

**UTILIZATION OF M-PESA AND PERFORMANCE OF SMALL AND MEDIUM  
SCALE BUSINESSES IN NAKURU TOWN**

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**A Research Project Submitted to the School of Business and Economics in  
Fulfillment of the Requirements for the Award of Master of Business  
Administration Degree of Kabarak University**

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**DECLARATION AND RECOMMENDATION**

**Declaration**

I hereby declare that this research project is my original work and has not been presented for the award of any degree in any institution of higher learning.

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## **DEDICATION**

First and foremost I dedicate this research project to the Almighty God for His abundant grace and guidance throughout my studies at Kabarak University.

Secondly I dedicate this research project to my family especially to my nephews Moses, Derrick, Emmanuel and my nieces Stacy, Ruth and Michele for their encouragement, love and support.

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## ABSTRACT

The purpose of this research study was to investigate the effect of M-Pesa utilization on the performance of Small and Medium Scale Enterprises (SMEs) in Nakuru town. M-Pesa is an SMS-based money transfer system that allows individuals to deposit, withdraw and send funds using their cell phones. The introduction of M-Pesa has revolutionized the money transfer sector in Kenya and has been adopted by the SMEs in their businesses. SMEs form a dynamic force for sustained economic growth and job creation both in the developing and the developed economies. The objective of the study was to determine whether M-Pesa utilization has had any impact on growth and performance of SMEs in terms of sales, savings, profitability and customer base. The research targeted SMEs in Nakuru town which had utilized M-Pesa services in their businesses. An exploratory research design was used in the study in which a quasi experimental research approach was employed in order to compare the performance of the SMEs before and after utilization of M-Pesa services. Convenience sampling technique was adopted where 200 small and medium scale businesses were sampled. The selected SMEs were interviewed using personally administered questionnaires. The instruments were pretested for reliability and the Cronbach's alpha yielded a reliability coefficient of  $\alpha = 0.864$ . The data collected was subjected to descriptive and inferential statistical analysis. The findings of the study revealed that the greater part of the SMEs interviewed (93.8%) indicated that M-Pesa utilization had benefitted their businesses because it is efficient and reliable. The SMEs interviewed considered the following M-Pesa services as very important to their business operations; sending money (61.7%), receiving money (89.1%), transacting business (65.3%), buying airtime (42.5%), as an alternative banking system (48.2%), withdrawing money and depositing money (61.7%) in M-Pesa account. The calculated  $t$  -values for the sales (5.9915), profits (6.7487), savings (7.1773) and customer base (8.4951) were greater than the critical  $t$ -value (2.64) at 1% level of significance. This indicates that utilization of M-Pesa services significantly increased the performance of the SME businesses in terms of sales, profits, savings and customer base. This study recommends the adoption of modern technological advances in SME businesses in order to enhance the performance and productivity of the sector. Further research is recommended on the effect of mobile money transfer on the performance of micro enterprises.

**Key words:** *M-Pesa, SMEs, SME Performance, Utilization of M-Pesa.*

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## ABBREVIATION OF TERMS

CBD	-	Central Business District
GDP	-	Gross Domestic Product
GOK	-	Government of Kenya
KSHS	-	Kenya Shillings
OECD	-	Organization for Economic Co-operation and Development
PCK	-	Postal Corporation of Kenya
PIN	-	Personal Identification Number
SIM	-	Subscriber Identification Module
SME	-	Small and Medium Scale Enterprises
SMS	-	Short Message Service
SPSS	-	Statistical Package for Social Science
UN	-	United Nations

# CHAPTER ONE

## INTRODUCTION

### 1.1 Background of the Study

Money is a medium of exchange with typical functions constituting transactions and wealth storage. In modern economies, access to money is critical for economic development (Wambari, 2009). Banks have traditionally been the dominant player in the access and the transfer of money, however prior to the introduction of M-pesa in March 2007, individuals used a mixture of both informal and formal channels to transfer money. The most common methods of sending or receiving money were through friends, relatives, bus companies, or the post office (Mbiti and Weil, 2015). In the mid 90's money transfer companies like Western Union penetrated some of these markets, previously dominated by banks (Western Union, 2015). The money transfer companies albeit focused on the rich customers and largely ignored the poor.

In the late 70's, the Post Office also offered money transfers in form of money-orders which were sent to the nearest post office, but these services operated only during the working days (PCK, 2015). Also in the mid 90's, some bus companies too carried money in-letter parcels from one destination to another with risk of money hidden in the package being stolen (Kabbucho *et al*, 2003; Morawczynski, 2009). These conventional methods of money transfer were limited in terms of cost, safety, speed, convenience and reliability and they operated only within towns and urban centers. A national survey done by FinAccess in 2006, prior to the launch of M-Pesa, revealed that money was sent through friends or family (50%), buses (29%), money transfer services such as Western Union (29%), cheques (9%), direct deposit (6%), post office money orders (4%), or some other methods (2%), (FinAccess, 2015). Therefore, the entry of Safaricom's M-Pesa in March 2007 with its widely distributed agent network was a revolution in the financial sector for most Kenyans, especially for low income earners (Hughes and Lonie, 2007).

Zutt (2015) defines mobile money as electronic money accounts that can be accessed via mobile phone. With the introduction of mobile phones, mobile phone users figured out

that they could effectively transfer money across wide distances by purchasing ‘air time’ and sending this credit to other users. It was a small step for the recipient user to sell-on the received air-time to a local broker in return for cash, or for goods and services, thus effecting transfer of purchasing power from the initial sender to the recipient.

In March 2007, the leading cell phone company in Kenya, Safaricom, formalized this procedure with the launch of M-pesa which is a Short Message Service (SMS) - based money transfer system that allows individuals to deposit, send, and withdraw funds using their cell phones (Safaricom, 2007). In order for an individual to become a bonafide user of M-Pesa, one has to register with an authorized M-Pesa agent. The registration process is free and only requires valid identification documentation. A virtual electronic account is then opened and linked to the user’s phone through his Subscriber Identification Module (SIM) card. The subscriber is then required to set up a secret code known as the PIN number which he uses to access his funds. In order for the user to deposit money into his M-Pesa account, he has to pay cash to the M-Pesa agent, who in turn loads the user’s account with equal credit (e-float) which can be withdrawn for an equal value of money. The user and the agent then both receive short message service (SMS) confirmation message to complete the transaction. This process may take less than a minute when the system is operating normally (Safaricom, 2015).

In the case of a deposit, the message reflects the new balance deposited to the subscriber’s account, while the agent also receives an SMS reflecting the record of the amount of money received from the transaction. On receiving the transaction confirmation, the funds are immediately available in the user’s account, and can be transferred to other individuals both within and outside the network, exchanged for cash, used to make purchases or to pay utility bills. In order to send money, the users are charged a small fee in relation to the amount being send, but all deposits are free of charge (Safaricom, 2015).

Conversely, when the user wishes to withdraw cash, he has to log in the amount required then choose ‘withdraw cash’ on the M-Pesa menu on his phone, enters the amount to be

withdrawn (plus the relevant fee), and enters the agent number. The agent then receives a text indicating that the transaction is complete, and the agent then gives the appropriate amount of cash to the customer (Morawczynski, 2008). When the customer wishes to transfer money to a third party, the user enters the phone number of the recipient and the amount to be transferred on his cell phone, then chooses 'send money' on the M-Pesa menu. The sender and recipient each receives a text message stating that money has been transferred (Safaricom, 2007).

A research study done by Anurag *et al* (2015) documented that M-pesa has grown rapidly, currently reaching approximately 40 percent of Kenya's adult population, and is widely viewed as a success story to be emulated across the developing world. M-Pesa is considered as a branchless banking service, meaning that it is designed to enable users to complete basic banking transactions without visiting a bank branch (Anurag *et al*, 2015). A study done by Nyagah (2013) documented that small and medium scale enterprises (SMEs) are among the greatest beneficiaries; since utilizing M-pesa allows them to go to the bank less often and so they spend more time running their businesses. Many Kenyans without bank accounts can now receive and send money via their mobile phones, wherever they are in the country (Mbogo, 2010).

The wide adoption of M-Pesa in Kenya was propelled by Safaricom's network power coupled with widely distributed agents across the country, within a competitive telecommunication industry. It is this wide coverage that has compelled many to utilize it (Gillet, 2011). In addition, M-Pesa's market success can be interpreted as the interplay of three sets of factors; pre-existing country conditions that made Kenya a conducive environment for a successful mobile money deployment (Amrik and Mas, 2009); a clever service design that facilitated rapid adoption and early capturing of network effects (Mas and Morawczynski, 2009) and Safaricom's business execution strategy (Mas and Ng'weno, 2010) which helped M-Pesa rapidly reach a high number of customers. However there are documented challenges with the use of M-Pesa such as delays, occasional network disruptions and reconciliations of accounts (Sadana *et al*, 2011).

Small and medium scale enterprises are very vital in any economy in that they participate in overall investment (Mutai, 2011). The definition of SMEs seems to differ significantly across countries and publications. In most cases, the number of employees, value of assets, value of sales and size of initial capital and turnover, are the factors used in defining SMEs. Notwithstanding, SMEs form part of entrepreneurs, sole proprietors or can be a partnership or limited company (Nteere, 2012). For the purpose of this study, Small and medium scale enterprises (SMEs) was defined as ‘businesses with one to fifty employees’ in line with GOK, (2005).

SMEs are considered as the engines of growth in developing countries because they play a significant role in the improvement of entrepreneurial skills such as spurring innovations, contributing capital, creating jobs and creating new products; and thus contribute to economic growth and vitality (Liedholm and Mead, 1999). For example, in Germany, two-thirds of employees in the country are employed by the SME sector. Likewise, in South Korea, SMEs account for 99% of all enterprises and 88% of all employees while 80% of the Chinese companies currently in Africa are SMEs. In the case of South Africa, the most economically developed African country; SMEs generates more than 55% of all jobs and 22% of the country’s Gross Domestic Product (GDP) (Yejuo, 2014). In Kenya the informal sector constitutes 98% of all businesses in the country (Malick, 2015). From these examples, it is clear that SMEs are important to the development process of an economy, and that it would be beneficial to any country to promote its SME sector in order to spur economic growth and development.

According to Chogi (2006) the majority of the Kenyan population including SMEs, do not hold bank accounts hence the utilization of M-Pesa as a money transfer service provide an alternative banking solution; where SMEs can transact business, make payments, pay bills, send and receive cash. M-Pesa therefore comes in handy as an innovative new mobile payment solution that enables SMEs to complete simple financial transactions by use of mobile phones (Hughes and Lonie 2007). However, according to Porteous (2006), the degree of influence of the mobile payment to the operation



performances of the small enterprises largely depends on how conducive the business environment is.

A study done by Pagani (2004) documented that small and medium scale enterprises form the biggest number of those most benefiting from the use of the mobile-payment services. M-Pesa has been speedily adopted by SMEs because it is user friendly, efficient, easily accessible, widely distributed, reliable and available on a twenty four hour basis (Pagani, 2004; Anurag *et al*, 2015).

## **1.2 Statement of the Problem**

A study done by Beck *et al* (2015) using data ranging from 2001 to 2005 showed that African countries lagged in financial access and were excluded from modern financial services. Kenyan banks did not go looking for customers; people instead went searching for the banks. Banks did not locate branches in low income neighbourhoods and were rare in middle income areas. They preferred to focus their investments on corporate and wealthy clients and locate themselves within the city centers and in major towns. Rural regions were largely ignored (Wambalaba *et al*, 2012). Consequently, conditions for opening an account were stringent; requiring a steady flow of monthly deposits and at least three customers had to write recommendation letters to the bank. The financial relationship between banks and most customers was limited to deposits and withdrawals. These limitations were even worse for those who wanted to borrow money from banks because of lack of collaterals and credit worthiness of the customer concerned (Mbiti and Weil, 2015). Prior to the introduction of M-Pesa in the year 2007 small scale businesses in different parts of Kenya had a very limited scope of communicating, sending or receiving money from customers or suppliers in different parts of the country, and they faced even greater challenges in commuting to different locations for business activities (Salzaman *et al*, 2001). The combination of widespread cellular communication and the ability to transfer money instantly, efficiently, securely, and inexpensively (Mas and Radcliffe, 2010), have led to enormous changes in the economic activities, business relations, risk management and mitigation, among small scale businesses (Plyler *et al*, 2010). With the introduction and utilization of M-pesa as a means of money transfer,

some fundamental questions were asked. Has M-pesa utilization had any effect on the performance of small and medium scale businesses? Has the utilization of M-Pesa influenced sales of SME businesses? Has the utilization of M-pesa affected the profitability of small and medium scale businesses? Has the utilization of M-Pesa affected SME savings? How has the utilization of M-pesa affected the customer base of small and medium scale businesses and what effect has it had on the growth of the small and medium scale businesses?

### **1.3 Objectives of the Study**

#### **1.3.1 General objective**

To investigate the effect of M-pesa utilization on the performance of Small and Medium scale Enterprises (SMEs) in Nakuru town.

