FACTORS INFLUENCING ADOPTION OF INFORMATION COMMUNICATION TECHNOLOGY AMONG SMALL AND MEDIUM ENTERPRISES IN NAIROBI COUNTY (KENYA)

BY

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RESEARCH THESIS SUBMITTED TO THE INSTITUTE OF POST GRADUATE STUDIES OF KABARAK UNIVERSITY FOR THE REQUIREMENTS OF THE DEGREE OF DOCTOR OF PHILOSOPHY IN BUSINESS ADMINISTRATION (ENTREPRENEURSHIP) OF KABARAK UNIVERSITY

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DECLARATION

This research thesis is my own work and to the best of my knowledge it has not been presented for the award of a degree in any University or college.

Student Signature: _____

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RECOMMENDATION

To the Institute of Postgraduate Studies:

The Project entitled "Factors influencing Adoption of Information Communication Technologies (ICTs) among the Small and Medium Enterprises (SMEs) in Nairobi County, Kenya": written by Michael Mundia is presented to the Institute of Postgraduate Studies of Kabarak University. We have received the research project and recommend it be accepted in partial fulfillment of the requirements of the degree of PhD in Business Administration (Entrepreneurship).

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ABSTRACT

Many SMEs in the clothing industry in Kenya have faced severe competition, so they have adopted ICT to increase their productivities, as most of them indicated. This study investigated the factors influencing ICT adoption among clothing SMEs in Nairobi County (Kenya) with a view of developing a new framework that would accelerate the rate of adoption. The research adopted a descriptive research design. A sample size of 100 Clothing SMEs was drawn from the entire population of 444 firms. A random sampling technique was used to select the respondents. Qualitative data collected was organized into themes and sub themes and conclusion drawn. Quantitative data was analyzed using descriptive statistics including frequency distribution table which incorporated means and mode with the aid of Microsoft excel software. Inferential statistics; factor analysis and multiple regressions were used to establish the adoption of ICT by SMEs in Kenya. The study found out that a significant number of organizations faced difficulties in the selection and implementation stage of ICT adoption. There is a significant level of ICT adoption in the operations of the clothing SMEs. Technology availability, compatibility, complexity, characteristic, accessibility; organizational aspects such as managerial structure, readiness, culture and HR competency and external factors such as regulations, market structure, economic conditions and social factors have greatly influenced ICT adoption level in the industry. Based on the study findings the researcher recommends that, the clothing sector should ensure that every organization has personnel who are rich in innovativeness and ICT competence.

Key words: Adoption, Small and Medium Enterprises, Information technology, diffusion and innovations.

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ACRONYMS/ABBREVIATIONS

ADB …….African Development Bank

AGOA…….African Growth and Opportunity Act

APA …….American Psychological Association

B2B …….Business to Business

B2C …….Business to Customer

CEO ……Chief Executive Officer

CRM …….Customer Relationship Management

Development Information Programme

DOI …….Diffusion of Information

E.B……...Electronic Business

E.C ……. European Commission

EAI …….Enterprise Application Integration

EB …….Electronic Business

EC …….European Commission

EDI …….Electronic Data Interchange

EM …….Electronic Markets

EPZ …….Export Processing Zone

EPZA ……..Export Processing Zone Authority

ERP …….Enterprise Resource Product

ERR …….Enterprise Revenue Planning

ES …….Enterprises Systems

GDP …….Gross Domestic Product

HR …….Human Resources

IBLT …….Instance Based Learning Theory

ICDC …….Industrial and Commercial Development Corporation

ICT …….Information and Communication Technologies

ILO …….International Labour organization

ISS …….Import Substation Scheme

IT …….Information Technology

ITAA …….Information Technology Association of America

IXP ……..Internet Exchange Point

KEBS …….Kenya Bureau of Standards

KIPI …….Kenya Industrial Property Institute

KIROI …….Kenya Industrial Research and Development Institute

KM …….Knowledge Management

KMS …….Knowledge Management Systems

KNFJKA……..Kenya National Federation of Jua Kali Association

MNC …….Multinational Corporations

MUB ……Manufacturing – Under – Bond

OECD …….Organization for Economic Co-operation Development

P.U……Perceived Usefulness

PC …….Personal Computer

PEOU ……..Perceived Ease of Use

PIIT …….Personal Innovativeness in Technology

PU …….Perceived Usefulness

SCM …….Supply Chain Management

SDU …….Situation Decision Utility

SE …….Small enterprise

SMEs …….Small and Medium Enterprises

STI …….Science, Technology and Innovation

UNCTAD…… United Nationals Conference on Trade and Development

UNDESA …… United Nations Department of Economic and Social Affairs

UNDP /APDIP…… United Nations Development Program – Asian and Pacific

UNDP……United Nations Development Program me

UNIDO……...United Nations Industrial Development Organization

USD ……United States Dollar

VSAT ……...Very Small Aperture Terminal

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DEFINITION OF TERMS

Adoption

Adoption is decision to make full of or to accept with approval or favorable reception of something for example an innovation (Rodgers, 1983).

Business Environment

It is the environment in which business is operating at (Infosys, 2011), and a healthy business environment includes a transparent, open and competitive business framework, clear, independent rule of law for all firms, easy set up and dissolution of businesses transparent, simple and accessible corporate regulation and equal stable legal treatment for nationals and cross-border transactions (OECD, 2004).

Communication

Communication is a process in which participants create and share information with one another to reach a mutual understanding (Rodgers, 1983).

Diffusion of information Theory (DOI)

DOI is concerned with the manner in which new technological ideas migrate from creation to use and that technological innovation is communicated through particular channels, over time, among the members of a social system. (Tan, Chong, Lin and Eze 2009)

E-business

UNDP – APDIP's e-primer on e-commerce and e-business (2003) defines e-business as "the transformation of an organizations processes to deliver additional customer value through the application of technologies, philosophies, and computing paradigm of the new economy (Cassidy 2000) defines e-business as the integration of people processes and technology to conduct business.

Entrepreneur

An entrepreneur is a person who has possession of an enterprise, or venture and assumes significant accountability for the inherent risks and outcome (Saleemi, 2011).

ICT: Information, communication Technologies.

ICT comprises all the digital devices and techniques used by organizations and individuals to create, capture, organize, package, store, use disseminate and dispose information (Kwaya, 2009).

ICT Infrastructure environment

It assess the quality of the national ICT-related infrastructure both in its hard elements (namely the number of telephone lines), and secure internet bandwidth, and accessibility of digital content and softer, human infrastructure in a given economy, quantitative measures such as tertiary enrollment rates and education expenditure as combined with a qualitative assessment of the scientific research institutions and the availability of scientists and engineers (World Economic Forum Journal, 2010).

Innovation

Innovation is the embodiment combination and / or synthesis of knowledge in novel, relevant, valued new product, process or service (Leonard and Swap, 1999).

Network Infrastructure

It is a broadband connectivity that accelerates the contribution of ICT to economic growth, facilitates innovation, and promotes efficiency, network effects and positive externalities (OECD, 2004).

Organization

Organization according to Web Finance Institution (2013) is a social unit of people that is structured and managed to meet a need or to pursue collective goals. All organizations have a management structure that determines relationship between the different activities and the members, and subdivides and assigns roles, responsibilities, and authority to carry out different tasks. Organizations are open systems – they affect and are affected by their environment. A business organization is an individual or group of people that collaborate to achieve certain commercial goals (Kokemuller Neil, Benard Media, 2013).

Small and medium Enterprises (SMES)

There is no acknowledged definition of Small and Medium Sized Enterprise (SME). In Kenya, the main criteria that determines SMEs definition is the n0umber of employees, turnover and the balance total (Burns, 2001). The African Development Bank defines SMEs

as having less than 50 employees. SMEs are independent in ownership and operation, have close control by owners/managers who contribute most capital and principle decision making is done by the owner/manager (ADB, 2001).

