in table 4.12 shows that, 91 (91%) of the respondents were using mobile money services in their business for the different purpose and 9 (9%) of respondents were not using mobile money services in their business despite ownership of cellular phone. This implies that mobile money services are important for business in rural areas especially in Nkasi District.

Table 4.12: Uses of Mobile money services

Uses of Mobile Money Services	Frequency	Per cent	Cumulative Per cent
YES	91	91	91
NO	9	9	100
Total	100	100	

Sources: Research findings, (2016)

4.1.13 Mobile Money Services Providers

Out of 91 respondents 59 (64.8%) of the respondents were using M-PESA, 5(5.5%) using Airtel Money, 4 (4.4%) were using TIGO PESA. Moreover some of MSMEs use two mobile service providers;14 (15.4%) were using M-PESA and Airtel Money, 5 (5.5%) were using M-PESA and TIGO PESA. Also 4 (4.4%) use M-PESA, Airtel Money and TIGO PESA as shown in Table 4.13. This implies that most of the business people use M-PESA than other company because of network, coverage and availability of the mobile money agent in the District.

Table 4.13: Mobile Money services providers

Number of family	Frequency	Per cent	Cumulative Per cent
M-Pesa,	59	64.8	64.8
Airtel Money	5	5.5	70.3
Tigo Pesa	4	4.4	74.7
M-Pesa and Airtel Money	14	15.4	90.1
M-Pesa and Tigo Pesa	5	5.5	95.6
M-Pesa, Airtel Money and Tigo Pesa	4	4.4	100
Total	91	100	

Sources: Research findings (2016)

4.2 Mobile Money Usefulness in MSMEs

4.2.1 Mobile Money Services Increase Sale

The information in Table 4.14a reveals that,72 (72%) of the respondents sold goods and services through mobile money while 28(28%) do not sell goods and services through mobile money. Respondents were asked how mobile money services had helped to improve efficiency on sale transaction compared with another method.

The information in table 4.14b shows that 67 (93%) of respondents reported that mobile money improved sales while 5 (7%) reported mobile money services have not improved sales in business. This result reveals majority to agree that mobile money services has improved sales in business compared to other means of transactions

Table 4.14a: MSMEs who Sale through MMS

MSMEs allow MMS	Frequency	Per cent	Cumulative Per cent
YES	72	72	72
NO	28	28	100
Total	100	100	

Sources: Research findings (2016)

Table 4.14b: Mobile Money Service improve sales

MMS improve Sales	Frequency	Per cent	Cumulative Per cent
YES	67	93	97
NO	5	7	100
Total	72	100	

Sources: Research findings, (2016)

4.2.2 Mobile Money Services increase purchases of stocks

Based on purchases of stock, the data was collected from micro, small and medium business to establish if they purchased stocks through mobile money services. The information in table 4.15 indicate that 68 (68%) of the respondents pay for goods through mobile money services and 32 (32%) of the respondent did not use mobile money to pay for goods. Furthermore, out of 91 of the respondents 61 (89.7%) reported that mobile money services improved process of paying for goods, however 7 (10.3%) of respondent reported no improvement. This result suggests that mobile money services are useful for MSMEs to increase the stocks and stimulate its growth.

Table 4.15: The use of Mobile money services to purchases goods and services

How use Mobile Money Services to Purchases Goods and Services	Frequency	Valid Per cent	Cumulative Frequency
YES	61	89.7	89.7
NO	7	10.3	100
Total	100	100	
MMS improve Purchases of Stock	Frequency	Per cent	Cumulative Per cent
YES	68	74.7	74.7
NO	23	25.3	100
Total	91	100	

Sources: Research finding (2016)

4.2.3 Mobile Money services improve paying services

The information in Table 4.16 shows that, out 91 respondents, 82 (90%) of the respondents use mobile money services to pay different services and 9 (10%) of the respondents do not use. Moreover out of 82 respondents who use mobile money service who were interrogated, 13 (15.9%) reported to buy airtime, 4 (4.9%) to pay water bill, 20 (24.4%) to pay electricity bill, 6 (7.3%) to pay creditors, 18 (22%) to pay airtime and electricity, 17 (20.7%) to pay airtime, electricity bill and creditors and 4 (5.1%) pay other services. Also results in Table 4.15, on responses whether mobile money services improved paying services in business indicate that, 77 (93.9%) of the respondents reported to have improved; however 5 (6.1%) reported to

have not improved. This result implies that majority agree that mobile money services improve paying for services hence the growth of MSMEs