#### **1.3.2 Specific objectives**

- i. To establish whether the utilization of M-pesa by small and medium scale businesses in Nakuru town has influenced sales.
- ii. To determine the effect of M-Pesa utilization on the profits of small and medium scale businesses in Nakuru town.
- iii. To find out whether utilization of M-Pesa by small and medium scale businesses in Nakuru town has had any effect on savings.
- iv. To investigate the effect of M-pesa utilization on the customer base of small and medium scale businesses in Nakuru town.

### **1.4 Research Questions**

- i. Has the utilization of M-pesa by small and medium scale businesses in Nakuru town influenced sales?
- ii. Has M-Pesa utilization had any effect on the profits of small and medium scale businesses in Nakuru town?
- iii. What effect has the utilization of M-Pesa by small and medium scale businesses in Nakuru town had on savings?

- iv. What is the effect of M-pesa utilization on the customer base of small and medium scale businesses in Nakuru town?

### **1.5 Research Hypotheses**

1. **HO<sub>1</sub>**: There is no difference in sales before and after utilization of M-Pesa services by SME in Nakuru town.
2. **HO<sub>2</sub>**: There is no difference in profits before and after utilization of M-Pesa services by SME in Nakuru town.
3. **HO<sub>3</sub>**: There is no difference in savings before and after utilization of M-Pesa services by SME in Nakuru town.
4. **HO<sub>4</sub>**: There is no difference in customer base before and after utilization of M-Pesa services by SME in Nakuru town.

### **1.6 Significance and Justification of the Study**

Small and Medium Scale Enterprises (SMEs) have over a long time been recognized as boosters of the economy both in developed and developing countries. These enterprises form a dynamic force for sustained economic growth and job creation. They are a valid and crucial component of a vibrant economy. SMEs stimulate entrepreneurial skills; they are flexible and can adapt quickly to changing market demand and supply conditions; they generate employment, help diversify economic activities and make significant contribution to trade and export. SMEs form a major significant source of domestic and export earnings (OECD, 2014). Small and medium scale enterprises play an important role in the Kenyan economy. SMEs in Kenya have been recognized for wealth creation in the economy and as such, contribute towards the economic pillar of Kenya's vision 2030 (GOK, 2007). The adoption and usage of mobile phones have had an influence on the SMEs in Kenya. Most SMEs have embarked on the use of mobile phone payments by utilizing M-Pesa since it is cost effective for them to send cash to their creditors and business partners. M-Pesa can be used anywhere any time and also M-Pesa payment services enable SMEs make direct transactions with their customers without going to the banks or even going to their business premises (Anurag *et al*, 2015).

The purpose of this research therefore was to highlight the performance of SMEs in the economy and benefits accruing to them when they utilize M-Pesa platform while carrying out their business transactions. This study will not only assist the SMEs, but will in addition aid Safaricom to improve M-Pesa services and also assist the policy makers to institute good policy frameworks for the SMEs. The study will also provide a benchmark on which other researchers can base their study on the impact of utilization of M-Pesa by small and medium scale enterprise sector and other sectors of the economy.

### **1.7 Scope of the Study**

This study targeted SMEs in Nakuru town in Kenya. The research was conducted in the central business district of Nakuru town. The key persons targeted were SMEs business owners between the periods July to August 2015. The study aimed at finding out whether the utilization of M-pesa services by SMEs in their business operations, had influenced their business performance in terms of sales, profits, savings and customer base.

Nakuru town is the fourth largest urban centre in Kenya after Nairobi, Mombassa and Kisumu. According to a UN-Habitat report released in 2011, Nakuru was ranked as Africa's fastest growing town and the fourth fastest growing town in the world as reported in Business Daily Africa, (2015). It is an important agricultural town, trade center and a transportation hub for the whole of Kenya. Agriculture, manufacturing, tourism, commerce and industry form the backbone of the economy of Nakuru. The most dominant forms of businesses in the economy of Nakuru include: retail businesses in hardware, general wholesale, outlets for agro-industrial machinery, motor vehicle trade, spare parts and services in the agro-chemical retail and wholesale outlets.

### **1.8 Limitations and Delimitations of the Study**

The first limitation of the study was financial constraints; as a consequence therefore, the study was limited to Nakuru town. The other limitation was the reluctance by some respondents to release their confidential business information. However, when they were assured through the letter of introduction that the information given was purely for research purposes, their fears were allayed and they were willing to release the requested information.

## **1.9 Definitions of Operational Terms**

**Mobile Money Transfer:** Mobile money is electronic money accounts that can be accessed via mobile phones (Zutt, 2015). Mobile money transfer therefore, refers to use of mobile phone money system to conduct financial transactions such as sending and receiving money, paying for goods or services, purchasing airtime, remittances, accessing bank accounts to make deposits or withdrawals.

**M-Pesa:** M-Pesa a phrase derived from **M** for mobile and **Pesa** which is Swahili word for money. M-Pesa is an SMS-based money transfer system that allows individuals to deposit, send, and withdraw funds using their cell phones (Safaricom, 2007).

**M-Pesa Utilization:** The majority of the Kenyan population including SMEs, do not hold bank accounts hence the utilization of M-Pesa as a money transfer service provide an alternative banking solution, where SMEs can transact business, make payments, pay bills, send and receive cash. M-Pesa therefore comes in handy as an innovative new mobile payment solution that enables SMEs to complete simple financial transactions by use of mobile phones (Hughes and Lonie 2007: Chogi, 2006).

**SMEs Performance:** In this study, SMEs performance refers to efficiency in performing business as reflected by; increased sales, increased savings, profitability, increased customer base, security of handling cash and reduced costs of running the business (Arunga and Kahora, 2015).

**Small and Medium Scale Enterprises (SMEs):** For the purpose of this study, small and medium scale enterprises was defined as ‘businesses with one to fifty employees’ in line with GOK, (2005).The definition of SMEs seems to differ significantly across countries and publications. In most cases, the number of employees, value of assets, value of sales and size of initial capital and turnover, are the factors used in defining SMEs. Notwithstanding, SMEs form part of entrepreneurs, sole proprietors or can be a partnership, or limited company (Nteere, 2012).

## **CHAPTER TWO**

### **LITERATURE REVIEW**

This chapter outlines documented literature related to the problem area of study in order to provide a basis of developing an understanding as well as aligning objectives to existing knowledge. The areas considered important for review included past studies in related area of study, theoretical framework, the adoption of mobile phone technology in business, utilization of M-Pesa in business, economic impacts of M-Pesa utilization, small and medium scale enterprises in Kenya, utilization of M-Pesa and performance of SMEs, conceptual framework and research gap in literature that the study sought to fill.

#### **2.1 Theoretical Review**

##### **2.1.1 Rational choice theory**

Economics plays a huge role in human behaviour since people are often motivated by; money and the possibility of making a profit, calculating the likely costs and benefits of any action before deciding what to do. This way of thinking is called rational choice theory (Scott, 2000). According to this theory, individuals are motivated by their personal wants and goals and are driven by personal desires. Rational choice theory is used to understand the social and economic behaviors of individuals. In this theory, human beings are prompted by their own goals and preferences. Human actions are regulated primarily by the information regarding the conditions under which a particular individual is going to work and would try to achieve his or her goal. Since it is not possible for individuals to attain all of the various things that they want to achieve, they must make choices relating to both their goals and the means for attaining these goals.

Choice of goals along with the selection of a proper method to reach the previously set target constitutes rational choice theory. In keeping with this theory, an individual should have a proper understanding of his or her own selection of goals and the consequences of that selection. Individuals must anticipate the outcome of alternative courses of action and calculate which action will be best for them. Rational people always choose only those options that can offer good results. Rational choice theory considers reward and punishment as benefit and cost respectively and the theory holds that the human actions

are dominated by their desire of getting good rewards. In the end, rational individuals choose the course of action that is likely to give them the greatest satisfaction (Hollis and Nell, 1975).

In connection with the rational choice theory, economics plays a huge role in human behaviour. This is because people and especially SMEs are often motivated by money and the possibility of making a profit (Donner and Escobari, 2010). In addition, SMEs are prompted by their goals and preference in their choice of which business to undertake and also in their choice of whether to utilize or not to utilize M-Pesa service in their business operations (Higgins *et al*, 2012). In this regard, SMEs must have anticipated the outcome of the alternative choice of action and must have calculated the best option to take in order for them to achieve their desired goal of maximizing their business performance. The utilization of M-Pesa by SMEs is therefore here considered as a rational choice of attaining their set business goals and targets such as increased sales, profits, savings and widened customer base. Apart from being motivated by money and the possibility of making a profit, SMEs often calculate the likely costs and benefits of any action before deciding on what to do (Mbogo, 2010 and Esselaar *et al*, 2007).

M-Pesa also assist the SMEs in performing their businesses efficiently since more time is spend in their businesses rather than in queuing in banks or in carrying out transactions in person. The ability to access one's account and to conduct transactions at one's comfort without interrupting one's normal routine is one other benefit of M-Pesa, thereby limiting time wastage on traveling or carrying out transactions in person (Fengler, 2014). A study done by Arunga and Kahora (2015) found that sole proprietors and small business enterprises reaped more profits by using the mobile payments as they could make savings or access many customers and provide more services than before. The ease of transferring money is another benefit of M-Pesa, in that it provides a cost-effective, timely and secure means of facilitating payments (Mas and Radcliffe, 2010).

### **2.1.2 Technology acceptance model**

The Technology Acceptance Model (TAM) is one of the most notable models in explaining an individual's behavior towards accepting new technologies and innovations. Technology acceptance model was developed by Davis (1989) and is one of the most popular research models to predict use and acceptance of information systems and technology by individual users. TAM highlights perceived ease of use and perceived usefulness, as key determinants to an individual's attitude towards the use of a technology. The perceived ease of use refers to the degree to which an individual expects that using a particular system would be free of effort. Perceived usefulness on the other hand refers to the degree to which an individual believes that using a specific innovation would enhance one's performance. These two factors are considered to be the primary determinants for adopting and using a new technology and may be influenced by external variables. The main external factors that are usually manifested are social factors, cultural factors and political factors (Davis, 1989). Luarn and Lin (2005), highlights that TAM is the most widely used, validated and replicated theoretical model for explaining how users come to accept and use a new technology. A study done by Mbogo (2010) extended the technology acceptance model to include other variables such as ease of accessibility, cost, convenience, security and satisfaction as other factors that affect the acceptance of a new technology.

The wide adoption and utilization of M-Pesa in Kenya and especially by small and medium scale enterprises was as a result of the two constructs of TAM theory- perceived ease of use and perceived usefulness. A survey done by Muriuki (2011) revealed that M-Pesa as a means of payment in Kenya, is rapidly penetrating within the country especially amongst the small and medium scale enterprises and that this innovation has proved useful to the sector due to low cost of transactions, ease of use and wide accessibility of the services and the user friendly operations. In addition the study realized that the desire to operate easily, cost effectively, speedily and with efficiency influenced the rate of innovational adoption of the M-Pesa services in Kenya.



## **2.2 M-Pesa in Business**

### **2.2.1 The adoption of mobile phone technology in business**

A study conducted by Salzaman *et al* (2001) revealed that the adoption of mobile technology is on the rise and has drastically enhanced the utilization capabilities of mobile phones. Rao and Troshani (2007) added that mobile technology and services are viable tools for creating a wide spectrum of opportunities in business. According to Cooper and Zmud (1990) adopting mobile phones or fixed line provides an important opportunity for the SMEs to effectively link up with their business partners both inbound and outbound. Mobile phones provide technological services that; reduce costs, increase income and increases reach ability and mobility (Donner, 2005). The uses of mobile phones can be categorized as social, economic or political (Chogi, 2006). Safaricom, which began operations in 1997, is currently the largest mobile phone operator in Kenya, controlling nearly 80 percent of the market, with both the rural and urban populations subscribing (Jack and Suri, 2014). According to Nyagah (2013), accessibility to mobile phones has introduced changes to the business and operational environment of small and medium scale enterprises. In addition, Chogi (2006) noted that just like all other users of mobile phones SMEs used the same device for both business and social purposes and as a result there was widened social networks and increased profits in their businesses.

The introduction of mobile phone technology in Kenya has revolutionized the telecommunication industry. Jack and Suri (2014) and Salzaman *et al* (2001) documented that mobile phone adoption and use has had a positive and significant impact on economic growth, and that this impact may be twice as large in developing countries as compared to the developed countries. Jensen (2007) and Aker (2010) found that the introduction of mobile phones reduced price dispersion in fish markets in India and grain markets in Niger respectively. This was attributed to quick dissemination of information among traders and buyers which led to reduction of information asymmetries and market inefficiencies, hence enabling them to achieve increased business performance. Accordingly, Mbiti and Weil (2015) noted that mobile phone technology has made it easier for SMEs to conduct their financial transactions. This is because mobile phone

financial transactions saves time and provides a safer means of handling money transfer. Additionally, mobile technology can be used to reach more customers and aid in facilitating exchange of information and decision making.