Social Influence

The term 'social influence' refers to the extent to which members of reference group influence one another behavior and experience social pressure to perform particular behavior (Kuloinet, et. al, 2007; Kalman, 1958)

Technology

Technology is the science and art of getting things done through the application of skills and knowledge (Smillie, 1991).A body of knowledge, techniques, methods, tools, processes and designs (Aduda and Kaone, 1991). Technology is the means by which man undertake to change or influence the environment. Technology is therefore is the knowledge, tools and machines available for the production of goods and services or simply the application of knowledge to practical acts or applied science.

Technology Adoption

It is a decision to make full of an innovation as the best course of action (Rodgers, 1983).

Technology Diffusion

Rogers (1983), diffusion is as a process by which an innovation is communicated through certain channels over a period of time among the numbers of a social system.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

The 21st century global trend in business and industry is experiencing rapid change. The worldwide commerce system is evolving from traditional activities to knowledge and information based economy (Ghibakhoo, et al. 2012). The prevalence and dynamic growth of Information Communication Technology (ICT) in the transformation of business and human society from the information technology age in a knowledge age is unprecedented in the history of man. (Oladipupo et al 2012). ICT continues to have a profound impact on all spheres of our life; be it economic, social, technological, legislative, political or environmental; ICT drives businesses. The integration of ICT in Small and Medium Enterprises SME) facilitates management of the changing demands, innovation of new processes, new products, and developing new applications, hence enhance business performance (Oganga, 2012) amidst a competitive business environment (Oladipupo, 2012).

According to European Commission (2013) Information Communication Technology is the strongest driver for competitiveness, productivity, innovation and change in our modern economy. ICT is changing our lives, the way we socialize, work, shop, and search for information and communicate. ICT cuts across all industries and services and create wealth, growth and jobs. The ICT main impact is through modernization of traditional activities. Smart innovation enabled by the internet and ICT development leads to higher productivity and has benefited all industries. The information and communication technologies (ICT) have assumed a

central position in the development agenda of most countries due to their critical role in facilitating social-economic development (Mokaya, 2012).

The modern economic environment which is dominated by globalization, hyper-competition resolution has revolutionized the way business is conducted. This new technological epoch is apparent through intensified investment in computer-processing and data preparation appliances in the manufacturing and service industries and telecommunication, infrastructure (Ghibakhloo, 2007). ICT covers any product that will store, retrieve, manipulate, transmit or receive information electronically in a digital form, management of computer based information systems (Chen, 2004: Information Technology Association of America, ITAA). Technological progress has become a significant force behind many socioeconomic changes (Dierckx et.al, 1999). The utilization and commercialization of ICT have become the most effective tool in coping with strong waves of globalization and liberalization across the world in doing business.

Nowadays, both large organizations and small and medium-sized enterprise (SMEs) are seeking ways to reinforce their competitive position and improve their productivity. (Premkmar, 2003). ICT is believed to be the most cost effective tool to help companies gain bigger markets and the ability to compete with large organizations in attracting customers to their products, services and information (Tan et.al 2009). ICT significantly assists SMEs with the required infrastructure, which is necessary for providing appropriate types of information at the right time (Ghobakhloo 2012). IT additionally provides SMEs with competitiveness through integration between supply chain partners and inter-organizational functions, as well as by providing critical information (Bhagwatet. al, 2007). ICT allows SMEs to innovate on the product or process which helps them with a competitive advantage to generate more profit (Kotelnikov, 2007). It enables all forms of

innovations from social to organization and technological innovation and boosts business efficiency and competitiveness in the global market (European Commission, 2013)

ICT plays a significant role in global economy G.D.P growth, improved education and health care access and services, the larger value of share added than employment reflecting the relatively high capital investment and production of the enterprise. (Global Information Technology Report 2009-2010, UNCTAO, 2010, UN 2011). An advent of internet has changed the global business landscape. Internet accounts for 10% of GDP growth over past 15 years. Recent ICT developments like Enterprise 2.0, Cloud computing, Social networks, etc, are enabling dynamic new and smaller companies to develop and bring to the market innovations that were previously too expensive to develop (European Commission, 2013).

Previous studies reveal a number of ICT adoption bottlenecks and poor business support information infrastructure within SMEs in different countries (UNDESA 2005, Mundy et. al, 2001). To this end very few studies have been made that deal with SMEs in Kenya. Due to the unique characteristics of each firm in each country and in specific conditions of technological innovation diffusion, this study carries out an empirical testing on the factors raised to determine their relevance and conformity in the practical setting for the SMEs in Kenya. Due to the significance of ICT usage in business, it is useful to consider ways to enhance the business use of ICT in the context of private sector development. However, it is important to note that the main challenge to this effect lay in developing an effective framework that would facilitate an effective integration of ICT into enterprise development and operations. This research aimed at better understanding of ICT adoption in SMEs through identifying factors influencing ICT adoption process within SMEs, the nature and the extent of its adoption by the SMEs in Kenya. In addition, by using the findings and conclusions of this study, an appropriate proposal of a

suitable adoption framework has been made for SMEs to succeed in ICT institutionalization within their business operations

1.2 Kenya's ICT Infrastructure

The first ICT tools in Kenya were introduced by the British colonialist in the 19th century; telegraph was the first documented ICT tool to be used in Kenya around 1896 when the first telegraph network linking Mombasa and Lamu was constructed. Later telegraph and broadcasting services emerged after the First World War (Kwaya, 2009). Until 1997 ICT infrastructure (telephone, fax, postage services, television and radio) was controlled and owned by the government. A major milestone in the development of ICTs in Kenya is the 1997 statement of government policy on telecommunication development for the year 2015. This policy statement liberalized ICT market (Kwaya 2009). The policy statement, according to Kinyanjui and McCormick (2002), split the telecommunication and postal services organization into three organizations, namely the Postal Corporation of Kenya (Posta), Telkom and the Communication Commission of Kenya (CCK). Kinyanjui and McCormick (2002) further explain that Telkom controls all telecommunications traffic in Kenya, Posta controls all postal services, while The Communication Commission of Kenya (CCK) role is to license and regulate the communication sector, establish interconnection principles and manage the radio frequency spectrum.

The 1990s also witnessed the great ICT revolutions leading to the emergence of internet and mobile telephone in the Kenyan market. These two developments played a pivotal role in building the current ICT landscape in the country today (Kwaya 2009). An Internet Exchange Point (IXP) which serves as a clearing-house for local internet traffic between internet service

providers (ISP) was formed early in 2007. (Kinyanjui and McCormick, 2009). To ensure faster and affordable connectivity to the internet, the government also liberalized the supply and installation of Very Small Aperture Terminal (VSAT) terminals. Even though ICTs was already part and parcel of the Kenyan society, the adoption levels are still much lower than in other countries in Africa such as South Africa, Botswana, Senegal and Togo (Kwaya, 2009).

According to Kwaya (2009), the Kenyan ICT industry is characterized by, the government still playing a major role in the regulation, licensing and provision of ICT services, there is no facilitating legislation in place to support the expansion and widespread adoption of ICT services and tools. A good attempt has been made to achieve this through the Kenya Communication (Amendment) Act 2008 but there are controversies on some of its sections. It is still under review; most ICT tools are imported from the developed countries, making them more expensive and complicated; there is less research and development of ICT tools and techniques leading to lack of local content, technologies and innovations; public sector ICT tools are mainly donations which are ordinarily out of date and cannot be effectively used; driven generally by profit minded organizations ought to reap maximum returns on their investments and low national budgets. The prior literature reveals that most firms in Kenya are still grappling to fully adopt ICT. There is need to develop an appropriate framework of adoption that would enable them fully integrate ICT in their activities.

However, according to the World Bank, African Development Bank and African Union Report (2012) Kenya's ICT infrastructure has improved dramatically. The cost of a monthly broadband subscription had fallen from USD 159 in 2008 to USD 39 by the end of 2009 due largely to the successful competition of the TEAMS AND SEACom undersea cable project. Furthermore, with

the launch of the Kenya Internet Exchange Point (KIXP) latency has declined dramatically. According to the Communications Commission of Kenya Report (2010), mobile penetration stands at 61% and internet penetration is at 22%. The data from 2000 to 2012 shows that there is gradual increase in internet penetration in the country from a mere 0.4% to 70.7% and this is projected to increase even more over time. The trend is the same with mobile penetration. Also, as the total population and subsequently the urban population increases, the ICT expense of GDP also increases over time.