Table 4.16: Paying Services for Business Using Mobile money

Method of Purchases of Goods and Services	Frequency	Valid Per cent	Cumulative Frequency
YES	82	82	82
NO	18	18	100
Total	100	100	
MMS improved Paying Services	Frequency	Valid Per cent	Cumulative Frequency
Airtime	13	15.9	15.9
Water bill	4	5.5	20.8
Electricity bill	20	24.4	45.2
Paying Creditors	6	7.3	52.5
Airtime and Electricity bill	18	22	74.5
Airtime, Electricity bill and creditors	17	20.7	95.2
Other services	4	4.8	100
Total	82	100	
MMS improve Paying for Services	Frequency	Per cent	Cumulative Per cent
YES	77	83.9	83.9
NO	5	16.9	100
Total	82	100	

Sources: Research finding (2016)

4.2.4 MMS help the MSMEs in saving and credit receiving

Mobile money services have not helped the majority in term of accessing credit and saving. Information in Table 4.17 shows that 54 (59.3%) of the respondents reported to have accessed some credit and saving and 37 (46.7%) of the respondent reported not to have access to credit and saving. When respondents were asked whether mobile money services had improved saving and receiving credit, 49 (90.3%) of the respondents reported improvement and 5(9.7%) of respondent reported for no improvement. This revealed that saving and crediting is not mostly used by MSMEs compared to other services in rural area.

Table 4.17: Saving and receive credit through MMS

Do you Receive Credit and Save by Mobile Money	Frequency	Valid Per cent	Cumulative Frequency
YES	54	59.3	59.3
NO	37	460.7	100
Total	91	100	
MMS improve Saving and Credit Receiving	Frequency	Valid Per cent	Cumulative Frequency
YES	49	90.3	90.3
NO	5	9.7	100
Total	54	100	

Sources: Research finding (2016)

4.2.5 Mobile Money services reduce transaction cost in the business

Table 4.18 shows that most of the business agreed that mobile money services had improved the way they ran their business in term of cost reduction and financial transactions. Findings indicate that 82(90.1%) of the respondents agreed and 10(10.9%) disagree. The information indicates that a mobile money service has reduced transaction cost for MSMEs in the business, especially travelling cost and financial cost.

Table 4.18: Mobile Money services reduce transaction cost in the business

Mobile Money Services Reduce Transaction Cost in the Business	Frequency	Valid Per cent	Cumulative Frequency
YES	82	90.1	90.1
NO	9	10.9	100
Total	91	100	
Transaction cost which Mobile Money reduced in Business	Frequency	Valid Per cent	Cumulative Frequency
Travelling cost	63	76.8	76.8
Financial cost	13	15.9	92.7
Travelling and Financial cost	5	6.1	98.8
Other cost	1	1.2	100
Total	82	100	

Sources: Research finding (2016)

4.2.6 Security trust and safety

Table 4.19 shows that, out of 91 respondents, 88 (96.7%) of the respondent agreed that mobile money services are trust worth and safe, and 3(3.3%) disagreed that

mobile money services are trust worth and safe. The results indicate that micro, small and medium business participants believe in mobile money services for different reasons given by respondents. Up to 56 (63.6%) of the respondents' reasons are based on security and 32 (36.4%) were based on other reasons.

Table 4.19: Mobile Money services are trustful and safety

Does Mobile Money Services are Trustful and Safety	Frequency	Valid Per cent	Cumulative Frequency
YES	88	96.7	96.7
NO	3	3.3	100
Total	91	100	
How Mobile Money Services it is Trustful and Safety	Frequency	Valid Per cent	Cumulative Frequency
Security	56	63.6	36.4
Other reason	32	36.4	100
Total	88	100	

Sources: Research finding (2016)

4.2.7 Challenges of Uses of Mobile Money Technology in Business

The information in table 4.20 shows that 20 (22.2%) of the respondents encountered network problems in rural area, 2 (2.2%) of the respondent faced mobile money agents having insufficient float and cash whereas 1 (1.1%) of the respondent reported that mobile money agents were not trust worth. In the same line, 8 (8.8%) of the respondent encountered challenges of the high transaction cost of the services, 30 (33.3%) of the respondent faced security problems, Network problem, insufficient amount of float and cash of mobile agents and 30 (33.3%) of respondent faced network problems, insufficient amount of float and cash, mobile money agents who are not trustful and high transaction cost on the services. These results suggest that mobile money services in rural area face many challenges, mainly network problems, insufficient amount of float and cash, trust worth and high transaction cost which hinder efficient utilization of mobile money services.