### **2.2.2 Utilization of M-Pesa in business**

Safaricom introduced the *Lipa na M-Pesa* strategy in the year 2010. *Lipa na M-Pesa* is the (Kiswahili word for pay using M-Pesa). This strategy targets small and medium scale enterprises which include salons, restaurants, butcheries, spare part shops, kiosks, public transport operators and other merchants in the jua kali sector (informal sector). In this way, Safaricom was looking to grow M-Pesa beyond person to person money transfer to a service that enables Kenyans to pay for goods and services from their phones (Safaricom, 2014). *Lipa na M-Pesa* mode of payment appeals to traders as a tool of transaction because it is safe and convenient. The main aim of the campaign was to entrench the use of this payment service as the primary tool of transaction among the SMEs. *Lipa na M-Pesa* is one of the ways which enables money work in micro-transactions. The *Lipa na M-Pesa* campaign includes such services as; the payment of salaries, school fees, utility payments, advertisement, dividend payments and payments within the transport industry.

A report by the World Bank (2015), documented that the financial services provided through mobile money can be grouped into mobile finance, mobile banking and mobile payments. In addition FinAcess (2014) survey revealed that, close to 42 percent of M-Pesa users utilized the system to purchase mobile phone airtime, while approximately 26 percent of users used M-Pesa to save money and close to 20 percent of users reported using M-Pesa while travelling, presumably for safety concerns as discussed in Vaughan (2015) and Morawczynski (2009). Further 6 percent of the users make donations via M-Pesa, where majority of calls for donation include an M-Pesa account. Several hospitals, insurance companies, schools, supermarkets and petrol stations also accept payments through M-Pesa because of its speed, efficiency and accessibility.

According to Aker and Mbiti (2010), these methods of payment are part of M-Pesa's evolution from a pure money transfer system into a payment platform and a formally regulated financial service. Notwithstanding, payment of bills such as; electricity, water, groceries, rent, rates and other household bills, can be paid through M-Pesa via pay bill menu, without having to travel to an often distant office with cash at hand and waiting in a long queue in order to pay the bills. Subsequently, taxi drivers, motorbike riders, bus companies, and public service vehicles can operate more safely without the fear of being robbed of their collections, when they are paid using M-Pesa since they need not carry large amounts of cash. The benefit of M-Pesa therefore is in its ability to facilitate financial transactions by providing a platform for transferring money quickly, cost effectively and securely thereby enabling individuals to make and receive payments in a timely manner (Mas and Radcliffe, 2010 ; Jack and Suri, 2015).

### **2.2.3 Economic impacts of M-Pesa utilization**

According to the World Bank (2015), increased mobile phone penetration in developing countries is correlated with a 0.8% increase in economic growth. Mobile money penetration has therefore had its own contribution especially in relation to financial inclusion. Morawczynski and Pickens (2015) and Mas and Morawczynski (2009) explored the economic and social impacts of M-Pesa in Kenya. In their study, they found out that M-Pesa has changed the savings behavior, the pattern of remittances and has improved the standard of living in rural areas. A number of potential economic impacts of M-Pesa were also evaluated by Jack and Suri (2014). Their study revealed that M-Pesa facilitates the ease of transfer of funds across vast areas cheaply; thus increasing allocation of capital and investment opportunities. In addition the study found out that, M-Pesa improves trade by making it easier to send and receive money besides payment for goods and services. Further M-Pesa boosts households and business savings by encouraging person-to-person credit and provides a safe storage mechanism by which households increase their net savings. Lastly, they documented that M-Pesa also allows households to make efficient investment decisions thus reducing risks and minimizing business losses.

The potential effect of M-Pesa on savings has also been documented in literature. Morawczynski and Pickens (2015) observed that users often kept a balance on their M-Pesa accounts, thereby using the system as a simple bank account despite the fact that the system does not provide interest. The ease and the cost efficiency of using M-Pesa has increased the number of remittances from family members working in urban areas to their rural homes thus resulting in higher savings by these households. This is because the households receiving more remittances are empowered with more disposable income that can be channeled toward savings (Morawczynski 2009). According to Plyler *et al* (2010) M-Pesa has also contributed to increased security of funds and safety of individuals because businessmen no longer worry about handling liquid cash which attract robbers. In addition, Vaughan (2015) noted that some individuals stored money in M-Pesa due to safety considerations, especially while travelling.

The efficiency of conducting financial transactions using M-Pesa contributes to increased money circulation in the economy, by enabling the populace to receive money and conduct transactions faster and reliably, thereby increasing demand on businesses for goods and services (Demombynes and Thegaya, 2015). In order to accommodate the increased demand, local businesses expand and new business start-ups are developed creating job opportunities and as a result impacting the local economy positively (Plyler *et al*, 2010). The increased flow of remittances also boosts the local economy by providing the necessary capital to local businesses (Mbogo, 2010).

Another survey done by Muriuki (2011) revealed that M-Pesa as a means of payment in Kenya, is rapidly penetrating within the country especially amongst the small and medium scale enterprises and that this innovation has proved useful to the sector due to low cost of transactions, ease and wide accessibility of the services and the user friendly operations. In addition the study realized that the desire to operate easily, cost effectively, speedily and with efficiency influenced the rate of innovational adoption of the M-Pesa services in Kenya.

### **2.3 Small and Medium Scale Enterprises in Kenya**

SMEs are important to almost all economies in the world; but especially to those in developing countries, with major employment and income distribution challenges. This is because SMEs contribute to output, the creation of jobs, creating new products, spurring innovations, growth and dynamism; hence they form a crucial and a valid component of a vibrant economy. In the private sector, SMEs contribute significantly, in that they participate in overall investment, production of goods and services, taking risks, perceiving and utilizing new economic opportunities and developing businesses in the economy (Mutai, 2011; Chogi, 2006; Mbogo, 2010).

Malick (2015) points out that, Kenya's informal sector constitutes 98% of all businesses in the country, absorbing a big population of high school, college and university leavers. According to Munyange (2012) 64.3% of the SMEs were in trade, 14.8% in services, and 13.4% in manufacturing while 7.7% were involved in other businesses. The SME sector competes with large private firms and the government in the generation of new jobs, but has the advantage of being able to generate many more such jobs for a modest input of capital. Therefore, the expansion of this sector is a key mechanism of generating employment for the unemployed and the underemployed especially in developing economies (Palma, 2005). In spite of this, SMEs face unique challenges which affect their growth and profitability and hence, diminish their ability to contribute effectively towards sustainable development in Kenya (Mbogo, 2010).

### **2.4 Utilization of M-Pesa and Performance of SMEs**

A study conducted by Huang (2008) in Auckland, New Zealand, to determine the impact of mobile phones on SME performance indicated that most SMEs in Auckland used mobile technology to conduct their business activities. The study also revealed that the use of mobile phones had enabled SMEs to increase their annual turnover as a result of additional business networking opportunities. A similar study by Donner and Escobari (2010) assessed the use of mobile phones by SMEs in developing countries. They documented that, the use of mobile phones helped SMEs to become more productive and

that their sales had increased thereby improving their financial performance. In addition, a case study done by Wambari (2009) in Kenya to determine the impact of mobile banking indicated that mobile banking had a positive impact on financial transactions of SMEs. The study showed that the adoption of mobile banking had enabled SMEs increase their sales thus leading to improved financial performance. Further, Omwansa (2015) noted that with the use of mobile payment services SMEs spent more time in their businesses and more customers were served leading to increased sales which eventually impacted growth and performance of their businesses.

A survey done by Nyagah (2013) revealed that small and medium scale enterprises in major towns of Kenya had a clear understanding of the basic functions of mobile money services and have utilized this technology in their businesses. In addition, the study found that mobile money has made a significant contribution to the SME sector and that majority of the traders interviewed relied on it as opposed to the formal banking sector for their day to day transactions. According to Jack and Suri (2015), the launch of M-Pesa in Kenya by Safaricom has enabled SMEs to expand and grow. This is because the service provides them with efficient and easier ways of paying and receiving payments for goods and services thereby facilitating their trading activities. Anurag *et al* (2015) adds that most SMEs have utilized mobile method of payment because it is cheap for them to deliver cash to their creditors and business partners and can be used anywhere any time. Further, these services have enabled the SMEs save more time since they go to the bank less often; the saved time is thus spent productively in their businesses.

Donovan (2011) revealed that M-Pesa has not only aided person to person transfer of money locally but has also offered international remittance services to and from forty five countries around the world including countries in Europe and North America. This in turn has helped the subscribers of M-Pesa to connect with global money transfer networks and accorded them the flexibility of conducting transactions locally and internationally. Records on M-Pesa from Safaricom revealed that during the period January to September 2013 alone, Kenyans deposited approximately Kshs 726 billion; transfers amounted to Kshs 677 billion whereas withdrawals amounted to Kshs 631 billion via M-Pesa

(Safaricom, 2015). On average Kshs 70 billion is transferred in Kenya between M-Pesa users monthly. The amount of money passing through the service is equivalent to 43 percent of Kenya's gross domestic product. The impact of the service is hugely felt across the country since 70 percent of non cash-based, transactions are handled through M-Pesa, while statistics from the Central bank showed that of the 80 percent of Kenyans that have access to a form of banking, 57 percent were M-Pesa users (Mbuvi, 2015).

M-Pesa utilization by the small and medium scale enterprises has helped enhance their performance by providing them with a tool for efficiently effecting transactions. By using M-Pesa, SMEs are able to increase the speed of service delivery, reduce costs and increase efficiency, thereby creating a competitive advantage in their businesses (Mbogo, 2010). Chogi (2006) did a study to investigate the impact of mobile phone technologies on SMEs in Nairobi. The study revealed that most SMEs perceived that mobile phones has had a positive impact on their revenues and that mobile banking enabled them to reduce their business operating costs as well as increase their productivity and profitability. Another study by Higgins *et al* (2012) observed that most SMEs prefer mobile phone financial transactions to bank based financial transactions. This is because mobile money transfer enables the SMEs to avoid travel expenses when collecting and making payments from banks. This in turn enables them to significantly reduce their operating costs and increase their business profitability. Further, Higgins *et al* (2012) noted that SMEs operations are characterized by frequent financial transactions which may involve large amounts or long distances. As a result, mobile phone payments provide them with a cheaper and more convenient way of carrying out their financial transactions thus lowering their business costs and saving time. Esselaar *et al*, (2007) concludes by noting that the ease at which an individual can utilize a mobile phone makes the impact of mobile phones on the productivity and performance of businesses enormous.

M-Pesa has also promoted entrepreneurship by providing a platform for development of new services and enhancing the performance of small and medium scale enterprises in the country (Mbogo, 2010). Plyler *et al* (2010) documented that M-Pesa has also increased employment opportunities due to the expansion of existing businesses,

development of new business start-ups or through direct employment as M-Pesa agents. Likewise, Chogi (2006) observed that mobile financial transactions provided SMEs with a means through which they could reduce their operating costs as well as increase their ability to extend their business networks thus enabling them to increase their business performance. Over 300 formal businesses and several informal businesses in Kenya are integrated with M-Pesa in their operations (Kendall *et al*, 2012). According to an annual report by Safaricom (2009), SMEs form the biggest number of those most benefiting from the use of the M-Pesa services. A study conducted by Higgins *et al* (2012) to determine mobile money usage patterns by Kenyan SMEs revealed that, 99.5% of the SMEs interviewed used mobile money. Furthermore, the study indicated that the use of mobile money enabled SMEs to improve their business performance.

Chattopadhyay and Duflo (2004) documented that, M-Pesa has the effect of empowering certain household members who have traditionally had less bargaining power; in particular women and the poorer segments of the society. In effect M-Pesa has had an impact on household allocation and spending of funds because money sent via M-Pesa reaches the recipient directly, without the involvement of a third party such as delivery by a friend or relative. Granted this information advantage, recipient could be in a position to keep more of the funds they receive and is empowered to make personal decisions on whether to save or to spend.

## **2.5 Research Gap**

The introduction and adoption of mobile phones (Salzaman *et al*, 2001) and M-pesa as a means of money transfer in Kenya (Hughes and Lonie, 2007), has been studied and documented in literature. Several researchers have done work on the impact of M-Pesa on; payment of goods and services (Aker and Mbiti, 2010), efficiency of doing business (Fengler, 2014), banks (Morawczynski, 2009), M-pesa competitors (Gikunju, 2015) and (Kabbucho *et al*, 2003), money transfer companies, (Gikunju, 2015) and (Njiraini and Anyanzwa, 2015), security of funds, (Vaughan, 2015) and (Morawczynski, 2009), employment (Plyler *et al*, 2010), market prices (Jensen, 2007) and (Aker, 2010),



households (Chattopadhyay and Duflo, 2004), general livelihoods (Morawczynski, 2009) and urban migrants and people living in the diaspora (Mbiti and Weil, 2015).

The wide adoption of M-Pesa and its impact on the livelihoods of Kenyans, its contribution to the SME sector and to the economy of Kenya in general, puts weight on the significance of this study. This research therefore aims to study, the effect of utilization of M-Pesa on the performance of small and medium scale businesses. SMEs contribute to the general economy of Kenya to a large proportion. A survey conducted by Malick, 2015 documented that the informal sector constitutes 98% of all businesses in the country. Thus a study on the impact of M-Pesa utilization on small and medium scale businesses in Kenya can also be used to mirror on the impact of M-Pesa utilization on the Kenyan economy.