The Kenyan tech space has benefited from strong environmental factors. Those foundational drivers include an educated populace with access to broad based primary through graduate level institutions, a large Diaspora who returns to the country and high exposure of international institutions due in part to its role as the African base for many Multinational Corporations (MNC) and multi-lateral organizations. The governments focus on developing an ICT enabled the country has contributed to the development of robust ICT landscape, science, technology and innovation (STI) as core pillars of Kenya's Vision 2030 plan. The Kenya government intends to develop a technology neutral robust ICT sector that will enhance economic growth through creation of businesses and hence employment (Kenya ICT Board, 2013)

While acknowledging that the country's ICT adoption levels are still low, the Kenyan government recently unpacked on ambition ICT Master Plan (2014 - 2014). The ICT Master Plan aimed at increasing access to cheaper ICT solutions to propel Kenya towards being the East African region's ICT hub within the next four years. The Master Plan, which relies heavily on public - private sector partnerships, is expected to help the country's ICT sector become a standalone economic sector in two years' time, create 180,000 jobs and contribute 8 percent of

national income (The Standard Newspaper, April 22, 2014). According to the plan the government intends to improve the broadband penetration levels to thirty five percent in each household, hundred percent in schools and hundred percent in health centers by 2017.

ICT has a critical role in driving the economic, social and political development of Kenya as espoused in vision 2030. It is a roadmap to a knowledge economy and society that will lead to real socio-economic growth (The Standard Newspaper, April 2014). Kenya government rolled out an ambitious ICT master plan (2014-2017) that is anchored on three foundations: ICT human capital and workforce development, integrated ICT infrastructure and integrated information infrastructure. (The Standard, 2014).

1.3 Kenya's Clothing SMEs and ICT Adoption

In Kenya, SMEs is a "Juakali sector" that accounts for 75% of the total employment in Kenya while contributing 18.4 percent of the country's Gross Domestic Product, this sector has caught the attention of government and other private sectors in a bid to move the country to a middle level economy as envisaged in the development blueprint Vision 2030. The Kenyan government is strategizing on how to create an enabling environment for this sector with the realization that the sector is a key pillar of the country to realize its Vision 2030. Statistics from the Economic Survey (2009) show that SMEs created 533,500 jobs an equivalent of 93% of the 566,200 jobs created in the country in 2009, while the mainstream sector created a paltry 33,700 jobs in the same year. The ballooning of SMEs in every sector of the economy has been indicative of investor's interest in the Kenyan economy even as these SME sector identified that SMEs in the informal sector had impressively grown from 900,000 enterprises providing jobs to 1.3million Kenyans in 1993, to 1.3 million enterprises employing 2.3 million Kenyans in 1999.

The Kenyan government guided by Sessional Paper No. 2 of 2005 launched the 4K MSE 2030 initiative under the first five years of 2007-2012 of Vision 2030. The institutions that were to work under the 4K initiative include the Kenya Industrial Research and Development Institute (KIRDI), the Kenya Industrial Property Institute (KIPI), the Kenya Bureau of Standards (KEBS), and the Kenya National Federation of Jua Kali Association (KNFJKA). The initiative was tasked with ensuring SMEs produce quality products that meet both local and international standards, while enhancing consistency and cooperation with other sectors. The specific objectives were to: upgrade the SMEs products; build capacity for SMEs to manufacture upgraded products; promote innovation and technology transfer; instill a culture of quality and standardization and promote the use of intellectual property as a tool of trade and business. Despite government efforts to uplift ICT adoption among the SMEs in Kenya, the adoption rate still remains very low.

The report (Business Daily, October 2010) on top 100 SMEs 2010 detailed among other things, ICT use and the factors that SMEs consider before buying a particular software and mode of internet connection they use. The survey found that 95 percent of the firms interviewed were connected to ICT infrastructure and have computers. The report further indicated that the majority of the SMEs, 93 percent, which featured in 2010 top 100 enterprises in Kenya had invested in accounting software followed by Data Base Management at 45 percent, Business Management (31 per cent) and Customer Relation Management and Enterprise Resource Management Software at 25 percent and 21 percent respectively. From these reports, it is worth noting that although the majority of the top 100 SMEs had adopted ICT in their business operations, most of ICT operation packages were not adequately adopted (21-45 percent on average). This necessitates the study to determine factors that hinder adequate adoption of ICT

by SMEs and hence developing a possible framework/strategy that would accelerate its adoption.

The Kenya clothing and textile industry strategic significance cannot be underestimated. This industry has been a major source of exports growth and revenue, particularly under African growth and revenue, particularly under the African Growth and Opportunity Act (AGOA) (Kamau & Munandi 2009). The clothing sector is labor intensive and has been an important source of job creation. The clothing industry has been viewed as a major source of employment. It is also viewed as a lead sector in the industrialization process of low-income economies. Its low skills requirement and large labor absorption potential have made it as an important source of non-agrarian employment for the rural populace. To add garment industry offers tremendous prospects for employment of women, unlike other traditional manufacturing sector (McCormick et al, 2007; Vijayaskar, 2002). The nature of skills is involved - generally unskilled work for women - has had important distributional consequences and has helped to mitigate the un-equalizing consequences of globalization (Kaplinsky, 2005).

Economic history shows that the clothing and textile industry played an important role in the industrialization of today's developed countries. The industry's unique characteristics of being labor intensive and its links with other sectors of the economy, such as agriculture provides an important avenue for the developing countries wishing to industrialize (Kinyanjui et al 2002), should begin with clothing and textile industries. Textile industry ranges from small to large - scale production and is more global than any other sector. The clothing industry faces stiff competition from more established manufacturing economies such as China. Adoption of the new technology is regarded as an important tool in dealing with the new market trends. Kenya ICT levels among the clothing SMEs is still low. (Kinyanjui & McCormick, 2002). It would

therefore important to identify the factors that impend ICT adoption among clothing SMEs in Kenya.

1.4 Statement of the Problem

Information and Communication Technology (ICT) has been the main catalyst of modern businesses around the world and it is likely to take a leading role in the enhanced performance of small and medium enterprises as well (Wakori & Ocholla, 2012). ICT makes enterprises more accessible to local and global markets, improve market information, and provides information for better and more competitive prices and lowering cost of doing business (Rao, 2004; Shiel, et al 2003; Moyi, 2003; Kalliroi, 2006). Additionally, ICT contributes significantly to social, economic and political development, facilitates the distribution of wealth/economic empowerment, vital in changing approaches of doing business, establishes a direct link between suppliers, and distributors and enabling faster and more efficient service delivery and transactions (Kalliroi, 2006; Migiro 2006; Donner, 2004; Hafkin, 2001; Opiyo & K'Akumu, 2006; Castell, 1999). Small and medium enterprises are viewed as drivers for economic growth and innovations, seedbed for medium and large scale entrepreneurs and critical in achieving economic development (Brisco, 1998; Republic of Kenya, 2002; Kotelnikov, 2007; Mokaya, 2012). ICT as an enabler of other sectors, offers opportunities for enhancing business performance, and yet most SMEs have not fully harnessed the ICT potential as compared to large enterprises. The question addressed in this study was how Kenya's SMEs and especially its clothing SMEs would experience the ICT-led paradigm-shift in business that has been experienced in developed countries.

The Kenya's ICT adoption levels are still very low for a variety of reasons (Okieng, 2014;

Sundays, 2014). SMEs in Kenya have been grappling with various problems that have caused them enormous losses due to lack of potential to grow. While the government of Kenya has introduced an ICT policy that seeks to create an enabling environment for all business to benefit from the use of ICT, it is not yet clear the extent and nature to which SMEs in Kenya has adopted ICT. Despite advances in ICT adoptions by large enterprises the same level of adoption is not evident among SMEs (Marshall et al 2000). This suggests that SMEs must be facing challenges/barriers while adopting ICT into their operations. This study critically investigated the factors that cause the slow rate of ICT among clothing SMEs and proposed new approaches of mitigating the effects of these factors in order to enhance adoption and performance.