Table 4.20 Challenges of uses of mobile money technology in business

Challenges of uses of mobile Money Technology in Business	Frequency	Valid Per cent	Cumulative Frequency
Network challenge	20	22.2	22.2
Shortage of float and cash from Agent	2	2.2	24.4
Agents are not trustful	1	1.1	25.5
High reduction on transaction	8	8.8	34.3
Mistake of sending money, network and few agents	30	33.3	67.6
All above	30	33.3	100
Total	91	100	

Sources: Research finding (2016)

4.2.8 Suggestion on the uses of mobile money technology in business

The information in Table 4.21 shows that 15 (16.5%) of the respondents suggested that mobile network operators should improve network sustainability and coverage in the rural area, 3 (3.3%) of the respondent suggested that mobile agents should have a sufficient amount of float and cash as to reduce MSMEs owners so as to access the services easily and nearby their shops. Other 1 (1.1%) of respondent suggested that agents should be trust worth in order to reduce risks, 13 (14.3%) of the respondent proposed that mobile money providers and government should reduce transaction cost to encourage them to use the services, 30 (33%) of the respondents had options based on improving security, Network coverage, increase mobile money agent in order to smoothen the services. Moreover, 19 (21 %) of respondent suggested on network, increase of floats and cash trustful of agents and reduced transaction cost and 10 (10.8%) did not reported. This result implies that MSMEs are willing to use mobile money services if the given suggestions are taken on board in the use of services for the growth of MSMEs.

Table 4.21 Suggestion of Uses of Mobile money technology in business

Suggestion of uses of mobile Money Technology in Business	Frequency	Valid Per cent	Cumulative Frequency
Improve Network coverage	15	16.5	16.5
Increase float and cash to Agent trustful of mobile money Agents	3	3.3	19.8
Reduction transaction Cost	13	14.3	35.2
Improve security, network coverage and more agents	30	33	68.2
All above	19	21	89.2
Not suggestion	10	10.8	10.8
Total	91	100	

Sources: Research finding (2016).

4.2.9 Multicollinearity Test

The information in Table 4.25 shows R^2 value is 48% of the growth of MSMEs which explained by data collected in the study. Also, the correlation coefficient between the regressors variables was not very huge which ranged between r 0.2844 to 0.7290 which suggests the there is no high correlation among regressor variables in the model hence no serious multicollinearity problem. Rindyck and Rubinfeld, (1991) proposed that multicollinearity has a problem in a data if the standard beta coefficient is greater than one.

4.2.10 Heteroskedasticity Test

Robust standard error was used to account for heteroskedasticity in order to solve heteroskedasticity problem. Information in table 4.25 results as shown p-value decreases and some variable become significant.

4.2.11 Correlation Test

The information in Table 4.22 shows that the correlation between regressor variables ranges from $r = 0.2844$ to 0.7290. The highest correlation between the regressors variables was observed between reduce cost and payment for services where $r = 0.7290$ and lowest correlation was paying for goods and services and saving. The p-value ranged from 0.000 to 0.004 is less than 0.05 levels of significance.

Other observation for the results shows that regressors and regressand variables were correlated ranged from 0.3244 to 0.6414. Table 4.22 shows that sales has highly and positive significant relationships with MSMEs growth with $r = 0.6414$ at $p - \text{value} < 0.05$ level of significant than other regressors variables; that is purchases of stock and paying for goods and services, saving and credit receiving, reduced cost as well as safe trust. Therefore, the correlation analysis reveals that all variable have significant influence on the growth of MSMEs.

Table 4.22: Pearson Correlation Coefficient

Variables	GROWTH	DIMRECEI	DIMPAY	DIMPps	DIMSAV	DRecost	DTruSafe
GROWTH	1.00						
DIMRECEI	0.6414**	1.000					
DIMPAY	0.5599**	0.6226**	1.000				
DIMPps	0.5864**	0.5194**	0.4598**	1.000			
DIMSAV	0.4803**	0.5104**	0.2844*	0.4656**	1.000		
DRecost	0.5864**	0.5774**	0.5156**	0.7290**	0.4656**	1.000	
DTruSafe	0.3863**	0.3502**	0.3755**	0.5840**	0.3244**	0.5484**	1.000

**Correlation is significant at the 0.000 level (2- tailed)

*Correlation is significant at the 0.005 level (2- tailed)

Source: Researcher's owns Computation Using SPSS version 16.00 (2016)

4.2.12 Specification of Error Test

Specification of error occurs when relevant variables omitted from the model and irrelevant variables are added to the equation (Rindyck and Rubinfeld, 1991). The specification error was tested by using linktest, the rule of thumb if that is statistically significant while hatsq is statistically insignificant then the model is well specified in other hand if the model is properly specified variable hatsq should not have predictive power except by change. Hence if hatsq is significant, then the link test is significant.

This usually means that either the omitted relevant variable(s) or our link function is not correctly specified. The information in table 4.23 shows that hat is statistically significance with $p - \text{value} = 0.002$ which is less than level of significant while hatsq which predict value of the model is statistically insignificance with $p - \text{value} = 0.378$

which is great than level of significant. This information revealed that the model was well specified.