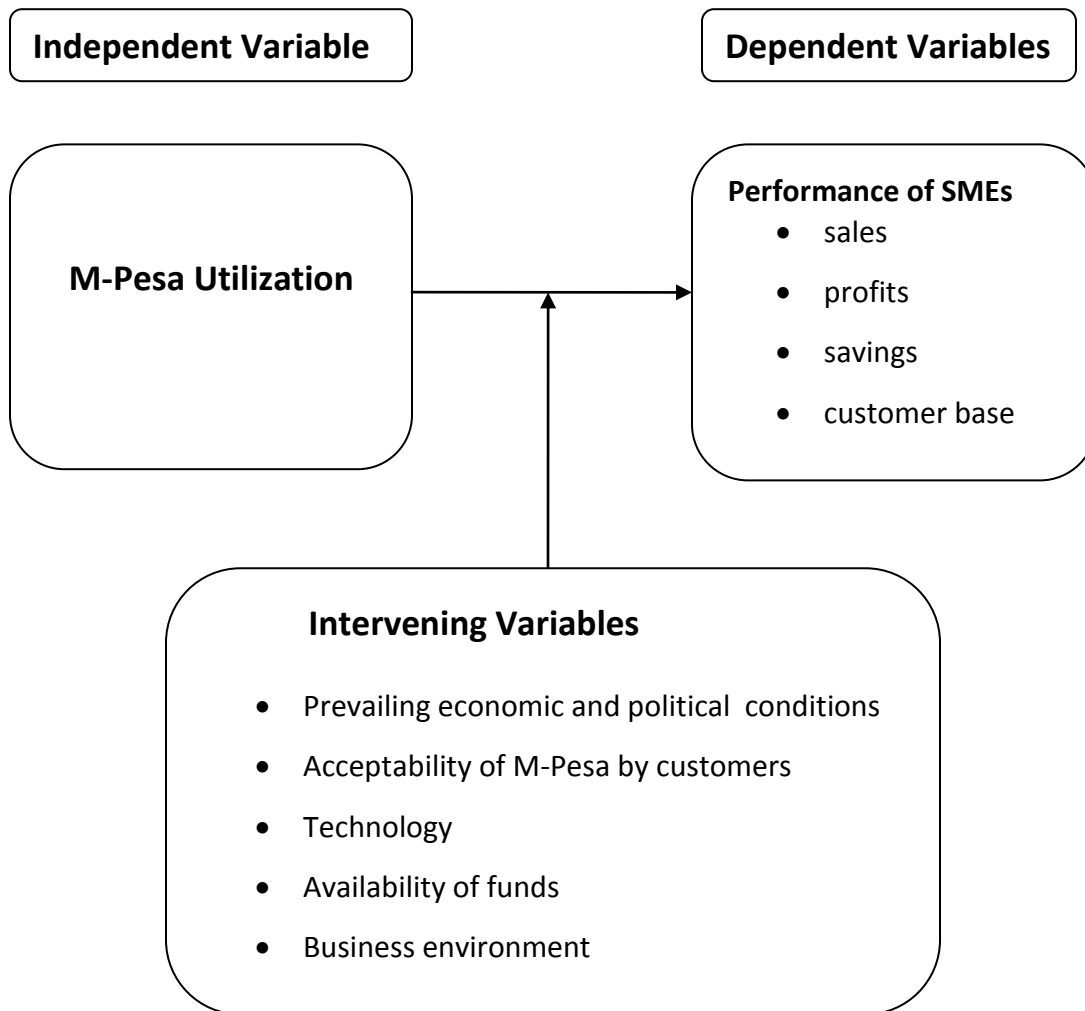
Extensive research has been done on the impact of M-Pesa on livelihoods, households and business in general but limited research has been done on the effect of M-Pesa on small and medium scale businesses in particular. Kanyi and Maharaj (2011) observed that despite the exponential growth in the use of mobile money in East Africa, only few studies have focused on its impact on the financial performance of SMEs. This means that the effect of using mobile money on the growth of SME businesses has not been effectively assessed. Consequently, there is need to study how this financial innovation has impacted on the performance of SMEs. This study therefore aims to bridge the gap by investigating the effect of M- Pesa utilization on the performance of SMEs. Hence the general objective of this study was to find out if M-Pesa utilization has influenced business performance and growth through increased sales, increased profits, increased savings, wide customer base, reduced costs and increased security of handling cash.

## **2.6 Conceptual Framework**

The conceptual framework in Figure 1 shows the relationship between the independent, dependent and the intervening variables. The conceptual framework on the effect of M-Pesa utilization on the performance of small and medium scale enterprises was based on a

quasi experimental design. In this design M-Pesa utilization was taken as the independent variable, whereas the dependent variable was the performance of the SME businesses in terms of sales, profits savings and customer base. The framework outlines the application of the independent variable of M-Pesa utilization and the perceived effect on growth and performance of SMEs in terms of sales, profits, savings and customer base. The intervening variables are factors that may influence the performance of the SMEs studied and these include the prevailing economic, technological, political, social and financial conditions under which the SMEs operate their businesses.

M-Pesa utilization was taken as the year when the respondents adopted M-Pesa services in their business operation as shown in Appendix IV. The performance of the SMEs was measured in terms of sales, profits, savings and customer base. Actual business data of sales, profits, savings and customer numbers were obtained from SME respondents and were used in the data analysis. The sales, profits, savings and customer numbers records of the SMEs for a minimum period of six years before and six years after utilizations of M-Pesa were used in order to compare the performance of SMEs before and after utilization of M-Pesa services in their businesses.



**Figure1. Effect of M-Pesa Utilization Model Conceptual Framework**

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

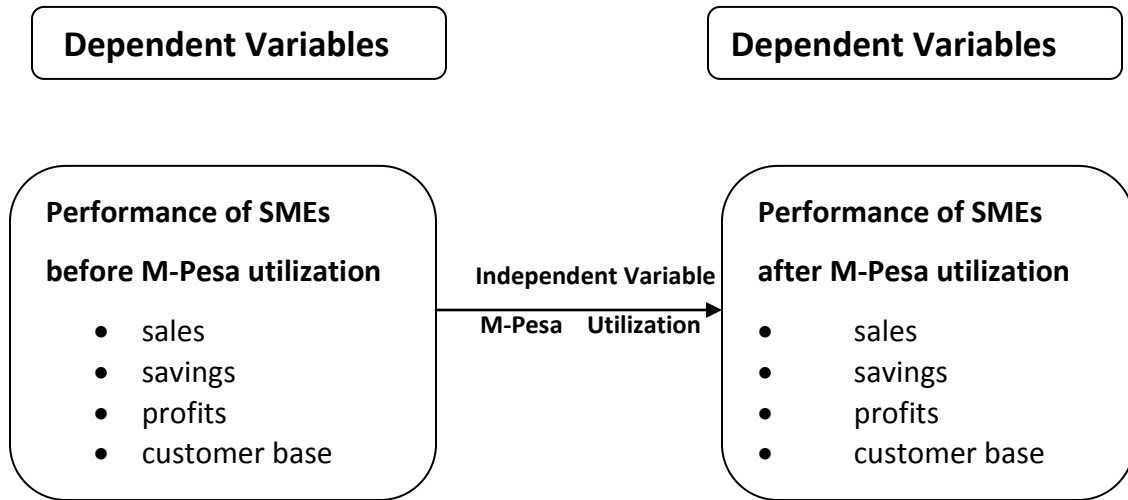
#### **3.1 Introduction**

This chapter outlines the methods that were used for the study and it constitutes the following structure; research design, target population, sampling design, sample size, data collection methods, reliability and validity of instruments used and data analysis.

#### **3.2 Research Design**

The study adopted a mixed method research as discussed in Teddlie and Tashakkori (2009). This involves the use of more than one type of investigative perspective where both research questions and or hypotheses are used so as to gain a broader and an in depth perspective of a topic. Thus an exploratory research design was used in order to investigate the effect of utilization of M-Pesa on the performance of small and medium scale businesses in Nakuru town. Further, to investigate this relationship a quasi experimental research approach was employed. Quasi experimental research design is an event study that was used to compare the performance of the sampled SMEs before and after intervention. This relationship is shown diagrammatically as in Figure 2.

The premeasure variables of the SME performance were the sales, profits, savings and the customer base of the SMEs before they had utilized M-Pesa services in their businesses. On the other hand the postmeasure variables of the SME performance were the sales, profits, savings and the customer base of the SMEs after they had utilized M-Pesa service in their businesses. In this research study M-Pesa utilization thus was taken as the intervention in a quasi experiment in order to investigate the effect of M-Pesa utilization on the performance of SMEs in terms of sales, profits, savings and customer base. The researcher therefore did not control the assignment to groups through the mechanism of random assignment because quasi-experimental designs do not use random assignment. According to Plichta and Garzon (2009) quasi-experimental designs may lack random selection or random assignments.



**Figure 2: Effect of M-Pesa Utilization Model on the Performance of SMEs**

### 3.3 Target Population and Sample Size

The target population comprised of small and medium scale businesses in Nakuru town which have utilized M-Pesa services in their business operations. The SMEs studied were identified by the notification banner on their counters that payments through M-Pesa are accepted. From the population, 200 SMEs which had utilized M-Pesa services were sampled within the central business district of Nakuru town. Being a quasi experiment the sample size of 200 SMEs were taken as SMEs which had already utilized M-Pesa services in their business operations and had been in business for at least twelve years. This was to allow for comparison of data for the period before and the period after utilization of M-Pesa services by the SMEs in their business operations. For the purpose of this study, small and medium scale businesses were described as businesses in any sector of the Kenyan economy both formal and informal employing between 1-50 employees in line with GOK (2005).

### 3.4 Sampling Design

A non-probability sampling technique was utilized in order to arrive at the sample. Convenience sampling was used to select a sample size of 200 SMEs from the central business district (CBD) of Nakuru town. The researcher used convenience sampling method where SMEs which had utilized M-Pesa services and had been in operation for at

least twelve years were deliberately selected. Moule and Hek (2012) suggested that convenience sampling is part of survey or quasi-experimental designs. In order to minimize bias, the study used information from all the diverse categories of SMEs such as; different business ventures, different income bracket, variation in gender and level of education of the SMEs. The respondents from the SME firms were people knowledgeable with the questions at hand, including the most senior persons in the firm, especially owners, managers and supervisors.

### **3.5 Data Collection Method**

The study used structured questionnaire having both closed and open-ended questions in order to collect the primary data. The use of a questionnaire guaranteed anonymity of the respondents and hence encouraged them to give honest responses. This consequently increased reliability of the instrument in line with Mwangi (1999) and Orodho (2005). The questionnaire was personally administered to the owners of the sampled small and medium scale businesses or their employees in management. The businesses sampled had been in operation for a minimum of twelve years in order to allow for comparison of the pre and post measure data. Closed-ended question items were essential in limiting response details to the required data. Where the study aimed to seek detailed and explained responses, open-ended question items were used. In some questions, the researcher used a 5 point likert scale or a semantic differential scale to measure perception and attitude of the respondents to some issues. In addition, face to face interviews enabled the researcher to make observations and seek clarification. A pilot study was done in advance in Njoro town in order to pretest the questionnaire. A survey of related literature was collected from journals, articles and websites.

### **3.6 Reliability and Validity of Instruments**

Prior to administration of the instruments in the main study, a pre-testing session to determine the instrument's validity and reliability was done. A pilot study to test the reliability of the questionnaire was undertaken before the actual study in Njoro town. The sample for the pilot testing was obtained using convenience sampling technique of small and medium scale businesses situated along the main street of Njoro town that had

utilized M-Pesa services in their businesses. The pilot testing questionnaire was administered to twenty respondents in accordance with Mugenda and Mugenda (1999), that one tenth of the sample size is sufficient for pilot testing. Using the data collected in the pilot study the instruments were tested for reliability. The cronbach's alpha reliability test was computed with the aid of SPSS version 21. The instruments yielded a reliability coefficient of  $\alpha = 0.864$  therefore the instruments were considered suitable and reliable for use in the study. The data collected at the pilot stage was not included in the main study sample for analysis.

### **3.7 Data Analysis**

The data collected was edited before analysis in order to detect and eliminate errors and omissions so as to make it meaningful. Out of the 200 questionnaires returned, 193 were used for data analysis. After editing, the data was coded and entered into the computer for storage and analysis. The data was analyzed using both descriptive and inferential statistics. The descriptive statistics used included; frequency distribution tables and percentages, mean, standard deviation and Chi square. The *t*-test was used to compute the differences between means of the variables before and after utilization of M-Pesa. Data analysis was conducted through Microsoft excel spreadsheet and Statistical Package for Social Science (SPSS–Version 21). The data analysed was tabulated and interpretations and conclusions were drawn.

## CHAPTER FOUR

### DATA ANALYSIS, PRESENTATIONS AND DISCUSSIONS

#### 4.1 Introduction

This chapter presents the results of the data collected from the field. The data collected was analysed using both descriptive and inferential statistics. The research was based on the effect of M-Pesa utilization on the performance of small and medium scale businesses in Nakuru town.