Many research studies have been carried out in Kenya in the informal sector (eg. Lundisal et al., 2005; Bigster and Durerall, 2004; Kimuyu, 1997; and Ongile & McCormick, 1996). Wakari (2012) asserts that there have been few studies focusing on the ICT adoption, diffusion and ICT potential among the SMEs in the country. Other studies have identified issues like, lack of familiarity with new and changing technologies and lack of awareness, skills and understanding of ICT as some of the challenges faced by SMEs in Kenya (Inutula & Van Brackel, 2006; Opiyo & K'Akumu 2006). Many SMEs operated without basic communication technology like fax machines, emails or the internet (Opiyo & K'Akumu, 2006). Prior studies also revealed that most clothing SMEs in Kenya had not embraced fully the Advanced Technology Systems into their operations such as Database Enterprise Resource Management, Customer Relation Management and Inventory Management Software over their internet protocol. These Enterprise System (ES) consolidates a range of business processes (Kinyanjui &McCormick, 2012, Kenya ICT Board, 2013; Eusing, et al 2012). These challenges are responsible for the lack of sustainable growth in many organizations in Kenya (Migiro, 2006; Opiyo & K'Akumu 2006). In order for the modern

business organization to improve their performance they must continually address them so that the arising dynamism in the technology adoption process adapt to the evolving new technological innovations and redress the barriers for effective adoption. This study makes recommendations that would enable organizations adopt and adapt effectively ICT into their operations in order to enhance their efficiency and performance.

Kenya SMEs is diverse in nature and size. In this study the clothing SMEs was expected to provide a case study for the investigation of the factors influencing and extent of ICT adoption by SMEs in Kenya. Secondly, the clothing industry is regarded as a critical sector in the industrialization process for rapid economic development of any country. This sector is a major source for economic growth, revenue, job opportunities and employment. Thirdly, the clothing SMEs are significant in number. They are spread throughout the country, representing about 15percent of all SMEs and over one-third of all manufacturing SMEs in Kenya (McCormic, et al 2007). Recently, this sector had experienced significant crises from cheap imports and stiff competition from more established manufacturing economies such as China. The adoption of ICT is regarded as the most effective tool for coping with the new global and local market trends. Failure to adopt ICT had led to the high cost of production, low profits, poor business inter-linkage and networking, slow growth rates and hurts the economy by extension. This study sets out to examine the underlying factors impeding ICT adoption among the clothing SMEs in Kenya with a view of proposing and developing a suitable framework of adoption that would enable businesses to fully integrate and benefit from new technological innovations.

1.5 Objectives of the Study

1.5.1 General Objective

The general objective of this study was to examine the factors influencing ICT adoption process within Clothing SMEs in Nairobi County (Kenya).

1.5.2 Specific Objectives

The specific objectives of the study were as follows:

i. To explore the extent to which technological factors affect ICT adoption by clothing SMEs in Nairobi County (Kenya).
ii. To assess the extent to which organizational factors influence ICT adoption by clothing SMEs in Nairobi County (Kenya).
iii. To examine the extent to which environmental factors influence adoption of ICT by clothing SMEs in Nairobi County (Kenya).
iv. To propose a framework for effective ICT adoption by clothing SMEs in Nairobi County (Kenya).

1.6 Hypothesis

Fraenkiel and Wallen (2006) define hypothesis as a prediction of same sought regarding the possible outcome of the study. The study employed null hypothesis (H_0).

H_0: There is no relationship between technological factors and adoption of ICT by SMEs in Kenya.

H_0: There is no relationship between organizational factors and adoption of ICT by SMEs in Kenya.

H_0: There is no relationship between environmental factors and adoption of ICT by SMEs in

Kenya.

1.7 Significance of the Study

Recommendations made from the study aimed at providing valuable insights and developed strategies for ICT adoption by development economists, academicians, development partners and policy makers working in the field of private sector development. This would enable the SMES in developing countries like Kenya to overcome the barriers of ICT adoption and hence their transformation and consequently transforms the national economy. The recommendations resulted in developing a practical framework, for effective adoption and implementation of ICT by SMEs in Kenya. Further, the use of an effective ICT adoption framework by SMES will transform businesses in terms of their productivity, performance, efficiency and effectiveness in operations leading to a rapid economic growth rate and consequently enables the country to achieve its vision 2030.

1.8 Limitations of the Study

The population of the study is too informal, that means most SMEs lack proper planning, registration, recording and other universally acceptable business standards. Most SMEs activities are conducted informally without following proper established legal framework. They are characterized by unregistered business, self-employment, casual activities, ease of entry, low resource, family ownership, labor intensive, adapted technology, informal process of acquiring skills and little or no document transaction. Such prevailing business informal conditions make it difficult to extract systematically vital information for the study. The SMEs also lacks unanimity in decision making and are not homogeneous. There are different kinds of informal businesses depending on the industry, the geographic region and the size. Gathering and analyzing the

information from different kinds of a business poses a challenge in terms of developing harmonized conclusions.

The study was extensively in terms of geographical area and population covered. It hence made it expensive in terms of travel and time consumed. Finally, a lot of resources were required to cater for transport, reading materials, internet access, typing and producing the needed documents.

1.9 The Scope of the Study

This study focused specifically on the Clothing businesses, as documented in the Kenya Business Directory (2010-2013). The total number documented during this period was 444 from across the Country. The SMEs in Kenya or "Jua Kali" enterprises are found in all sectors of the economy. These include agriculture, energy, health services, hospitality, retail and distribution, real estates, information communication technology services, logistical services and manufacturing. The clothing industry in Kenya is diverse in terms of size, ownership, and technology and market orientation. Broadly speaking the Kenyan clothing enterprises are of three categories, that is, micro and small enterprises, medium sized enterprises and very large enterprises. This study focused on the micro and small enterprises due to their economic significance and their population size (one third of the total manufacturing SME's) in the entire Kenyan economy.

1.10 Research Ethical Issues This study upheld all ethical issues and practices like:

a) Confidentiality - the information was handled with confidentiality and for purposes of the research only .b) Honesty- when collecting data the sample population was made aware what information was being used. c) Acknowledge of the source of information, especially when using other people's research. d) Protect rights and damages

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter reviews the available literature on ways of adoption of ICT and also the theories applicable for adoption of ICT by clothing retail small and medium enterprises in Kenya.

2.2 Adoption of Information Communication Technologies by Small and Medium Enterprises

In this study "adoption" refers to the stage in which technological innovation is selected for use by an individual or organization. "Diffusion" refers to the stage in which the technology innovation spread to general use and application by managers/owners of clothing SMEs in Nairobi County.

The information and communication technologies (ICT) are quickly changing the conventional way of doing business. The advantage inherent in internet such as speed, user friendliness, low cost and wide accessibility has allowed electronic commerce (e-commerce) to be increasingly diffused global, bringing countries into a global networked economy (Gibbs and Kraemer, 2004). As the global economy becomes increasingly reliant on information technologies to receive, process and send out information, SMEs in developing countries should not be left behind otherwise, they will lose out on opportunities to integrate into the global supply chain, bid for out-sourcing business, and increased productivity and efficiency (UNDP, 2005). SMEs play important roles in improving the economic power of a country (Maitland, 2002; levy 2005).

2.2.1 The Adoption of Technology Process

Adoption is a decision to make full or to accept with approval of something, while technology adoption is a decision to make, full of an innovation as the best course of action (Rodgers 1993). Koteinikov (1990) states that in the adoption process, initially, the SMEs become aware of the benefit ICT can bring to their core business through channels such as word of mouth, media and workshops. If they believe that ICT need indeed has potential to improve their business, they proceed to the next stage, where they consider whether or not to adopt ICT. In this stage, SMEs tries to find out the exact cost and benefit of implementing ICT by obtaining a price quotation and seeking advice from supporting agencies or other SMEs. When SMEs become convinced that the benefits do, in fact outweigh the costs, they will begin to adopt ICT into their business practice. If the experience proves to be positive, SMEs may either increase their investments or move towards the final stage of using ICT to innovate in their business practices. SMEs generally prefer products and services that are easy to implement and low costs.