Table 4.23: Linktest Results

GROWTH	coefficient	Robust Std Err	T	P> t
_hat	1.170568	0.3381091	3.46	0.002
_hatsq	-0.1274208	0.1446837	-0.88	0.378
Constant	0.2666829	0.4238982	0.56	0.563

Number of obs = 100, LR chi2 (6) = 60.52,

Prob> chi2 = 0.0000, Pseudo R2 = 0.4887

Log pseudolikelihood = - 31.652024

Sources: Data Analysis (2016)

4.2.13 Model Fitness Test

Also model fitness was tested by using Horner- Lemeshow (HL) test for logistic regression. The decision rule suggests that if the p- value is greater than 0.05 the model is fitting the data while in other hand if the p – value is less than 0.05 the model unfits the data. Also thumb rule is the p-value of Hosmer- Hemeshow is less or equal to 0.05, the null hypothesis will be rejected, while as p-value is greater than 0.05 then we accept the null hypothesis, hence the data fit the model very well (Owino et al., 2014).The information in Table 4.24 shows that p- value which is 0.0503 was greater than 0.05. Moreover the information in Table 4.25 revealed that the log ratio chi-square of -32.18 with p – value 0.000 and Pseudo $R^2 = 0.4803$. This information implied that the data collected fits the model very well.

Table 4.24: Hosmer – Lemeshow Test for Model Fitness

No of Observation	Chi-2	Df	Sig
100	4.33	7	0.5029

Source: Research findings (2016)

4.2.14 Empirical Econometric Results

The model was estimated by maximum likelihood method. The information in Table 4.25 shows that the model was statistically significant at p – value 0.000 which is 1% probability level. According Pseudo R^2 was 48%, this shows that 48% of variation of MSMEs growth is explained by Sales, Purchases of stocks and paying services are statistically significant while and saving and credit receiving, reduced cost as well as trust worth and safe.

4.2.14.1 Result for Hypothesis 1 (Sales transaction through mobile money services do not influence the growth of MSMEs)

The null hypothesis state that sale transaction through mobile money services has no influence on the growth of MSMEs, the information in table 4.25 show that sales transaction has positive statistically significant influence on the growth of MSMEs. The probability of growth of MSMEs increased by 33% for MSMEs which use mobile money services for selling its commodity in his/her business than those who do not use the services. Sales through mobile money services have a positive effect on the growth of MSMEs. Also coefficient is statistically significant with p – value 0.039 which are less than 0.05 level of significance. This implies that null hypothesis is rejected. Therefore sales through mobile money service have positive influence on the growth MSMEs.

4.2.14.2 Result for Hypothesis 2 (Purchases of Stock through Mobile Money Services do not influence the Growth of MSMEs)

The null hypothesis state that purchases of stock through mobile money services has no influence on the growth of MSMEs, the result in table 4.25, indicate that the probability of growth of MSMEs increased by 30.8% for MSMEs which use mobile money services to purchase stocks in business than those who do not use the mobile money services. Purchases of stock through mobile money services have a positive effect on the growth of MSMEs. Also coefficient is statistically significant with p – value 0.024 which is less than 0.05 level of significant. This result is contrary to the

hypothesis; this implies that the null hypothesis is rejected. Hence purchases of stocks through mobile money service have influence on the growth MSMEs

4.2.14.3 Results for Hypothesis 3 (Paying for services through mobile money services do not influence the growth the MSMEs)

Table 4.25, shows that the probability of growth of MSMEs increased by 40.5% for MSMEs which use mobile money services for paying services in the business than those who do not use the services. Paying for services through mobile money services has a positive effect on the growth of MSMEs. Marginal effect was statistically significant with p – value 0.026 which is less than 0.05 level of significant. This requires that the null hypothesis be rejected. Hence paying for services through mobile money service has positive influence on the growth MSMEs.

4.2.14.4 Result for Hypothesis 4 (Saving and credit receiving through mobile money services do not influence the growth the MSMEs)

Table 4.25, shows that the probability of MSMEs increased about 21% for MSMEs which use mobile money to saving and credit receiving than those who do not use mobile money service. However, saving and credit receiving through mobile money services does not have statistically significant effect on the growth of MSMEs in Nkasi District because p – value 0.156 that is greater than 0.05 level of significant. This implies that the null hypothesis can be accepted while it has positive effect on the growth of MSMEs. This implies that saving and credit receiving through mobile money services does not has impact on the growth although has positive sign.

4.2.14.5 Result for Hypothesis 5 (Mobile money services do not reduce transaction cost in MSMEs)

Table 4.25 indicates that a mobile money service does not reduce cost in the business for MSMEs. This implies that coefficient is statistically insignificant with p – value 0.292 which is great than 0.05 level of significance and null hypothesis can be accepted and yet it has positive sign on the growth of MSMEs. Hence mobile money

services do not reduce transaction cost in rural which may have an impact on the growth of MSMEs, this could be due to high transaction cost.

4.2.14.6 Result for Hypothesis 6 (Mobile money services is not trust worth and safe to MSMEs)

Table 4.25 revealed that mobile money service is not trust worth and safe in MSMEs' business. This means its coefficient is statistically insignificant with a p-value of 0.990 which is greater than the 0.05 level of significance. It has a negative effect on the growth of MSMEs. This result could be due to unawareness of MSMEs in rural on how service is safe and secured.