##### 4.1.1 Response rate

The study targeted businesses in Nakuru town that have utilized M-Pesa money transfer service in their businesses. The response rate was 100 percent. Two hundred questionnaires were personally administered and after editing 193 questionnaires were used for data analysis.

#### 4.2 Demographic Characteristics of Respondents

The study sought to determine the demographic characteristics of the respondents in order to obtain background information about the small and medium scale businesses. The characteristics considered in the study included, gender, age, level of education and business ownership of the SMEs. The frequencies were tallied and the percentages were calculated and presented in the tables below.

##### 4.2.1 Gender of respondents

**Table 1: Gender characteristics of the respondents**

Gender	Frequency	Percent
Male	103	53.4
Female	90	46.6
Total	193	100.0

*Source: Field data (2015)*

The findings on gender of the respondents are presented in Table 1. The data reveal that 53.4% (103) of the respondents were male whereas 46.6% (90) were female. This indicates that there was a fairly even split between genders in investing in SME businesses that had utilized M-Pesa services in Nakuru town. This implies that there was



no gender disparity in the SME businesses which had adopted and utilized M-Pesa services in Nakuru town.

#### 4.2.2 Age of respondents

**Table 2: Age distribution of respondents**

Age	Frequency	Percent
20-30	87	45.1
31-40	68	35.2
41-50	24	12.4
Above 50	14	7.3
Total	193	100.0

*Source: Field data (2015)*

The majority of the respondents (80.3%) were aged below 40 years of which 87 (45.1%) fell within the 20-30 age bracket while 68 (35.2%) fell within the 31-40 age bracket. This indicates that young people have invested in SME businesses in Nakuru town more than those aged above 40 years (19.7%) as presented in Table 2.

#### 4.2.3 Education level of respondents

**Table 3: Level of education of respondents**

Level of education	Frequency	Percent
Primary education	7	3.6
Secondary education	40	20.7
College	96	49.7
University	49	25.4
Others	1	0.5
Total	193	100.0

*Source: Field data (2015)*

The respondents' level of education results showed that all respondents interviewed had at least attained some level of formal education. The majority of the SMEs 49.7 % (96) had attained college level of education while 25.4 % (49) had attained university education. Respondents with secondary level of education were 20.7% (40) whereas 3.6 % (7) had attained primary level of education as shown in Table 3. This is in agreement

with earlier research findings by Malick (2015) that Kenya’s informal sector constitutes 98% of all businesses in the country and it absorbs a big population of high school, college and university leavers.

#### 4.2.4 Management level of respondents

**Table 4: Management level of respondents**

Management level	Frequency	Percent
Owner	79	40.9
Manager	53	27.5
Supervisor	61	31.6
Total	193	100

*Source: Field data (2015)*

The respondents interviewed were senior people in the SME businesses. The findings in Table 4 reveal that, 40.9% (79) of those interviewed were owners of the business, 31.6% (61) were supervisors while 27.5% (53) were managers in the firms. The business owners and employees in management were targeted for the interview so as to achieve credible and reliable data.

### 4.3 Business Background

In order obtain the required data for analysis, SMEs that had been in business for at least twelve years and had utilized M-Pesa services in their business operations were conveniently sampled. The study sought to determine the business background characteristics of the respondents since they give useful background information about the small and medium scale businesses. The characteristics considered in the study were, type of business, number of employees in the business and the initial capital investment of the SME businesses studied and the SME business location in Nakuru town.

#### 4.3.1 Type of business

The respondents interviewed in the study fell within the definition of SMEs in line with Nteere (2012) that small and medium scale enterprises form part of entrepreneurs and can be sole proprietors, partnerships or limited companies. The results of the study showed that 59.1% (114) of SMEs studied were sole proprietors, 31.6% (61) were limited

companies while 9.3% (18) were partnerships as shown in Table 5. It can be deduced from the results that the most popular type of business was sole proprietorship, followed by limited companies and partnerships.

**Table 5: Type of business of respondents**

Type of business	Frequency	Percent
Sole proprietorship	114	59.1
Partnership	18	9.3
Company	61	31.6
Total	193	100.0

*Source: Field data (2015)*

#### 4.3.2 Number of Employees

The findings of the study on the number of employees in SME businesses studied revealed that, the majority of the SME businesses 74.1% (143) had between 1-6 employees. This is in line with the fact that a large number of the businesses studied were sole proprietors. SMEs with between 7-15 employees followed with 17.1% (33), 16-30 range were 7.3% (14) while those with between 31-50 employees were 1.6% (3) as shown in Table 6.

**Table 6: Number of employees in the business**

Employees	Frequency	Percent
1-6	143	74.1
7-15	33	17.1
16-30	14	7.3
31-50	3	1.6
Total	193	100.0

*Source: Field data (2015)*

#### 4.3.3 Capital investment

The SMEs interviewed were asked to indicate the amount of initial capital they invested into their businesses, in order to appreciate the diversity in levels of investments of SMEs who have utilized M-Pesa services in their businesses. The findings are shown in Table 7.

**Table 7: Initial capital investment of the business**

Capital investment (Kshs)	Frequency	Percent
Below 50,000	35	18.1
50,000 - 200,000	41	21.2
200,000 - 400,000	21	10.9
400,000 - 1000,000	34	17.6
Above 1000,000	62	32.1
Total	193	100.0

*Source: Field data (2015)*

The results showed that there was a fairly even distribution of the SMEs' initial capital investment within the capital ranges as indicated in Table 7. The capital investment of the SME businesses studied varied from below Kshs 50,000 to above Kshs 1,000,000. The finding revealed that 32.1% (62) invested above Kshs one million where as 21.2% (41) invested between Kshs 50,000 to Kshs 200,000 and 18.1% (35) invested below Kshs 50,000. Those whose initial capital investment fell within Kshs 400,000 to Kshs 1000,000 were 17.6% (34) while those who invested between Kshs 200,000 to Kshs 400,000 were 10.9% (21). This implies that the SMEs interviewed in Nakuru town had invested into their businesses according to their financial means.

#### **4.3.4 Business location**

The results of the study on business location revealed that the SMEs sampled operated along various roads, streets, avenues and lanes within the central business district of Nakuru town. The findings of the study indicated that the bulk of the SME businesses (45.1%) were situated along Kenyatta Avenue, while 11.4% (22) were located within Kenyatta lane. This can be attributed to the fact that Kenyatta Avenue is the main street in Nakuru town. The rest of the SME businesses sampled operated from other locations as shown in Table 8.

**Table 8: Business location of SMEs sampled**

Business location	Frequency	Percent
Kenyatta Avenue	87	45.1
Kenyatta Lane	22	11.4
Mburu Gichua Road	12	6.2
Mburu Gichua Lane	4	2.1
Gusii Road	9	4.7
Biashara Street	15	7.8
Pandit Neheru	8	4.1
George Morara	3	1.6
Kijabe Row	13	6.7
Umardin Road	2	1.0
Moi Road	4	2.1
Court Road	2	1.0
Geofrey Kamau Way	1	0.5
Government Road	2	1.0
Club Road	2	1.0
Oginga Odinga	1	0.5
Market Road	1	0.5
Nakuru-Eldoret Highway	5	2.6
Total	193	100.0

*Source: Field data (2015)*

#### **4.4 Utilization of M-Pesa Money Transfer**

The study targeted SMEs that had utilized M-Pesa money transfer services in their business operations. All the SMEs sampled for the study adopted the M-Pesa service between the years 2007 and 2009. The year of adoption of M-Pesa money transfer by SMEs varied with businesses since the launch of the M-Pesa service in the year 2007. The data collected revealed that 48.7% (94) adopted M-Pesa service in the year 2007 whereas 40.9% (79) adopted in 2008 and 10.4% (20) adopted in 2009 as shown in Table 9. This is in line with the rational choice theory (Scott, 2000) which states that individuals are driven by their goals and preferences in the choices they make in order to achieve desired targets and that individuals must have a proper understanding of their selection of goals

and the consequences of the selection. Rational choice theory also asserts that since it is not possible for individuals to attain all of the various things that they want to achieve, they must make choices relating to both their goals and the means for attaining these goals. The choice to adopt the M-Pesa service by the SMEs therefore varied with the respondents depending on their choices and preferences.

**Table 9: Year of adoption of M-Pesa money transfer by the SMEs**

Year	Frequency	Percent
2007	94	48.7
2008	79	40.9
2009	20	10.4
Total	193	100.0

*Source: Field data (2015)*

#### **4.4.1 M-Pesa services**

SMEs interviewed had utilized M-Pesa services in various ways according to their preferences and choice. These ranged from sending and receiving money, paying bills, staff payments and transacting business among other uses. These uses are in line with earlier research findings by Chogi (2006) that the majority of Kenyan population; SMEs included, do not hold bank accounts hence use M-pesa as an alternative banking solution where the SMEs transact business, pay bills, send and receive money.

The results of the study when measured using a semantic differential scale, revealed that the most regularly used M-Pesa services were receiving money at 99.5% (192), sending money and transacting with suppliers and customers both at 78.2% (151). Withdrawing and depositing money from M-Pesa account was equally important at 76.2% and 76.7% respectively. Other services included buying air time as well using M-Pesa as an alternative banking solution at 61.7% (119) and paying bills at 56.5% (109). The least frequently used service according to the study findings was making payments to staff which recorded 20.7% (40) as shown in Table 10.

**Table 10: M-Pesa services used by SMEs**

M-Pesa services	Frequency		Percentage	
	Yes	No	Yes	No
Sending money	151	42	78.2	21.8
Receiving money	192	1	99.5	0.5
Buying airtime	119	74	61.7	38.3
Paying bills	109	84	56.5	43.5
Making payments to staff	40	153	20.7	79.3
Transact business with suppliers and customers	151	42	78.2	21.8
Alternative banking solution	119	74	61.7	38.3
Withdrawing money from M-Pesa account	147	46	76.2	23.8
Depositing money in M-Pesa account	148	45	76.7	23.3
Total frequency =193, Total percentage =100%				

*Source: Field data (2015)*

#### **4.4.2: Importance of M-Pesa Services**

The study further sought to investigate the importance of M-Pesa services to SME businesses. A 5 point likert scale ranging from 1=Very important, 2= Important, 3= Less important, 4= Least important, 5= Not important was used to obtain the opinion of the respondents. The results are summarized in Table 11.

The findings of the study showed that receiving money at 89.1% (172) was very important to the SMEs interviewed. Transacting business with suppliers and customers was subsequently very important to the SMEs at 65.3% (126). Sending money, withdrawing and depositing in M-Pesa account were considered as very important all at 61.7% (119). Buying airtime and using M-Pesa as an alternative banking solution were also viewed as very important at 42.5% (82) and 48.2% (93) respectively. Paying bills such as electricity, water, rent and rates together with making payments to staff were considered as not important at all by 38.9% (75) and as least important by 34.2% (66) of the respondents respectively. These results are in agreement with a survey done by FinAccess (2014) which revealed that 42% of M-Pesa users utilized the system to

purchase mobile air time while 26% of the users used it to save money and 20% used it while traveling for safety concerns.

**Table 11: Importance SMEs attach to M-Pesa services**

M-Pesa services	V I Freq (%)	I Freq (%)	Less I Freq (%)	Least I Freq (%)	NIA Freq (%)	X <sup>2</sup>	P-value
Sending money	119 (61.7)	16 (8.3)	24 (12.4)	18 (9.3)	16 (8.3)	210.446	0.000
Receiving money	172 (89.1)	18 (9.3)	1 (0.5)	1 (0.5)	1 (0.5)	581.896	0.000
Buying airtime	82 (42.5)	41 (21.2)	35 (18.1)	26 (13.5)	9 (4.7)	76.093	0.000
Paying bills	14 (7.3)	36 (18.7)	37 (19.2)	31 (16.1)	75 (38.9)	51.741	0.000
Making Payments to staff	26 (13.5)	16 (8.3)	52 (26.9)	66 (34.2)	33 (17.1)	42.249	0.000
Transact with suppliers and customers	126 (65.3)	25 (13)	13 (6.7)	19 (9.8)	10 (5.2)	250.808	0.000
Alternative banking	93 (48.2)	24 (12.4)	31 (16.1)	33 (17.1)	12 (6.2)	102.829	0.000
Withdrawing from M-Pesa account	119 (61.7)	28 (14.5)	18 (9.3)	21 (10.9)	7 (3.6)	215.264	0.000
Depositing in M-Pesa account	119 (61.7)	29 (15)	13 (6.7)	22 (11.4)	10 (5.2)	215.161	0.000

VI= very important, I= important, Less I= less important, Least I=least important, N.I.A= not important at all.

*Source: Field data (2015)*



#### 4.4.3 Risk of handling cash

Prior to the introduction of M-Pesa money transfer, SMEs used to transact business mainly using cash money. This in turn brought about insecurity of handling cash. The study sought to find out whether the utilization of M-Pesa money transfer by SMEs interviewed had influenced the risk of handling cash. The opinions of the SMEs interviewed were measured using a semantic differential scale.