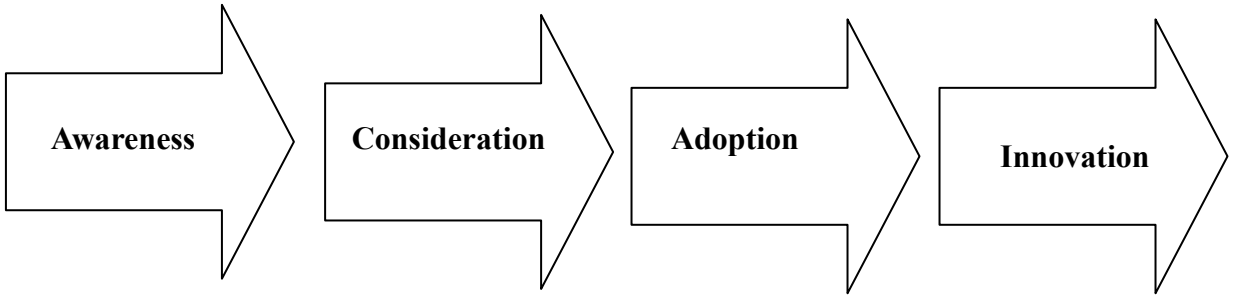


Figure 2. 1: Stages of ICT Adoption (Koteinikov ,1990)

The technology adoption process begins with awareness of the technology and progresses through a series of steps that end in appropriate and effective use (Bridges, 2006). According to

Bridges (2006) the technology adoption process has five steps. The first step is awareness where potential users learn enough about the technology and its benefits, and decides whether they want to investigate further. This is followed by an assessment which involves the potential users' evaluation of the usefulness and usability of the technology and the ease or difficulty of adopting. Then there is the acceptance which involves the decision by potential users to use the technology or not to. Learning is the fourth step and it involves the development of skills and knowledge required to use the technology effectively. The last step is usage where the users demonstrate appropriate and effective use of technology.

Moore (1999) further identifies ten steps technology adoption process would take under three sub categories. First is the system selection step where a needs assessment is carried out followed by identification of system specification of business requirements, system evaluation and selection then cost justification. The second step involves a system implementation which is characterized by purchase, configuration and installation, customization to meet specific business functionality required by users, and finally data conversation transfer and integration with existing system. The final step in Moore's technology adoption process is the systematic use, which involves four steps; user education on the benefits of the system not in terms of technology, but about how it will make their job easier, user motivation to adopt the new system knowing the business value motivates user to adopt, User training to learn the new system and Ongoing support and maintenance of user as needed. Moore's technology adoption steps is further summarized in table 2.1.

Table 2. 1: Moore's Technology Adoption Steps

System selection	System implementation	System use
Assess needs	Buy, install	Educate
Evaluate and select	Customize	Motivate
Justify	Convert	Train support

Source: Moore (1999)

Resistance to change is one of the greatest barriers. Process needs to be addressed formally. According to Karahnna, (1999) the user and potential adopters of IT differ on their determinants of behavioral intention, attitude and subjective norm. In addition, potential adopters base their attitude on the richer set of innovation characteristic than users. Potential adopters' intention to adopt is solely determined by normative pressures from top management, supervisors, peers, friends, and computer specialists whereas user intention is solely determined by attitude. Karahanna further adds that whereas pre-adoption attitude is based on perceptions of usefulness, ease-of-use, result demonstrability, visibility and reliability, position adoption attitude is only based on instrumentality, beliefs of usefulness and perception of image enhancements.

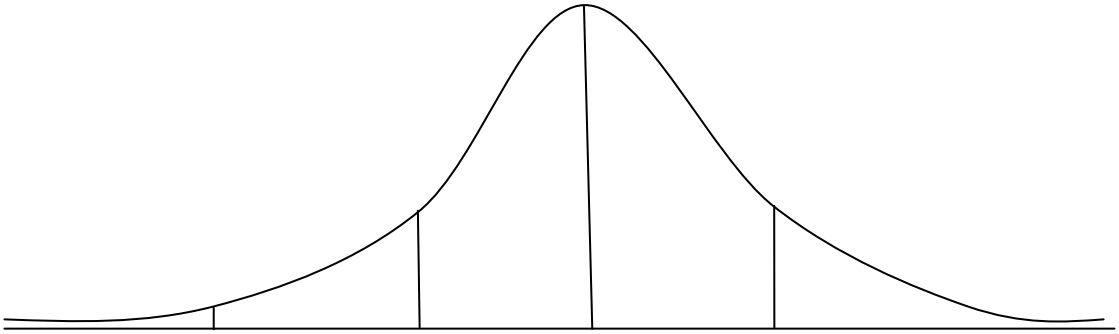
The discussions above highlight and recommend four critical stages/steps involved in adoption process of the new technology. These steps include; (i) awareness of the existence and benefits of new technology (ii) consideration to adopt, done through assessment and evaluation of cost and benefits (usefulness) of the new technology (iii) acceptance or adoption stage involves system implementation and training the user of the new technology and (iv) the innovation stage, involving developing new skills and knowledge required for appropriate and effective use and maintenance of the new technology. Other factors that come into play in implementing process include individual intentions and attitudes / as per subjective norms or beliefs. The process of

adoption steps highlighted by prior literature does not address adequately the factors that influence the decision to adopt or not to adopt.

2.2.2 The Technology Adoption Curve

The Adoption Curve shows the market adoption characteristics of innovation over time. There has been substantial literature aimed at understanding the adoption process of technologies and how actions differ from one another, the different categories include innovators, early adopters, early majority, late majority and laggards (O'Leary, 2009). The results of these studies are presented graphically in a curved form. The adoption curve has been presented in two different formats. Cumulative version curve by Gartner (2012) is the adoption curve that traces the cumulative adoption of a technology over time. When cumulative adoption decreases, it indicates that the technology is obsolete and users are shunning it for other technologies.

Rogers (1983) also investigated on the adoption on a curve and included additional information the probability density version of the adoption curve (in contrast to the cumulative (version). So-called "ideal" types of firms are generated based on when the technology is adopted. These include the following; innovators, early adopters, early majority, late majority and laggards. The bell shaped distribution of innovativeness and the percentage of potential adopters theorized to fall into each category. On one extreme of the distribution are the innovators who are risk takers and pioneers who adopt an innovation very early in the diffusion process. On the other extreme are the laggards who resist adoption of an innovation until rather late in the diffusion process (Rogers, 1983).Technology adoption life cycle is a sociological model developed by Joe M (Rodgers, 1983). It describes the adoption or acceptance of a new product or innovation, according to demographic and psychological characteristics of defined adopter group.



Innovators	Early Adopters	Early Majority	Late Majority	Laggards
7.5%	13.5 %	34%	34%	16%

Figure 2. 2: Adoption categorization on Basic Innovativeness (Rogers, 1993)

According to Moore (1995), innovators are the people who are fundamentally committed to new technology on the grounds that sooner or later, it is bound to improve our lives. They are the people who are committed to new technology. Innovators are the first to buy into a new technology. The total size for innovators is very small. Innovators often pay a high force to acquire new technology. They also are the people who give the stamp of approval and share about the new technology with others. Early Adopters/ Visionaries are users ahead of the curve and willing to try new technologies. They are a little more conservative than the innovators but open to new ideas and innovation. They see technology as tools to solve problems. They adopt new technology and use it to exploit competitive advantage over the old order. Early Majority stick with the herd and will rarely be the first to try out a new technology. They adopt new technology after proven track record. Companies, businesses and infrastructures purchase new technology not for the sake of innovation but to keep up with the competitive edge. They believe in evolution, not revolution, they are interested in making their companies' systems work effectively and look to adopt innovations only after they have established a proven track record. Late majority/ Conservatives typically raise a lot of questions, slowing the decision-making

process. It is fairly large in number as the name implies. They wait until the technology is well tested, fully accepted and affordable. Laggards/ the Skeptics will likely never obtain a new technology unless someone else in the practice makes the decision to purchase it. They tend to be nay Sayers, who try to block purchases.