Table 4.25 Logistic regression Analysis Results

GROWTH	Coefficient	P>[Z] of Coefficient	Robust Std Err	Marginal Effect	P>[Z] of marginal effect
DIMRECEI	1.551965	0.036	0.7384653	0.331187	0.039
DIMPAY	1.477545	0.023	0.657423	0.3086839	0.024
DIMPpS	1.810592	0.024	0.7997356	0.4046027	0.026
DIMSAV	1.070329	0.152	0.7466049	0.2080787	0.156
DRecost	0.9668929	0.224	0.8307179	0.2081871	0.292
DTruSafe	-0.0133708	0.990	1.104009	-0.0025497	0.990
Constant	-3.917234	0.000	0.9516801		

Number of obs = 100, Wald chi2 (6) = 36.89, Prob> chi2 = 0.0000, Pseudo R2 = 0.4803

Log pseudolikelihood = -32.176389

Dependent variable: **Growth of MSMEs**

Regressors: (Constan), DIMSALE, DIMPAY, DIMPps, DIMSAV, DRecost as well as DTruSafe

Sources: Data Analysis (2016)

CHAPTER FIVE

DISCUSSION OF FINDINGS

5.1 Sales through Mobile Money Services and Growth of MSMEs

The results indicate that sale has significant effect on the growth of MSMEs. This finding revealed that MSMEs who use mobile money services for selling goods and services have probability to grow than those who not use the services. The result is supported with the study done by Chale and Mbamba (2014) in Tanzania who observed that sales transaction had significant influence on growth of SMEs. Ongango et al. (2014) found that mobile phone technology had impact on the performance of micro and small enterprises Simuyu (2015). Wanyonyi (2013) in Kenya observed that sale and debt collection from customers through mobile money services contributed to improve performance of micro enterprises. In the same line, Nyaga (2013) in Kenya observed that mobile money services had positive impact on sales similar to Madila and Msamba (2016) in Tanzania who found that retailers benefit on mobile money services. This could be because consumer pay goods and services easy and quickly and MSMEs could sale goods and services anytime and anywhere.

The result contradicts the empirical finding of study of Mramba et al (2014) which found that among street vendors mobile money services were little used in business purpose.

5.2 Purchases of Stock through Mobile Money Services and Growth MSMEs

The findings confirmed that purchases of stock through mobile money services have positively significantly influence the growth of MSMEs. MSMEs grow as purchases of stocks trough mobile money increases due to delivery of goods and services. The result is line with Chale and Mbamba (2014) in Tanzania who observed purchases of stocks has significance influence growth of SMEs, Ongango et al. (2014) who found that mobile phone technology has impact on the performance of micro and small enterprises, Wanyonyi (2013) in Kenya who found purchases goods through mobile

money improving performance of micro enterprises and Kikukwe (2014) in Kenya who observed mobile money users applying more for purchases. This may be because a mobile money service is more convenient MSMEs hence easy and quickly delivery of goods and services. However the results contradict the empirical finding of study by Mramba et al (2014) in Tanzania who observed that among street vendors mobile money technology was less used for business purpose.

5.3 Paying for Services through Mobile Money Services and Growth of MSMEs

The hypothesis states that paying for services through mobile money services has no influence on the growth of MSMEs. The results from regression analysis show that it is statistically significant and positively correlated with the growth of MSMEs. As the mobile money services improved, the paying for services led to growth of MSMEs.

This finding is supported by results obtained by Chale and Mbamba (2014) who observed that sales paying for services had significant influence on growth of SMEs, similar to the findings by Madila and Msamba (2016), Wanyonyi and Bwisa (2013), Nyaga and Okonga (2014), who altogether found that mobile money positively contributed to the growth of business. The observation also relates to that of Ongango et al. (2014), who found that mobile phone technology, had impact on the performance of micro and small enterprises.

The findings however contradict the experience by Mramba et al (2014) in Tanzania who found among street vendors that mobile money technology were less used for business purpose.

5.4 Saving and credit receiving through mobile money services and growth of MSMEs

The study was guided by the hypothesis which states that, saving and credit receiving trough mobile money technology has insignificant influence on the growth of SMEs' growth. The results indicate that, saving and credit receiving trough mobile money technology has positive statistically insignificant influence the growth of MSMEs. The result is line with findings from Mbili and Weil (2012) in Kenya who observed

that there was little evidence that people used their M-Pesa accounts as a place to store wealth. The author however argues that, mobile money services (M- Pesa) lowers the propensity of people to use to inform saving mechanism. Also the results are consistent with the study undertaken by (Nyaga, 2013) in Kenya who found show that many players in SMEs sector did not use the services for saving, to access loans or have bank accounts. Findings also indicate that, mobile money users are not familiar with mobile-bank transactions on loan request and repayment and prefer the normal banking system to mobile banking when it comes to loans and advances. However the results are not in line with the findings obtained by Chale and Mbamba (2014) as well as Madila and Msamba (2016) in Tanzania who observed that saving and credit receiving significantly influenced the growth of SMEs as well as Batisha and Vicente (2012) who found that mobile money services substitute traditional saving and remittance.