**Table12: SMEs’ response on reduction of risk of handling cash**

SME response	Frequency	Percent
Yes	177	91.7
Neutral	10	5.2
No	6	3.1
Total	193	100.0

*Source: Field data (2015)*

The results showed that 91.7% (117) of the SMEs agreed that utilization of M-Pesa had reduced the risk of handling cash in their business operations whereas 5.2% (10) were neutral and 3.1% (6) disagreed as depicted in Table12. This is in line with earlier research findings by Plyler *et al* (2010) who pointed out that utilization of M-Pesa had contributed to increased security of funds and safety of individuals because businessmen are no longer worried about handling liquid cash which attracts robbers.

In addition, the respondents were asked to indicate in their own words how the utilization of M-Pesa had reduced the risk of handling cash. Table 13 outlines the various responses of the SMEs interviewed. The SMEs in their own words revealed that the reduction in the risk of handling cash was mainly attributed to reduction of theft cases at 25.9% (50) and increased security of money at 27.5% (53). Subsequently other respondents were of the opinion that M-Pesa being an automated money transfer system had reduced the risk of handling cash at 13% (25). Further 10.9% (21) commented that M-Pesa utilization had reduced fraud and misappropriation of cash by staff. The circulation of fake notes 4.7% (9) had also reduced with the utilization of M-Pesa money transfer. Convenience of having money in the float 5.2% (10) was another reason for reduced risk of handling

cash. However 5.7% (11) commented that M-Pesa had not reduced the risk of handling cash since some customers still transact on cash basis.

**Table 13: SMEs’ opinion on how M-Pesa utilization has reduced risk of handling cash**

SME opinion	Frequency	Percent
It has reduced theft cases	50	25.9
It has increased security of cash	53	27.5
It is convenient	10	5.2
It is an automated money transfer	25	13.0
It has reduced fraud	21	10.9
It has reduced circulation of fake notes	9	4.7
It is time saving	6	3.1
It increases accountability	4	2.1
It is easily accessible	4	2.1
It has not reduced risk of handling cash	11	5.7
Total	193	100.0

Source: Field data (2015)

#### **4.5 Utilization of M-Pesa and Benefit to SMEs**

The general objective of the study was to investigate the effect of M-Pesa utilization on the performance of SME businesses in Nakuru town. A 5 point likert scale was used to measure the opinion of the SMEs interviewed on the benefits of M-Pesa utilization on the performance of their businesses.

##### **4.5.1 Benefit of M-Pesa**

The benefit of M-Pesa utilization to the SMEs interviewed was measured on a 5 point likert scale in order to find out the status of these responses where: 1= strongly agree, 2= agree, 3= neutral, 4= disagree, 5= strongly disagree. The findings are summarized in Table 14. The data results indicate that 93.8% of the SMEs interviewed affirmed that M-Pesa utilization had benefitted their businesses; of which 67.4% (130) strongly agreed that utilization of M-Pesa service had benefitted their businesses while 26.4% (51) agreed. However, 5.7% (11) of the respondents were neutral. None of the respondents disagreed

nor strongly disagreed. This indicates that the majority of the SMEs interviewed were of the opinion that utilization of M-Pesa services had benefitted their businesses.

**Table 14: SMEs’ response on benefits of M-Pesa utilization to their businesses**

Statement		Strongly agree	Agree	Neutral	$\chi^2$	P-value
M-Pesa has benefitted SME business	Frequency	130	51	11	213.694	0.000
	Percent	67.4	26.4	5.7		

*Source: Field data (2015)*

The study further sought to investigate the opinions of the respondents in their own words on how M-Pesa utilization in their business operations had benefitted their businesses. Table 15 outlines the various responses of the SMEs interviewed.

**Table15: SMEs’ opinion on how M-Pesa utilization has benefitted their businesses**

Statement	Frequency	Percent
It is efficient and reliable	59	30.6
It has increased sales	13	6.7
It has increased customers	24	12.4
It eases payment	10	5.2
It stimulates impulse purchase	8	4.1
It saves time	9	4.7
It is convenient	12	6.2
Facilitate instant transaction	5	2.6
Facilitates business networking	6	3.1
It is available 24/7	9	4.7
Facilitates savings	9	4.7
Increases security of cash	5	2.6
It is easily accessible	1	0.5
Reduces queuing at banks	3	1.6
It has increased profits	11	5.7
The benefit is minimal	9	4.7
Total	193	100.0

*Source: Field data (2015)*

The respondents revealed that M-Pesa utilization had benefited their businesses in that it is efficient and reliable 30.6% (59), convenient 6.2% (12) and eases payment 5.2% (10). In addition the respondents said that utilization of M-Pesa had impacted their businesses through increased customers 12.4% (24), increased sales 6.7% (13), increased profits 5.7% (11) and increased security of cash 2.6% (5). Other respondents revealed that M-Pesa utilization has benefited their businesses because it provided an alternative saving plan, saves time and is available on a twenty four hour basis all at 4.7% (9). The study findings showed that 3.1% (6) of the SME respondents noted that M-Pesa utilization facilitates business networking. Further 4.1% (8) of the respondents indicated that utilization of M-Pesa services had benefitted their businesses in that it stimulates impulse purchases and 2.6% (5) indicated that M-Pesa utilization facilitates instant transactions by customers. However 4.7% (9) of the respondents were of the opinion that the benefit of utilizing M-Pesa money transfer in their business operations was minimal.

The findings are in accordance with a survey done by Muriuki (2011) which revealed that M-Pesa as a means of payment in Kenya is rapidly penetrating within the country especially amongst the SMEs. In addition, the innovation has proved useful in the sector due to low cost of transaction, ease of use, wide acceptability of the services and user friendly operations. In this connection the desire to operate easily, cost effectively, speedily and with efficiency has influenced the rate of innovational adoption of M-Pesa services in Kenya. According to Fengler (2014) M-Pesa assists SMEs perform their businesses efficiently in that more time is spend in their businesses rather than queuing in banks or in carrying out transactions in person thereby limiting time wastage. This is also in harmony with the technology acceptance model theory which highlights the perceived ease of use and perceived usefulness as key determinants to an individual's attitude towards the use of a technology. The perceived ease of use refers to the degree to which an individual expects that using a particular system would be free of effort while perceived usefulness refers to the degree to which an individual believes that using a specific innovation would enhance one's performance.

#### 4.5.2 Cost of doing business

The SME respondents were asked to indicate whether utilization of M-Pesa services had affected the cost of doing their businesses using a 5 point likert scale where; 1= strongly agree, 2= agree, 3= neutral, 4= disagree, 5 strongly disagree. The data collected showed that 35.8% (69) strongly agreed that utilization of M-Pesa had reduced the cost of doing business while 7.8 % (15) strongly disagreed. Subsequently 23.3% (45) agreed while 13.5% (26) disagreed. The rest of the respondents 19.7% (38) were neutral as shown in Table 16. An earlier study by Higgins *et al* (2012) found out that mobile phone payments provided SMEs with a cheaper and a more convenient way of carrying out their financial transactions thus lowering their business costs and saves time.

**Table 16: SMEs’ response on effect of M-Pesa utilization on cost of doing business**

Statement		SA	A	N	D	SD	$\chi^2$	P-value
M-Pesa has reduced cost of doing business	Frequency	69	45	38	26	15	43.554	0.000
	Percent	35.8	23.3	19.7	13.5	7.8		

SA= strongly agree, A= agree, N= neutral, D= disagree, SD= strongly disagree

Source: Field data (2015)

In addition the respondents were asked to indicate in their own words how utilization of M-Pesa in their businesses had influenced the SME’s cost of doing business. Table 17 outlines the various responses of the SMEs interviewed.

**Table 17: SMEs' opinion on how M-Pesa utilization has lowered cost of businesses**

Statement	Frequency	Percent
It has reduced transport costs	59	30.6
It is time saving	27	14.0
It has reduced fraud and pilferages	3	1.6
It has reduced delays and inconveniences	14	7.3
It has reduced risk of handling cash	4	2.1
It has reduced queues at bank	7	3.6
It has not reduced the overall costs	79	40.9
Total	193	100.0

Source: Field data (2015)

The findings revealed that 30.6% (59) of the respondents indicated that utilization of M-pesa had reduced transport costs incurred while traveling to do business since they transact through M-pesa money transfer. However, 40.9% (79) were of the opinion that M-Pesa utilization had provided an alternative platform for paying for services but had not reduced the overall cost of doing business. A section of the respondents 14% (27) indicated the utilization of M-Pesa saves time wasted through queuing in banks and travelling to collect stock, consequently the time saved is well utilized in running their businesses. Higgins *et al* (2012) observed that most SMEs preferred mobile phone financial transactions to bank based financial transactions because mobile money transfer enabled the SMEs avoid travelling expenses when collecting or making payments from banks.

Furthermore the SMEs interviewed were asked to indicate their business costs for a minimum of six years before and six years after utilization of M-Pesa services. The total of all the values of costs for before and for after utilization of M-Pesa were summed up and the values were used to compute the mean costs. The difference between means of cost before and after utilization of M-Pesa was computed using *t*-test. The results are shown in Table 18. The findings indicate that the SME costs after the utilization of M-Pesa were higher than costs before utilization of M-Pesa. The mean difference of cost was Kshs 7,600,000. The calculated *t*-value (5.5463) was higher than the critical *t*-value

of 2.64 at 1% level of significance. This indicates that there was a significant difference in the costs of running business before and after utilization of M-Pesa service. It can therefore be deduced from the results that the utilization of M-Pesa service did not lower business costs. This is in disagreement with earlier research findings by Higgins *et al* (2012) that mobile phone payments provided SMEs with a cheaper way of carrying out their financial services thus lowering their business costs. The SMEs interviewed revealed that though M-Pesa utilization had reduced travelling costs, it had not reduced the overall cost of doing business.

**Table 18: The *t*-test results for difference between means of costs before and after M-Pesa utilization**

Variable	Before M-Pesa	After M-Pesa	Mean Difference	<i>t</i> -value
Cost (Kshs)	11,700,000	19,300,000	7,600,000	5.6463 ***

The asterisks \*\*\* represent significance at 1%. Degrees of freedom = 2645  
*Source: Field data (2015)*

#### **4.6 Utilization of M-Pesa and Performance of SMEs**

The main objective of the study was to determine the effect of M-Pesa utilization on the performance of SMEs in Nakuru Town. In this section, the SMEs interviewed were asked to indicate their opinion, on how utilization of M-Pesa services had influenced the performance of their businesses in terms of sales, profits, savings and customer base. A 5 point likert scale was used to measure their responses where; 1= strongly agree, 2= agree, 3= neutral, 4= disagree and 5= strongly disagree. The findings of the study on how utilization of M-Pesa had influenced the performance of SMEs interviewed are outlined in Table 19.

**Table 19: SMEs’ response on M-Pesa utilization and performance of their businesses**

Variables		SA	A	N	D	SD	$\chi^2$	P-value
Sales	F	93	79	18	3		122.503	0.000
	%	48.2	40.9	9.3	1.6	Nil		
Profits	F	74	98	17	4		125.860	0.000
	%	38.3	50.8	8.8	2.1	Nil		
Savings	F	80	92	18	2	1	200.601	0.000
	%	41.5	47.7	9.3	1.0	0.5		
Customer base	F	97	75	18	3		125.487	0.000
	%	50.3	38.9	9.3	1.6	Nil		

SA = strongly agree, A = agree, N = neutral, D = disagree, SD = strongly disagree

Source: Field data (2015)

#### 4.6.1 Effects on sales

The results of the study when measured on a 5 point likert scale showed that 48.2% (93) of the respondents strongly agreed that M-Pesa utilization had increased the sales of their businesses while 1.6% (3) disagreed but none of the SMEs strongly disagreed. Further, 40.9% (79) agreed that M-Pesa had increased their sales however 9.3% (18) were neutral as shown in Table 19. This is in agreement with a study done by Wambari (2009) which indicted that the adoption of mobile banking had enabled SMEs in Kenya increase their sales thus leading to increased financial performance. Similarly research findings by Jack and Suri (2014) indicated that M-Pesa improves trade by making it easier to send and receive money besides payment for goods and services.

#### 4.6.2 Effects on profits

The findings on effects of M-Pesa utilization on profits when measured on a 5 point likert scale revealed that 50.8% (98) of the respondents agreed that utilization of M-Pesa had increased their profits however 2.1% (4) disagreed. None of the respondents strongly disagreed. Further, 38.3% (74) strongly agreed while 8.8% (17) were neutral as shown in Table 19. This concurs with study findings by Donner (2005) which revealed that mobile phones provide technological services that reduce costs; increase profits and increase



reach ability. In addition, a study conducted by Higgins *et al* (2012) to determine mobile usage patterns of Kenyan SMEs revealed that 99.5% of the SMEs interviewed used mobile money and that the use of mobile money enabled the SMEs to improve their business performance.