2.2.3 Technology adoption as a business strategy

For Rodgers, (2003,) a technology is a design for instrumental action that reduces the uncertainty in the cause-effect relationships involved in achieving a desired outcome. It is composed of two parts; hardware and software. While hardware is the tool that embodies the technology in the form of a material or physical objects, Software is the information base of the tail (Rogers, 2003,) since the software (as a technological innovation) has a low-level of observability, its rate of adoption is quite slow. For Rodgers (2003,), adoption is a decision on full use of an innovation as the best course of action available and rejection is a decision not to adopt an innovation.

Strategically, IT tools are employed by SMEs in order to achieve pre-determined business strategy (Ghobakhloo, 2012). According to Nguyen (2009), many businesses adopt new IT merely to keep up with other SMEs which have implemented these technologies. The drivers for IT adoption in SMEs are also attributable to the firms' desire and need to stay competitive and innovative as necessitates for their survival (Ghobakhloo, 2011). Porter (1986) defined competitive advantage as a direct consequence of the strategies implemented by a firm intended for adding value to customers. It has been demonstrated that their competitive pressure will affect the adoption of new technologies when SMEs perceive that these technologies will possibly support their competitive position, therefore, SMEs adopt IT to gain competitive advantage. (Ghobakhloo, 2010), Porter and Muller (1985) argued that the nature of competition

might change through the adoption of IT. They found that IT has changed the rules of competition through changing industrial structure, creating competitive advantage by delivering businesses in new ways to outperform their competitors and spawning new business by making new business technologically feasible, creating demand for products and regenerating old business. IT enhances SME survival rates where they are functioning in a competitive environment with the role of higher rates of failure (Levy, 2001). Jandberg & Vinberg (2000) urgue that for SMEs to survive and grow in the future, it becomes a matter of strategic importance to adopt information technology. When developing a tool to "ease" the workload of the employees, it is also critical to involve these employees to ensure that the strategies as well as the tools are relevant to their occupation to improve productivity (Steyn, 2012).

2.3 Diffusion of Technological Innovation Process

Diffusion is the process by which an innovation is adopted and gains acceptance by members of a certain community over time. (Rodgers, 1993). Diffusion of technology is a continuous rather slow process. It is a cumulative or aggregate result of a series of individual calculations that weigh the incremental benefits of adopting a new technology against the cost of change, often in an environment characterized by uncertainty and by limited information. (Hall &Khan, 2002). Technology is information, and exists only to the degree that people can put it into practice and use it to achieve values, (Eveland, 1986). The four factors that influence the diffusion process include; innovation itself or idea, practice or object that is perceived to be new by an individual or other unit of adoption, how information about innovation is communicated, time and the nature of the social system into which the innovation is being introduced (Rodgers, 1993). There are four main processes in the diffusion of innovation (Rodgers, 1993). These include;

Innovation Decision Process, individual innovativeness, rate of adoption and perceived attributes.

Innovation Decision Process states that diffusion is a process that occurs over time and can be seen as having five distinctive stages, namely; knowledge, persuasion, decision, implementation and confirmation. According to this process potential adopters of an innovation must learn about the innovation, be persuaded as to the merits of the innovation, decides to adopt, then implements the innovation and confirms (reaffirms or rejects) the decision to adopt the innovation. **Individual Innovativeness Process** states that individuals who are predisposed to being innovative will adopt an innovation earliest than those who are less predisposed. The potential adopters are categorized as innovators, who are risk takers and pioneers in adopting an innovation, early adopters, early majority, who adopt the new innovation after proven track record, late majority, who wait until the technology is well tested, fully accepted and affordable and the Laggards, who resist adoption of an innovation until rather late in the diffusion if ever.

The rate of Adoption Process states that the innovations are diffused over time in a pattern that resembles a s-shaped curve (Rodgers, 1993). In modeling diffusion process, when the number of users of a new innovation is plotted versus time, the resulting curve is typically an S-shaped or ogive distribution. The findings by Rodgers (1993) on the rate of adoption process, are consistent with the studies carried by Zvi Griliches (1957) in his seminal study of hybrid corn and Edwin Mansfield (1968) on the diffusion of major innovations in the coal, iron and steel, brewing and railroad industries. According to his findings, the adoption of a new innovation proceeding slowly at first accelerating as it spreads throughout the potential adopters and then slowing down as the relevant population becomes saturated resulting in an S-shaped distribution curve. The rate of adoption theorizes that an innovation goes through a period of show gradual growth

before experiencing a period of relatively dramatic and rapid growth. The theory also states that following the period of rapid growth, the innovation rate of adoption will gradually stabilize and eventually decline as it is demonstrated by the figure below.

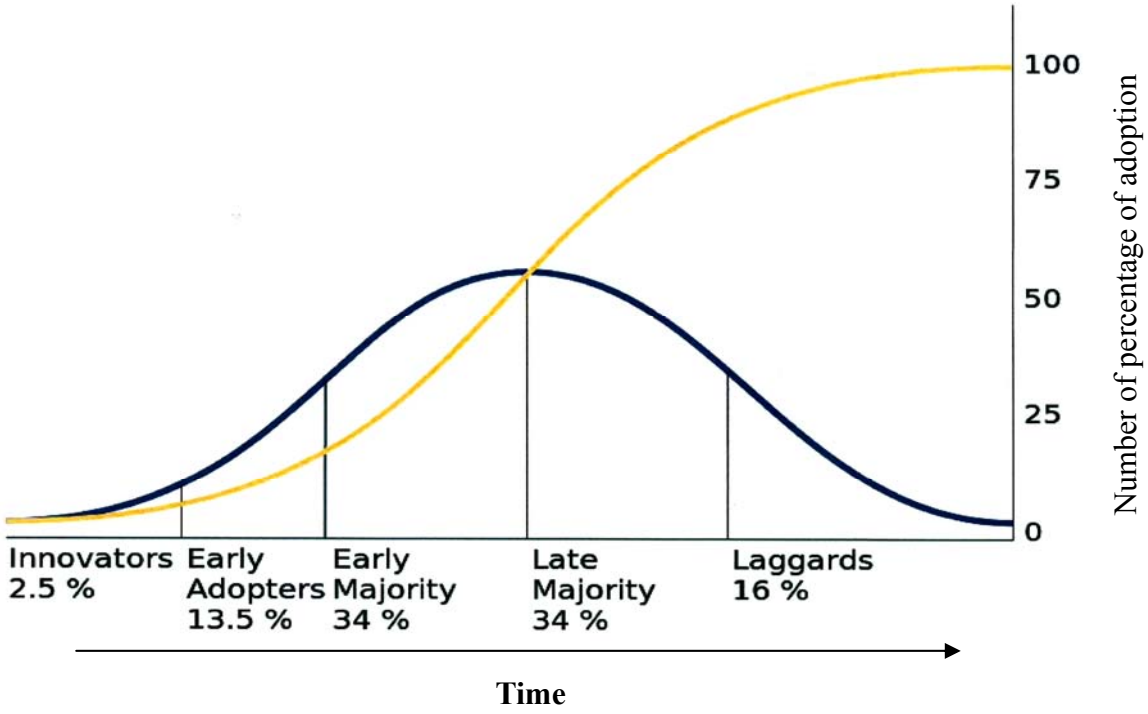


Figure 2. 3: Rate of adoption (Rodgers, 1995)

The Perceived Attributes Process states that the potential adopter judge an innovation based on their perceptions in regard to five attributes of an innovation. These are trial ability, observability, relative advantage, complexity and compatibility. This theory holds that an innovation will experience an increased rate of diffusion if potential adopters perceive that the innovation can be tried on a limited basis before adoption, offers observable results, has an advantage relative to other innovation (or the status quo), is not overly complete and it is compatible with existing practice and values.