5.5 Mobile money services and transaction cost in MSMEs

The results indicate that a mobile money service does not reduce cost in the business for MSMEs. This implies that the coefficient is statistically insignificant; however it indicates positive sign on the growth of MSMEs. This could be because of high cost of transaction and poor infrastructure of delivering goods and service in rural areas. The findings of the study is contrary to the findings form Nyaga and Onyango (2014) found that mobile money transaction cost was rated expensive and ability to store transaction data, which is similar to Beck et al (2015) who found that mobile money transaction is expensive in business in the business.

5.6 Mobile Money services and trust worth and safety to MSMEs

The results revealed that trust and safety of mobile money services do not affect the growth of MSMEs. This means trust and safe is statistically insignificance on the growth of MSMEs. This could be awareness campaign on how service is safe and secured, might think lost of phone may relate to money lost in their phone. The results is not in line with findings form Said et al. (2012) which suggested that security has significant positive influence on attitude on adoption mobile money

services. The study is contrary with Kones (2014), who found that trust and security has a positive significant influence on use of mobile banking and Beck et al. (2015) who found most use of mobile money as to avoid theft.

Generally, the findings shows sale, purchase of stock and paying for services have significant influence the growth of MSMEs, MSMEs owners and managers use mobile services because has impact on the business, business expect the growth and usefulness of mobile money which attract them to use the service which is consistent with theories; Diffusion of Innovation theory which suggests that an individuals' decision to engage in particular behaviour is based on the expectation and Technology Acceptance Model also suggests that perceived usefulness and easy to use as influence attitude toward to use the system. Therefore MSMEs owners use the mobile money services because of usefulness for their business and it has impact on the growth of MSMEs. However some usefulness such as saving and credit, reduced cost and trust worth and safe is contracted to with DoI and TAM theory.

CHAPTER SIX

CONCLUSIONS, RECOMMENDATION AND POLICY IMPLICATIONS

6.1 Conclusion of the Study

The aim of this study was to assess the impact of mobile money services. Specifically, the study was guided by the following objectives; firstly to examine whether sales transaction through mobile money services has influence significant on the growth of MSMEs; secondly to assess whether purchases of stock through mobile money services has influence significant on the growth of MSMEs; thirdly, to examine whether paying for goods and services through mobile money services has influence on the growth of MSMEs; fourthly, to assess whether saving and credit receiving use of mobile money services has influence on the growth of MSMEs; fifthly to examine whether mobile money services reduce transaction cost of MSMEs and lastly to examine whether mobile money services is trust worth and safe to MSMEs. Literature and empirical studies from difference countries and various sources were reviewed. It was found that, mobile money services have significant influence on the growth of SMEs. In order to find more information the study, used cross sectional research design where by primary data collected by using questionnaire. The questionnaire was made in English and translated in Swahili language which is the main language in the Tanzania where majority of people, if not all speak the language. Stratified random sampling was used to select sample size in Nkasi district council. The study was estimated by logit regression model.

The finding of the study suggested that the major predictor of MSMEs were sales, purchases of stock and paying for services which has positive influence on the growth of MSMEs at 5% level of significance while saving and credit receiving, reduce cost has no influence on the growth although has positive sign. Moreover trust and safe had no influence on the growth and it has negative sign.

The study contributes to the literature on the mobile money services on the growth of MSMEs. Although saving and credit receiving, reduced cost a, trust worth and safe are insignificant in the growth of MSMEs, it important for mobile network operators (MNOs) to address the issue transaction cost and security in mobile money services.

Furthermore, saving and credit receiving has no significant influence on growth of MSMEs. It may not have led to influence on growth because saving and credit receiving are not well known to MSMEs and that services should be linked with bank so as to access loan and repayment for loan such as M-PAWA.

6.2 Policy Implication

The aim of this study was to test the following hypotheses; sales transactions through mobile money services have no significant influence on the growth of MSMEs; purchases of stock through mobile money services have no significant influence on the growth of MSMEs; paying for goods and services through mobile money services has no significant influence on the growth of MSMEs; saving and credit receiving use of mobile money services has no significant influence on the growth of MSMEs; reduced cost has no significant influence on the growth of MSMEs; and that, trust worth and safe have no significant influence on the growth of MSMEs.

6.2.1 Sales Transaction

The study found that sales through mobile money services had positive influence on the growth of MSMEs. It is recommended that mobile network operators should provide SIM card which will be used for business purpose. They should also improve network coverage, stability as well as to reliable and better service to MSMEs in rural areas. The government should establish laws to encourage MSMEs to use mobile money technology so that can improve financial management record which will be easy for audit and tax paying to the government.