#### **4.6.3 Effects on savings**

The SMEs interviewed indicated that utilization of M-Pesa had influenced their savings. Table 19 shows 47.7% (92) agreed, 41.5% (80) strongly agreed that M-Pesa utilization had increased their savings while 1% (2) disagreed and 0.5% (1) of the SMEs strongly disagreed. The rest of the respondents 9.3% (18) were neutral. This is in harmony with a study by Arunga and Kahora (2015) that SME businesses reaped more profits by using mobile payments as they could make savings and access many customers and provide more services than before.

#### **4.6.4 Effects on customer base**

The influence of M-Pesa utilization on the customer base of the respondents was also measured. The results (Table 19) indicated that 50.3% (97) of the SMEs strongly agreed, 38.9% (75) agreed, 9.3% (18) were neutral while 1.6% (3) disagreed but none strongly disagreed. The increase in customer numbers is consistent with earlier findings by Jack and Suri (2015) that M-Pesa services had enabled SMEs to expand and grow because the service provides them with efficient and easier ways of paying and receiving payments for goods and services thereby facilitating their trading activities. Likewise Chogi (2006) observed that mobile financial transactions provided SMEs with the ability to extend their business networks thus enabling them to increase their business performance.

### **4.7 Inferential Statistics**

In this section, *t*- test was used to calculate the differences between means of the variables before and after utilization of M-Pesa money transfer service.

#### **4.7.1 The *t*-test results for difference between means before and after M-Pesa utilization**

The study further sought to determine whether there was significant difference in performance of SME businesses in Nakuru town before and after utilization of M-Pesa

services. The SMEs interviewed were asked to indicate their sales, profits, savings and customer base for a minimum of six years before and six years after utilization of M-Pesa services. The total of all the values of sales, profits, savings and customer base for before and for after utilization of M-Pesa were summed up and the values were used to compute the respective means. A *t* - test was done to establish if there existed a difference between the means of the two time periods. The findings are shown in Table 20.

**Table 20: The *t*-test results for difference between means before and after M-Pesa utilization**

Variables	Before M-Pesa	After M-Pesa	Mean Difference	<i>t</i> -values
Sales (Kshs)	22,700,000	39,300,000	16,600,000	5.9915 ***
Profits (Kshs)	9,629,114	18,376,858	8,747,744	6.7487 ***
Savings (Kshs)	3,679,666	7,618,607	3,938,941	7.1773 ***
Customer Base (No's)	23,007	38,796	15,789	8.4951 ***

The asterisks \*\*\* represent significance at 1%. Degrees of freedom = 2645

Source: Field data (2015)

#### 4.7.2 Difference between means of sales

The differences between means of sales before and after utilization of M-Pesa were computed using *t*- test. The findings disclosed that there was a significant difference in sales after the adoption and utilization of M-Pesa services. This is indicated by the fact that the calculated *t* - value of 5.9915 was greater than the critical *t* - value of 2.64 at 1% significance level. The mean difference for sales before and after utilization of M-Pesa was Kshs 16,600,000. Hence this indicates that there was 73% increase in sales over the two time periods as shown in Table 20.

#### **4.7.3 Difference between means of profits**

Similarly, the differences between means for profits before and after utilization of M-Pesa were computed using  $t$  test. The results show that there was a significant difference in profits after the adoption and utilization of M-Pesa services. The  $t$ -test results indicate that the calculated  $t$  - value of 6.7487 was greater than the critical  $t$  - value of 2.64 at 1% significance level. The difference in profits before and after utilization of M-Pesa was Kshs 8,747,744 revealing 90% increase in profits over the duration as shown in Table 20.

#### **4.7.4 Difference between means of savings**

The study results established that there was a significant difference in savings after the adoption and utilization of M-Pesa services. The  $t$ -test results specify that the calculated  $t$  - value of 7.1773 was greater than the critical  $t$  - value of 2.64 at 1% significance level. The difference in business savings before and after utilization of M-Pesa was Kshs 3,938,941. This indicates that there was 107% increase in savings over the two time period as shown in Table 20.

#### **4.7.5 Difference between means of customer base**

The research further analysed the customer numbers so as to find out whether there was any difference between the two time periods. The calculated  $t$ -value of 8.4951 was greater than the critical  $t$  -value of 2.64 at 1% significance level. The mean difference in customer base was 15,789 customers. Therefore the findings as shown in Table 20 indicate that there was a 69% increase in SMEs' customer numbers after the utilization of M-Pesa services.

**CHAPTER FIVE**  
**SUMMARY OF FINDINGS, DISCUSSIONS, CONCLUSIONS AND**  
**RECOMMENDATIONS**

**5.1 Introduction**

In this chapter the research findings are summarized; discussions, conclusions and recommendations to the study are drawn and also suggestions for further research are highlighted.

**5.2 Summary of the Findings**

The main purpose of this research study was to investigate the effect of M-Pesa utilization on the performance of Small and Medium Scale Enterprises (SMEs) in Nakuru town. The results of the study are summarized below.

**5.2.1 General summary of findings**

The research was conducted within the central business district of Nakuru town. A 100 percent response rate was achieved. The study targeted SMEs that had utilized M-Pesa services in their businesses. The respondents were business owners and senior people in management in the SME businesses. The greater part of the SMEs interviewed were aged below forty years and had attained college level of education. The results reveal that there was a fairly even split between genders who had invested in SME businesses in Nakuru town. The majority of the businesses (59.1%) were sole proprietors and that 74.1% of the businesses had 1-6 employees. The bulk of the SME businesses (67.8%) had a capital base below Kshs 1,000,000. Most of the businesses (45.1%) were located along Kenyatta Avenue.

The study targeted SMEs that had utilized M-Pesa services in their businesses and had adopted the service between the years 2007 to 2009. A greater part of the respondents considered the following M-Pesa services as very important to their business operations; sending money (61.7%), receiving money (89.1%), transacting business (65.3%), buying airtime (42.5%), as an alternative banking system (48.2%), withdrawing money and depositing money (61.7%) in M-Pesa account, paying bills (7.3%) and paying staff

(13.5%). The majority of the respondents (93.8%) indicated that M-Pesa utilization had benefited their businesses in that it is efficient and reliable. Subsequently, 91.7% indicated that M-Pesa had lowered the risk of handling cash. In response to the effect of M-pesa on the cost of doing business when measured on a 5 point likert scale, 35.8% strongly agreed and 23.3% agreed that M-Pesa utilization had reduced business costs while 13.5% disagreed.

### **5.2.2 Effects of M-Pesa utilization on performance of SME businesses in Nakuru town**

In order to carry out this research study, four research questions were asked on the effect of M-Pesa utilization on the performance of SME businesses in Nakuru town. The summary of the findings to the research questions asked are outlined below.

The first question was; has the utilization of M-pesa by small and medium scale businesses in Nakuru town influenced sales?

In answer to this question the findings of the study on SME business sales revealed that the majority of the SMEs interviewed affirmed that utilization of M-Pesa had increased their business sales. When measured on a 5 point likert scale, 48.2% of the SMEs interviewed strongly agreed and 40.9% agreed that utilization of M-Pesa services in their businesses had increased their business sales. Further the findings disclosed that, the difference between means of sales for the two time periods was statistically significant at 1% level of significance as is indicated by the  $t$ -value 5.9915. Therefore this indicates that there was an increase in sales after the adoption and utilization of M-Pesa services. The mean sales after utilization of M-Pesa services were 73% higher than the mean sales before utilization of M-Pesa services by the SMEs. This is in agreement with earlier studies by Donner and Escobari (2010), which assessed the use of mobile phones by SMEs in developing countries and they documented that the use of mobile phones had increased sales and overall productivity of their businesses. Correspondingly, Huang (2008) documented that the use of mobile phones by SMEs in Auckland, New Zealand had enabled SMEs increase their annual turn over.

The second question asked in the study was; has M-Pesa utilization had any effect on the profits of small and medium scale businesses in Nakuru town?

In response to this question, the majority of the SMEs interviewed were of the opinion that the utilization of M-Pesa had increased their business profits. When measured on a 5 point likert scale, 38.3% of the respondents strongly agreed while 50.8% agreed that the utilization of M-Pesa services in their businesses had increased their business profits. The difference between means of profits for the two time periods was statistically significant at 1% level of significance as is indicated by the *t*-value of 6.7487, showing that M-Pesa utilization had significantly increased SME profits. The mean profits after utilization of M-Pesa services was equivalent to a 90% increase when compared to the mean profits before utilization of M-Pesa services. This is in line with earlier research findings in Nairobi by Chogi (2006) which showed that use of mobile phones had a positive impact on SME revenues, productivity and profitability.

The third question asked in the study was; what effect has the utilization of M-Pesa by small and medium scale businesses in Nakuru town had on savings?

In rejoinder to this question, the majority of the SMEs interviewed stated that utilization of M-Pesa had increased their business savings. The study findings indicated that 41.5% of the SMEs strongly agreed while 47.7 % agreed that the utilization of M-Pesa services had increased savings in their business when measured on a 5 point likert scale. The difference between means of savings for the two time periods was statistically significant at 1% level of significance as is indicated by the *t*-value 7.1773; hence M-Pesa utilization had significantly increased SME savings. The mean savings after utilization of M-Pesa services corresponded to a 107% increase when compared to the mean savings before utilization of M-Pesa services. This is consistent with research findings by Morawczynski and Pickens (2015) that M-Pesa users often kept a balance in their M-Pesa account thereby using the system as a simple bank account despite the fact that the system does not provide interest.

The fourth question asked in the study was; what is the effect of M-pesa utilization on the customer base of small and medium scale businesses in Nakuru town?

To answer this question, the findings of the study on SME customer base revealed that the majority of the SMEs interviewed acknowledged that utilization of M-Pesa had widened their business customer base. The results of the research study when measured on a 5 point likert scale showed that 50.3% of the SMEs interviewed strongly agreed while 38.9% agreed that the utilization of M-pesa had widened their business customer base. The difference between means of customer base for the two time periods was statistically significant at 1% level of significance as is indicated by the *t*-value 8.4951; thus the utilization of M-Pesa had significantly increased SME customer numbers. The mean customer numbers after utilization of M-Pesa services was 69% greater than the mean customer numbers before utilization of M-Pesa services by the SMEs. The results are in agreement with research findings by Mbiti and Weil (2015) that mobile technology can be used to reach more customers and facilitate exchange of information and decision making.

### **5.3 Conclusions**

The research findings indicate that the utilization of M-Pesa money transfer had significantly increased the performance of small and medium scale businesses studied. This therefore highlights the importance of adopting modern technological advances in SME businesses in order to enhance the performance and productivity of the sector. In their own words the SMEs interviewed revealed that the adoption and utilization of M-Pesa in their businesses had benefited their business operations in that the service was efficient and reliable. The inferential statistics showed that there was a statistically significant difference in the sales, profits, savings and customer base of the SME businesses after M-Pesa utilization as compared to the period before utilization of the service. Therefore it can be concluded that M-Pesa utilization had increased the performance of the SME businesses in terms of sales, profits, savings and customer base.

#### **5.4 Recommendations**

The government needs to support SMEs in terms of sound policies, availability of finance, patent protection and market for their products. This is because over time, SMEs have been recognized as boosters of the economy both in developed and developing countries. They are a valid and crucial component of a vibrant economy. SMEs stimulate entrepreneurial skills; they are flexible and can adapt quickly to changing market demand and supply conditions; they generate employment, help diversify economic activities and make significant contribution to trade and export.

The study also recommends an awareness campaign on the services offered by the mobile money service providers in order to enlighten SMEs on the benefits of the services. This is for the reason that a section of SMEs may not be conversant with the benefits that they could reap if they adopted this technology.

The policy makers and mobile service providers ought to expand the service to include rural and marginalized areas that have not been covered by the service so as to bring on board SMEs in those areas whose potential has not yet been fully tapped.

#### **5.5 Suggestions for Further Research**

The study focused on the effect of M-Pesa utilization on the performance of small and medium scale enterprises in Nakuru town, and its impact on sales, profits, savings and customer base. There is therefore need to conduct a similar study on the effect of M-Pesa utilization on the performance of micro enterprises.

In addition, further research is required in order to expand the study to other localities and also to focus on effects of utilization of mobile money transfer on specific businesses and sectors of the economy so as to develop tailor made money transfer services suited to their specific needs.



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## APPENDICES

### Appendix I: Questionnaire for Small and medium Scale Businesses

#### Instructions:

In the questionnaire below, please tick (√) the appropriate answer or give suitable response in the space provided. It is optional for you to give your name and the name of your business. All information provided will only be used for research purposes.