In conclusion, it is worth to note that adoption is an individual process detailing the series of stages one undergoes from first hear about a new innovation to finally adopt it. Diffusion signifies group phenomena, which suggests how an innovation spread. (www.http"//en.m.wikipedia.org/wiki/Diffusion_of_innovation <http://www.http>). The contribution of new technological innovation can only be realized when, and if the innovation is widely diffused and adopted. Diffusion itself results from a series of individual decision to adopt the new technological innovation. The decisions to adopt new innovations are often the result of a comparison of the uncertain benefits of the new innovation with the uncertain costs of adjoining it. An understanding of the factors affecting this choice is essential for clothing SMEs managers/owners endeavoring to improve their business productivity and efficiency.

2.4 Entrepreneurship, small and medium business organization and ICT Adoption

2.4.1 Entrepreneurship Concept

The word 'entrepreneur' originates from the French word 'entreprentdre,' which means to "undertake". The Merriam- Webster Dictionary presents the definitions of an 'entrepreneur' as one who organizes, manages, and assumes the risks of a business or enterprise. An entrepreneur is a person who has possession of an enterprise or venture and assumes significant accountability for the inherent risks and the outcome (Saleemi, 2011). The Oxford English Dictionary defines as an entrepreneur as 'a person who attempts to make profit by risk and initiative'. This definition emphasizes that entrepreneurs exercise a high degree of initiative and are willing to take a high degree of risk. An entrepreneur is a person who organizes, manages, risk taker, an undertaker, a venture and also an initiator or innovator or generator of new ideas and business processes (Investopedia).

Entrepreneurship has been the topic of 'intensive inquiry' (Runyan, 2005). It means that different researchers/scholars perceived and hence defined entrepreneurship differently. The conception of the entrepreneurial function chronologically developed as follows; Richard Cantillon (1734) viewed an entrepreneur as non-fixed income earners who pay known costs of production by earning uncertain income; Jean Baptiste Say (1803) defined an entrepreneur as an economic agent who unites all means of production-land, labor, and capital to produce a product or service. He shifts economic resources from an area of lower to an area of higher productivity: Joseph Schumpeter (1934) an entrepreneur as an innovator who change the status quo to set up new products, new services, new markets, new product needs, new forms of organization and new methods of production (installation or adoption of a new technology). He identified innovation as the critical dimension of economic change; David McClelland (1961) - entrepreneur is a person with a high need for achievement, who is energetic and a moderate risk taker; Peter Drunker (1964), an entrepreneur is one who searches for change, responds to it and exploits opportunities. Innovation is a specific tool for an entrepreneur initiates, but do not innovate, he brings technologies innovated by others into another context; Howard H Stevenson (1975), entrepreneur as one in pursuit of opportunity without regard to resources currently controlled; Albert Shapero (1975), Entrepreneur is one who takes initiative, accept risk of failure and have an internal locus of control and Ronald May (2013), defined entrepreneur as someone who commercializes his or her innovation. Entrepreneurship is seen as an activity of generating and adoption of new ideas, technology and business processes (innovation), taking risks and decision making as to earn profits, the function of foreseeing investment and production opportunity undertaking a new venture creating new products new management skills and strong team building abilities.

The three main theories of entrepreneurship include the following: (a) Economic Theory (b) Sociological Theory and (c) Psychological theory. (a) **Economic Theory**. According to Jean Baptiste say (1983), it is the function of the entrepreneur to rationally combine the forces of production into a new producing organization. Cantillon (1734); Say (1833); Schumpeter (1954) regarded entrepreneur as risk-takers who basically invested their own money to make profits economists saw entrepreneur as business ventures creators of enterprises (Ely and Hess, 1893; Oxenfeidt, 1943; Schloss, 1968) entrepreneurs inform the market of new elements (Knight, 1921) they are highly tolerated thus working in conditions of ambiguity and uncertainty (Hoselitz, 1952) coordinates and makes decisions, (Casson, 1982). Entrepreneurs are business organizers and innovators. (Baumol, 1993). (b) **Sociological Theory**: according to sociologists, entrepreneurship is most likely to emerge under a specific social culture. Cultural values and role of expectations are responsible for the emergence of entrepreneurship (Saleem, 2011). Entrepreneurial behavior is a function of surrounding social structure, and readily influenced by manipulable economic and social incentives. Human being are products of their environment and therefore entrepreneurs integrates, assimilate and interpret behaviors in their environment to act and construct their enterprises. (c) **Psychological Theory**: According to the psychologists, entrepreneurship is most likely to emerge when a society has sufficient supply of individual possessing particular psychological characteristics (Saleemi, 2011). Schumpeter (1934) believers that entrepreneurs are motivated by the will to power, will find a private 'kingdom' or will to conquer. According to McCelland (1971), it is the high need for achievement which drives people towards entrepreneurial activities. A number of researchers have that most entrepreneurs create businesses not simply because they want to work for themselves, but as a result of being unable to adjust adequately to their previous working environment (Bannock, 1981; Chell, 1985;

Collins More et al, 1964, 1970; DuToit, 1980; Curran, 1973). Hence entrepreneurship is the outcome of a complex variable combination of social, economic and psychological factors.

An entrepreneur is imaginative; risk taker responds to environmental needs by creating an enterprise, innovative in nature and adopt new methods of production to meet the market demand.

2.4.2 The Entrepreneurship versus Small Business Organisations

Entrepreneurship and small business organizations are considered theoretically distinct. Entrepreneurial ventures differ from the small business organizations in the following ways: (a) Innovation: Entrepreneurs are innovators (Schumpeter, 1934; Lumpkin & Dess, 1996). The innovativeness tendencies are evident in the development of new markets, new products, new business process and adoption of new technologies. (b) The degree of risk taking has been often very high in an entrepreneurial venture, with the incentive of sure profits, while pursuing an idea or an opportunity. Risk may be in the form of social, personal, psychological or strategic risk (Lumpkin & Dess, 1996; Baird & Thomas, 1985; Gasse, 1982; Muller & Friesen, 1982. (c) Pro-activeness is also an aspect of entrepreneurial behavior (Covin & Slevin, 1989; Miller 1983; Lumpkin & Dess 1996)

Small business organizations on the other hand, are (a) extension of personality and meant to further personal goals as well as to generate family income (Carland et al 1984; Jenkins & John 1997). (b) They have an emotional attachment, in that these organizations encompass strong emotional relationship between the business and the business itself, attitudes of the owner are one facet of this emotional attachment (Brush & Chaganti, 1998; Cooper & Artz, 1995). (c) Personal achievement or comfort levels (non-economic goals, motivation) by some business

owners in order to reach personality, 'acceptable' business performance levels (rather than maximizing performance) Cooper, 1993; Filley & Aldof 1978). (d) Speed of wealth creation-while a successful small business can generate several million shillings of profit over a lifetime, entrepreneurial wealth creation often is rapid, e.g. small business owners have less preference for innovation thus exhibited by entrepreneurs (Stewart et al, 1998; Carland et al 1984).

2.4.3 The Types of ICT adopted by SMEs

It is not easy to come across a comprehensive definition of information and communication technology (ICT). This is because the model methods, appliances and applications involved in it are constantly evolving on an almost daily basis (Kwaya, 2009). ICT comprises all the digital devices and techniques used by organizations, and individuals to create, capture, organize, package, store, use, disseminate and disperse information (Kwaya, 2009). Kwaya further adds that when we think of ICT, the following must come to mind: Convergence of technologies, software and appliances used with the technologies, techniques and procedures used with the software and the technology, creativity and rapid change/evolve, reduction in costs of communication, versatility can be used for many different purposes and information management, storage, use, dissemination, disposal.

2.4.4 Small and Medium Enterprises (SMEs) and ICT Adoption

An entrepreneur is a person who has possession of an enterprise or venture and assumes significant accountability for the inherent risks and the outcome (Saleemi, 2011). Jean-Baptiste Say defined an entrepreneur as one who undertakes an enterprise, especially a contractor, acting as inter mediator between capital and labor. According to Joseph Schumpeter, entrepreneurship is a creative ability to do things that are generally not done in the ordinary course of business, that is, an entrepreneur is the one who innovates, creates and foresees the potentially profitable

opportunity and tries to exploit it.