Also government through TRA and TCRA should review tax policy in order to reduce even to eliminate charges (VAT) on mobile money services.

6.2.2 Purchases of Stock

Purchases of stock through mobile money services have positive significantly influence the growth of MSMEs. MSMEs grow as purchases of stocks through mobile money increases due to delivery of goods and services. The study recommends there need to have awareness company and promotions to encourage whole seller (suppliers) to accept payment from customers (MSMEs) through mobile money services by reducing charges and increases amount transactions per day.

6.2.3 Paying for Services

Paying for services through mobile money services has positive influencing on the growth of MSMEs, Tanzania Commission of Regulatory Authority (TCRA) and Bank of Tanzania (BOT) which are regulatory institute mobile money services and bank industry should formulate friendly regulations to guarantee the smooth operation of mobile money services by allowing easy paying of services such as water bill, electricity bills, tax and other services.

Mobile money providers should provide special number for business purpose which could help MSMEs to manage financial flow and record transaction history as well as allow more transactions to be done per day for MSMEs

Also TCRA, MNO and BOT should establish mechanism which would encourage more MSMEs to save and reduce cost in the business as well as to provide services which is highly secured and safe to MSMEs which could improve the performance of MSMEs in rural areas

Generally the study recommended that MSMEs in rural should adopt mobile money services to enable them to improve their performance. This due to the fact that the findings from the study shows that mobile money services has significance influence the growth of MSMEs in term of earnings.

6.2.4 Limitation of the Study and Scope for Further Research

Although the empirical findings of this study are important to policy makers, mobile network provider, financial institutions as well as mobile network users, the study manifests some of limitations; firstly the study was conducted in rural area which may not represent whole MSMEs population in the rural areas who adopted mobile money services in Tanzania. This also suggests that the result may be limited for generalisation to other MSMEs population due to different in geographical and demographic structure among MSMEs.

Secondly not all variables which could have impact on growth of MSMEs were included such as mobile money transfer. This study may serve as a literature review for understanding the impact of mobile money services on the growth of MSMEs and related study. It is recommended that further research be conducted to involve large sample size in different districts of Tanzania that will represent MSMEs large population that can provide more valid and consistent result of the study.

Mobile money services are still at infant stage of their development, especially for business users and MSMEs, and that behaviour may change and adopt more mobile money services. Also, few empirical and current studies about mobile money technology in Tanzania create unreliable literature review. The cross-sectional research design does not show the changes in the study which may not be applicable in future as MSMEs perception may change as time goes on. Therefore, panel research design is recommended to be used in order to capture changes on mobile money services in Tanzania.

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APPENDICES

Appendix I.

SURVEY QUESTIONNAIRE

My name is Israel Njabu Tumaini a master student from Mzumbe University, Morogoro Tanzania. I am conducting a research on the impact of mobile money services on the growth of Micro, small and medium enterprises in Nkasi District council in Rukwa region. The research requires collecting data and information from various stakeholders including your micro, small and medium enterprises business. Please be assured that the information you provide is strictly for academic purposes and will be treated as highly confidential. Kindly ask for your assistance by filling out questionnaire. Thanks for heartfelt gratitude for your positive contribution to this research paper

SECTION A: DEMOGRAPHIC CHARACTERISTICS OF RESPONDENTS

A1: Your gender

1. Male
2. Female

A2: Your age

1. Below 18 years
2. 18 year to 38years
3. 39 years to 59 years
4. 60 years and above

A3: What is your marital status?

1. Single
2. Marriage
3. Separated
4. Divorced
5. Widowed

A4: What is your level of education?

1. Not completed primary education
2. Primary education
3. Secondary education
4. college education
5. University

A5: What is your occupation?

1. Salaried employee
2. Farming
3. Business
4. Farming and Business
5. None of above

A6: if you answer is (1) above which sectors do you employed?

1. Government sector
2. Private sector

A7: What is the total number of member of your family?

1. 1- 3 members
2. 4- 6 members
3. 7 and above members

SECTION B: BUSINESS INFORMATION

PLEASE PUT (V) MARK FOR YOU CHOICE

B1: What is the type of business you're dealing with?

1. Food, fruits and vegetable
2. Mixed products
3. Electronic appliance
4. Shoes and clothes
5. None of above

B2: What is your source of capital?

1. From Own saving
2. From financial institution
3. From relative
4. From friend
5. From own saving and agriculture
6. From own saving and financial institution
7. None of above

B3: What is your business experience?

1. 0 years to 2 years
2. 3 years to 5 years
3. years and above

**SECTION C: BENEFIT, EASY AND RISK OF MOBILE MONEY SERVICES
ON MICRO, SMALL AND MEDIUM ENTERPRISES**

C1: Do you use mobile money services

1. YES
2. NO

C2: If yes in question (C1) above, which telephone company do you use?