#### Section A: Personal details.

1. Please fill in your details in the table below.

1.	Your Name (optional)		
2.	Name of your business		
			Tick appropriate boxes (√)
3.	Gender	Male	
		Female	
4.	Age	21-30	
		31-40	
		41-50	
		Above 50	
5.	Level of education	Primary Education	
		Secondary Education	
		College	
		University	
		Others	
6.	Ownership of business	Owner	
		Manager	
		Supervisor	

**Section B: Business Details**

1. Which type of business do you operate? Tick (✓) where appropriate.

- a) Sole proprietor     b) Partnership     c) Company

2. How long has the business been operational? Tick (✓) where appropriate.

- a) Below 12 years     b) Above 12 years

3. How many employees do you have? Tick (✓) where appropriate.

- a) 1- 6     b) 7- 15     c) 16- 30     d) 31- 50     e) More than 50

4. What is the capital investments for your business in thousands of shillings? Tick (✓) where appropriate.

- a) Below Shs 50,000     b) Shs 50,000 - 200,000   
c) Shs 200,000 - 400,000     d) Shs 400,000 – 1,000,000   
e) Above Shs 1,000,000

5. Which street or avenue do you operate your business from.....

**Section C: M-Pesa Details**

1. (a) Do you use M-Pesa money transfer service in your business operations?

a) Yes

b) No

If Yes

1. (b) Which year did you start utilizing M-Pesa service in your business? .....

2. M-Pesa money transfer is associated with the services listed below. Tick (✓) against the M-Pesa services which you use in your business.

	M-Pesa services	Tick (✓) where appropriate
1	Sending money	
2	Receiving money	
3	Buying airtime using M-Pesa	
4	Paying bills such as electricity, water, rent, rates, transport, fuel and insurance	
5	Make payments to staff such as salaries and allowances	
6	Transact business with suppliers and customers	
7	M-Pesa as an alternative banking solution	
8	Withdrawing from M-Pesa account	
9	Depositing in the M-Pesa account	

3. To what extent are these M-Pesa services important to your business? Tick (✓) where appropriate.

M-Pesa services		Tick (✓) where appropriate				
		Very important	Important	Less important	Least important	Not important at all
1	Sending money					
2	Receiving money					
3	Buying airtime using M-Pesa					
4	Paying bills such as electricity, water, rent, rates, transport, fuel and insurance					
5	Making payments to staff such as salaries and allowances					
6	Transact business with suppliers, creditors and customers					
7	M-Pesa as an alternative banking solution					
8	Withdrawing from M-Pesa account					
9	Depositing in the M-Pesa account					

4 (a) Has M-Pesa utilization reduced the risk of handling cash?

7	6	5	4	3	2	1
---	---	---	---	---	---	---

Yes No

4 (b) In your own words, explain how M-Pesa utilization has reduced the risk of handling cash in your business.

.....  
.....  
.....

**Section D. M-Pesa Utilization and Performance of SMEs Businesses**

1. (a) M-Pesa utilization has benefited your business. Tick (√) as appropriate.

Strongly agree	Agree	Neutral	Disagree	Strongly Disagree

1. (b) In your own words, explain how M-Pesa has benefited your business.

.....  
.....  
.....

2. (a). Utilization of M-Pesa services has lowered the cost of doing your business. Tick (√) as appropriate.

Strongly agree	Agree	Neutral	Disagree	Strongly Disagree

2. (b) In your own words, explain how M-Pesa services has lowered the cost of doing your business.

.....  
.....  
.....

3. Indicate the costs for your business before and after the utilization of M-Pesa.

Before utilization of M-Pesa		After utilization of M-Pesa	
Year	Costs	Year	Costs

4. Has M-Pesa service utilization influenced the performance of your business in terms of sales, profits, savings and customer base? Tick (✓) where appropriate.

		Tick (✓) where appropriate				
		Strongly agree	Agree	Neutral	Disagree	Strongly disagree
1	Sales					
2	Profits					
3	Savings.					
4	Customer base					

5. Indicate the sales for your business before and after the utilization of M-Pesa.

Before utilization of M-Pesa		After utilization of M-Pesa	
Year	Sales	Year	Sales

6. Indicate the profits for your business before and after the utilization of M-Pesa.

Before utilization of M-Pesa		After utilization of M-Pesa	
Year	Profits	Year	Profits

7. Indicate the savings for your business before and after the utilization of M-Pesa.

Before utilization of M-Pesa		After utilization of M-Pesa	
Year	Savings	Year	Savings

8. Indicate the number of customers for your business before and after the utilization of M-Pesa.

Before utilization of M-Pesa		After utilization of M-Pesa	
Year	No. of customers	Year	No. of customers



## **Appendix II: Letter of Introduction**

I am a student of Kabarak university undertaking master of business administration finance option. Currently I am carrying out a research study on the **Effect of M-Pesa utilization on the performance of small and medium scale businesses in Nakuru town**, as part of the requirement for the award of degree of master of business administration of Kabarak University. This questionnaire is therefore intended to seek information on the subject matter. The information is purely for academic purpose and all the information given will be handled with utmost confidentiality. I therefore request that you fill this questionnaire correctly in the space provided.

Thank you.

Yours faithfully,

Jane Kiplagat.

## Appendix III: Letter of Authorization



### KABARAK BUSSINESS SCHOOL

P.O. Private Bag 20157  
Kabarak, KENYA  
Email: [igathi@kabarak.ac.ke](mailto:igathi@kabarak.ac.ke)

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[www.kabarak.ac.ke](http://www.kabarak.ac.ke)

28<sup>th</sup> July, 2015

#### To Whom It May Concern:

Dear Sir/Madam

#### RE: JANE JEPKOSGEI KIPLAGAT- GMB/NE/0919/09/13

This is to confirm that the above named is a bonafide student of Kabarak University pursuing a Master of Business Administration (Finance Option). Jane has completed her course work and currently carrying out a study on the “Utilization of M-Pesa and Performance of Small and Medium Scale Businesses in Nakuru town and a Pilot Study in Njoro Town.” Your assistance will be highly appreciated.

Thank you.

Yours faithfully,

**Dr John Kamau Gathii**  
**AG.DEAN**

#### **Kabarak University Moral Code**

**As members of Kabarak University family, we purpose at all times and at all places, to set a part in one's heart, Jesus as Lord.  
(1 Peter 3:15)**

#### Appendix IV: List of SME Respondents

<b>S/NO</b>	<b>Name of SME Respondents</b>	<b>Year of Adoption of M-Pesa Services</b>
1	Sammy Stores	2008
2	Summit Mechanics	2007
3	Amsa Communications	2007
4	Oil Libya	2009
5	Rhoki Agencies	2007
6	Flexilink Co Ltd	2008
7	Alhabib Mobile Shop	2007
8	3 K Agrovet	2008
9	Pewa Communications	2008
10	Canaan Supermarket Ltd	2008
11	Super Meat Butchery	2009
12	Naivasha Line Stores	2007
13	Alpha Press	2007
14	Falcon Rice Distributers	2009
15	Honest Bookshop Center Ltd	2007
16	Me Style Collection	2009
17	Rich Gang Collection	2008
18	Elegance Fashion and Beauty	2009
19	Fashion Store	2009
20	Kinamba No 1 Petrol station	2007
21	Eezi Saloon and Boutique	2008
22	Ebeneza Polythenes	2007
23	Maasai Curio	2007
24	Neema Opticians Ltd	2008
25	Kenya Credit Traders	2007
26	Ujuuzi Motorbike dealers	2008
27	El Shaddai Auto Spares	2009
28	D T Dobbia Ltd	2007
29	Hojue Ltd	2007

30	Kims	2007
31	Victory Trading Co	2008
32	Health Quest Chemist	2008
33	Ereto Bookshop Ltd	2009
34	Ngera Computer Garage	2007
35	Kaki Wear	2007
36	Meridho	2008
37	Green Hotel	2009
38	Top Shop	2008
39	Yana Discover Joy Co Ltd	2009
40	Laborex Kenya Ltd	2009
41	Wamboi Collection	2007
42	Bettan Curio Shop	2008
43	Valentine Cake House	2008
44	Botho Solar	2007
45	Veterinary Resource Center	2009
46	Kenyatta Lane Electronics	2007
47	Mwangaza Studios	2009
48	Akim Tailoring Enterprises	2007
49	Jaichi Auto Hardware Ltd	2009
50	Nakuru Medical Center Laboratories	2007
51	Digital City Ltd	2009
52	Autocom Systems Solutions	2007
53	Curios and Handcrafts	2007
54	Lens Feeds	2007
55	African Heritage Art and Crafts	2007
56	Paliyann Trades	2007
57	Mama Shiro Boutique	2007
58	Pea Communications Ltd	2008
59	Pat Dot Com	2008
60	Mwangaza Health Services	2007
61	Mercy Hope Boutique	2007
62	Moraa Curio Shop	2008

63	Jaystec Ventures	2007
64	Jumbo Tonner Ltd	2007
65	Gigawear Co Ltd	2007
66	Black Queen Boutique &Cosmetics	2007
67	Amazing Grace Boutique	2007
68	Masaaï Market Curio	2007
69	Jennifer's Boutique	2007
70	Devine Connections	2007
71	Shally Anne Designers'	2007
72	Bonfat Boutique	2007
73	Faith Beauty Pallor	2008
74	Stan Bookshop	2009
75	Cathy Mobiles	2007
76	Beth Curio	2007
77	Bishops Mobile	2007
78	Vision Printers & Stationery	2007
79	Blessed Curio Shop	2007
80	Micasso	2008
81	Interworld Services	2008
82	Sandbeam Enterprises	2008
83	Steve's Machinery	2007
84	Scorpion Ltd	2008
85	Ngisa Curio Shop	2008
86	Vega Auto Select	2008
87	UAP	2008
88	Goodwill Wines & Spirits	2008
89	Majest Technologies	2008
90	Kasanga Curio Shop	2008
91	Mache Hardware Stores	2008
92	Efficient Stores	2008
93	Bata Shoe Co	2008
94	Latest Mens Wear	2008
95	Nyagothie Curio Shop	2007

96	Brakoset Classics	2007
97	Exquit Collections	2008
98	Ogola Gas Suppliers	2008
99	Masaai Market Fashions	2007
100	Pride Services	2008
101	Maya Emporium Ltd	2008
102	Flash Dial	2008
103	Shikanisha Enterprises	2007
104	Central Book Center Ltd	2007
105	Ourprice Bookshop	2008
106	Ushindi Communications	2007
107	Davi Stationeers & Computers	2007
108	Innovative Computer Ltd	2008
109	Crater Xray Clinic	2008
110	Joystep Bookshop & Stationeries	2008
111	Umoja Driving School	2008
112	Kenya Women Finance Trust	2008
113	Creek Tours & Travel	2008
114	Nakuru Cosmetic Center Ltd	2008
115	Country Investments	2007
116	Wamboshi Investments	2008
117	Soft Ventures	2007
118	Gloryland Boutique	2007
119	Immaculate Fashions	2008
120	Total Kenya Ltd	2007
121	Royal Upholstery	2008
122	MEA Ltd	2007
123	Valentine Fashions	2008
124	Metropolitan Chemists	2007
125	Total West End Station	2007
126	Baby Shop	2008
127	Sunrays Boutique	2008
128	Eropharm Chemist Ltd	2008

129	Nakuru Cosmetic Stores	2007
130	Vinsat Solutions	2009
131	Amazing Grace Baby Shop	2007
132	Studio	2007
133	Rehem Electronics	2008
134	Family Medical Supplies	2008
135	Bearing House Ltd	2007
136	Salis Mart	2007
137	Super Bargain Hardware	2009
138	Nakuru Wool Shop Ltd	2007
139	Jubba Oil Ltd	2008
140	Petro Oil Kenya Ltd	2007
141	Wamute Classics	2007
142	Nadmar Dry Cleaners	2008
143	Delta Service Station	2008
144	Dream Girl	2008
145	Sally's Phones	2007
146	Interlink Commercial Agencies	2007
147	Phone Fix	2007
148	Supreme Chemists	2008
149	Exodus Fashions	2008
150	Merica Dry cleaning & Laundry	2007
151	Euphy Collections	2008
152	Riva Petroleum Dealers Ltd	2007
153	Mercelina Boutique	2007
154	Sha Outfitters	2008
155	Blessed Hands Boutique	2007
156	Daveshish Enterprises	2008
157	Midrift Pharmacy	2007
158	Seal Honey	2008
159	Optica Ltd	2007
160	Mobile Accessories & Solutions	2007
161	Fresh Farm Hotel	2007

162	Care Chemists	2007
163	C.K. Patel Ltd	2008
164	Meems Ltd	2008
165	Indulgent	2008
166	Shell Petrol Station	2007
167	Daily Nation Media Distributers	2007
168	Farm Parts Ltd	2007
169	Colosonic Ltd	2008
170	Mudacom Communications	2007
171	Xristal Trading Co Ltd	2008
172	Wanntech Technologies	2007
173	Business Computers Company	2008
174	Salama Tyres	2007
175	Sally's Collection	2007
176	Summit Tailorings	2008
177	Umesh Co Ltd	2007
178	Maryland Boutique	2009
179	Arbaaz Auto spares	2009
180	Eagles Kenya Ltd	2007
181	Everest Collection	2007
182	Alwady Butchery	2008
183	Monic Trade Wear	2008
184	Brivana Enterprise	2008
185	For You Clothing Ltd	2008
186	Bono Dry Cleaners	2008
187	Queen's Land Boutique	2008
188	Kefa General Merchants	2008
189	Rwan Pharmacy	2008
190	DB Electronics	2007
191	Agricultural Machines	2007
192	Falion Electronics	2008
193	Telesonic Ltd	2007

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*Source: Field data (2015)*