1. M-PESA
2. AIRTEL MONEY
3. HALTEL MONEY
4. TIGO PESAAIRTEL
5. M-PESA AND AIRTEL MONEY
6. M-PESA AND TIGO PESA
7. M-PESA,AIRTEL MONEY AND TIGO PESA

C3: Mobile money services improved sales in your business?

1. It is improved
2. Not improved

C4: Mobile money services improved purchases of stock in your business?

1. It is improved
2. Not improved

**C5: Mobile money services improves the process of paying services in your
business**

1. Improved
2. Not improved

C12: If yes in question (C5) above which services do you pay by mobile money services

1. Airtime
2. Water bill
3. Electricity bill
4. Paying creditors
5. Airtime and Electricity
6. Airtime, Electricity and Paying creditors
7. None of above

C6: Mobile money services improved saving and credit receiving in your business

1. Improved
2. Not improved

C7: Does mobile money services reduce transaction cost of you business

1. YES
2. NO

C8: If the answer is yes, in question (C7), what transaction cost do you think mobile money services reduced in your business?

1. Travelling cost
2. Financial cost
3. Financial and Other cost
4. Other cost

C9: Does mobile money services is trustfully and safety to you business

1. YES
2. NO

C10: If the answer is yes, in question (C9), please explain how do you trust and its safe in the business

C11: If the answer is No, in question (C9) above, please explain why you not trust do and it is safe in the business

1.
2.
3.
4.

C12: How you business is growth in term profit

1. High increased
2. Low increased

C13: What is your average total capital you use in your business?

1. 0 TZS to 500000 TZS
2. 500001 TZS to 1000000 TZS
3. 1000001 TZS to 1500000 TZS
4. 1500001 TZS and above

C14: What are you challenges of uses of mobile money services in your business, please mention it

5.
6.
7.
8.

C15: What is your suggestion on mobile money services?

1.
2.
3.
4.
5.

Appendix II.

```
. logit GROWTH DIMRECEI DIMPAY DIMSAV DTruSafe DRecost DIMPps, vce(robust)
```

```
Iteration 0: log pseudolikelihood = -61.910066
Iteration 1: log pseudolikelihood = -32.71537
Iteration 2: log pseudolikelihood = -32.181395
Iteration 3: log pseudolikelihood = -32.176391
Iteration 4: log pseudolikelihood = -32.176389
```

```
Logistic regression                Number of obs =      100
                                Wald chi2(6)  =      36.89
                                Prob > chi2   =      0.0000
Log pseudolikelihood = -32.176389 Pseudo R2   =      0.4803
```

GROWTH	Coef.	Robust Std. Err.	z	P> z	[95% Conf. Interval]	
DIMRECEI	1.551965	.7384653	2.10	0.036	.1045991	2.99933
DIMPAY	1.477545	.6507423	2.27	0.023	.202114	2.752977
DIMSAV	1.070329	.7466049	1.43	0.152	-.3929897	2.533648
DTruSafe	-.0133708	1.104009	-0.01	0.990	-2.177188	2.150446
DRecost	.9668929	.8307179	1.16	0.244	-.6612843	2.59507
DIMPps	1.810592	.7997356	2.26	0.024	.243139	3.378045
_cons	-3.917234	.9516801	-4.12	0.000	-5.782493	-2.051976

```
. linktest
```

```
Iteration 0: log likelihood = -61.910066
Iteration 1: log likelihood = -32.38405
Iteration 2: log likelihood = -31.699878
Iteration 3: log likelihood = -31.652434
Iteration 4: log likelihood = -31.652024
Iteration 5: log likelihood = -31.652024
```

```
Logistic regression                Number of obs =      100
                                LR chi2(2)   =      60.52
                                Prob > chi2   =      0.0000
Log likelihood = -31.652024        Pseudo R2   =      0.4887
```

GROWTH	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
_hat	1.170568	.3381091	3.46	0.001	.5078862	1.833249
_hatsq	-.1274208	.1446837	-0.88	0.378	-.4109957	.156154
_cons	.2668329	.4738982	0.56	0.573	-.6619905	1.195656

```
. correlate GROWTH DIMRECEI DIMPAY DIMSAV DTruSafe DRecost DIMPps
(obs=100)
```

	GROWTH	DIMRECEI	DIMPAY	DIMSAV	DTruSafe	DRecost	DIMPps
GROWTH	1.0000						
DIMRECEI	0.6414	1.0000					
DIMPAY	0.5599	0.6226	1.0000				
DIMSAV	0.4803	0.5104	0.2844	1.0000			
DTruSafe	0.3863	0.3502	0.3755	0.3244	1.0000		
DRecost	0.5864	0.5774	0.5156	0.4656	0.5840	1.0000	
DIMPps	0.5864	0.5194	0.4598	0.4656	0.5840	0.7290	1.0000