There is no acknowledged definition of small and medium sized enterprise (SME). However, their definitions vary from region to region. For example, OECD (2002) defines SME as an enterprise with less than 500 employees. The South African SME Act defines SME as enterprise having up to 100-200 employees or 5 million rand turnover (Gordon, 2003). In Botswana, the government defines SMEs as a registered firm with less than 100 employees (Briscoe, 1998). In Kenya, the main criteria that determines SMEs definition is the number of employees, turnover and the balance total (Burns, 2001). The African Development Bank defines SMEs as having less than 50 employees. SMEs are independent in ownership and operation, have close control by owners/managers who contribute most capital and principle decision making is done by the owner/manager (ADB, 2001).

Small and Medium sized enterprises (SMESs) are often seen as vital for the growth and innovation of dynamic economics as they help to diversify economies and at the same time create employment (Machacha 2002). Since the SME sector plays a major role in national economies, these benefits to individual SMES collectively translate into productive results in the form of job creation, revenue generation and overall country competitiveness. Government, therefore has an interest in the promotion of access to and use of, ICTs by SMES, (UNDP 2007). SMES are the major source of income, a breeding ground for entrepreneurs and a provider of employment (UNDP 2005). SME are a source of product innovation for the economic growth of a country. As the number of SMEs increases, their knowledge of their product industry increases. Their knowledge allows them to innovate on the product or process, which helps them form a competitive advantage to generate more profit. In addition, the development of SMEs can also

help to achieve other development goals, such as health and education or provide a source of income to disadvantaged people (Kotelnikov, 2007)

Developing countries have the potential to achieve rapid and sustainable economic and social development by building an economy based upon an ICT enabled, and networked SME Sector capable of applying affordable yet effective ICT solutions (UNDP, 2004). In a challenging global society, effective use of ICT is critical for the success of the business especially SMEs. SMEs is very often recognized as an economic growth engine (Briscoe A., 1998). They often occupy strategic positions in the economy whereas large companies lack their flexibility. The SME sector plays a significant role in its contribution to the national economy in terms of wealth created and the number of people employed (Rashid *et al*., 2001). They also serve as seedbeds for medium and large-scale entrepreneurs, contributing to the more balanced socioeconomic development and facilitate the process of adjustment in large enterprises (Mokaya*et al*., 2012), emerging as competent suppliers of products and services previously not available in the market place (Republic of Kenya, 2002). SMEs are the driver of economic growth and innovation; help to achieve development goals, provide good and services in areas critical for development (Kotolnikov, 2007).

ICT plays a very important role because it can help SMEs both create business opportunities and combat pressures from competition. Appropriate ICT can help SMEs cut costs by improving their internal processes, improving their product through faster communication with their customers, and better promoting and distributing their products through online presence. ICT has the potential to improve the core businesses of SMEs in every step of the business process.

ICT helps SMEs to gain bigger markets, enhance ability to compete with larger organizations

(Tan et al, 2009) creates wider market accessibility (Gibbs & Kraemer 2004) enhance efficiency, integrate into the global supply chain, bid for out-sourcing business and increase productivity in the production process (UNDP, 2005); resulting in job creation, revenue generation and overall country competitiveness (Mokeya, 2012). ICT will increasingly empower clothing SMEs to participate in the knowledge economy by facilitating connectivity, helping to create and deliver products and services on a global scale and providing access to new markets and new source of competitive advantage to boost income growth (UNDP, 2007).

Porter (1986) in a chain model summarizes various ways that SMEs can benefit from ICT as follows: (a) **Logistic benefits**: **Inbound Logistics**-cheaper and faster communication with suppliers through supply chain management; **operational manufacturing**, improved inventory management systems, Enterprise Resource Planning Software, Rapid prototyping and manufacturing programs; outbound logistics-easier to link to global supply chain and outsourcing opportunities; **marketing and sales e-commerce**, e-marketing through websites; **after** sale service- Customer Relationship Management Software. (b) **Firm Infrastructure** (Finance planning) better accounting and financial management practices, improved communication between different departments through the intranet; better grasp of business trend and market prices through easier assets to information; use models to enhance business planning capabilities; (c) **Human Resource Management**: E-learning for employees training, (d) **Technology Development**: Better knowledge management with the firm integrates different software platforms through enterprise application integration; (e) **Procurement**- use E-procurement for cheaper and faster communication with suppliers. In Kenya most SMEs are struggling to adopt ICT into their business functions despite proven benefits (Kinyanjui & McCormick, 2002). This study is set to examine the factors affecting the adoption of ICT among

the clothing SMEs in Kenya.

2.5 The ICT Benefit Trends and Barriers

2.5.1 Benefits of Adopting ICT

The benefits highlighted for adoption are enormous. They range from internal (within the firm) to external (locally and globally). As the number of SMEs increases, competition increases, which then results in a decrease in prices, customer base or both. This will in effect erode existing profit, creating less incentive for people to start SMEs. To counter the increasing competition, firms can lower prices, increase promotion of their products, improve their product, add new distribution channels and/or improve their internal processes. Foreign firms in both the import and export markets further add to competitive pressure to improve their product, process, promotion or distribution channels. ICT plays a very important role because it helps SMEs both create business opportunities and combat pressures from competition. Appropriate ICT can help SMEs cut costs by improving their internal processes, improving their products through faster communication with their customers and better promoting and distributing their products through online presence". (Kotelnikov 2007 pg 8) An effective ICT adoption in SMEs enables them to compete effectively in the modern economic environment characterized by strong waves of globalization and hyper-competition that has revolutionized the way of doing business. ICT adoption reduces cost and time of doing business, helps SMEs to communicate faster and cheaper with their clients and suppliers, increase their business productivity and pursue effective inventory controls and improved sales through closer relationships with clients to suppliers and also fast delivery times. ICT use by enterprises varies evidence from both developed and developing countries has shown that effective use of ICTs affects productivity in both large and

small enterprises (UNACTAD 2011).

A firm -level study covering 56 developing countries found that “ICT is playing an important role in allowing businesses to grow faster and become more productive- this alone suggests that creating an appropriate environment to exploit ICT is important (World Bank, 2006). Developing country's enterprise using ICT had better performance compared with enterprises that did not use ICT, with notable improvements in enterprise growth, profitability, investment and productivity. Prior studies have identified many benefits to be attained by SMEs as producers or users of ICT which include closer working relationships among value chain partners, increased productivity, and enhanced efficiency, greater access to market information and knowledge and acquiring information systems. Capabilities to support business, transformation and reaching new clients from other locally, regionally, or globally (Abouzeadon and Busler, 2002, Alam et.al, 2005, Beal 2001, Fu et.al 2001, Kotelnikov 2007, Urdgen et.al 2004, Balocco et.al 2009)

ICT and e-commerce offer benefits for wider range of business processes. At the firm level, ICT and its application can make the management of the firm’s resources more efficient. Seamless transfer of information through shared electronic files and networked computers increases the efficiency of business processes such as documentation, data processing and other back office functions (e.g. organizing incoming orders and preparing invoices. Increasingly sophisticated ICT applications such as KMS (Knowledge Management Systems) and ERP (Enterprise Revenue Planning) allows firms to store share and use their acquired knowledge and know-how. A company-wide electronic data source aims to disseminate employee professional experience, for example, taps for winning a contract from which others in the firm can learn.

At inter firm level, the Internet and e-commerce have great potential for reducing transaction

costs and increasing the speed and reliability of transactions. They can also reduce inefficiency resulting from lack of co-ordination between firms in the value chain. Internet based B2B interaction and real time communication can reduce information asymmetries between buyers and suppliers and build closer relationships among trading partners (Moodley, 2002). In fact adopters of e-commerce tend to reduce transaction costs, increase transactions, speed and reliability, and extract maximum value from transactions in their value chains (OECD, 2002)

ICT enhances SMEs efficiency, reduces costs and broaden market reach, locally and globally, resulting in job creation, revenue creation and overall country competitiveness. However, small enterprises are generally seen as being at a disadvantage to larger businesses. They are characterized by limited availability of resources in terms of time, money and expertise (Wymer and Reagan, 2005). Their inferior technology and management capabilities have often shown to be a constraint on effective use of new technologies (Caldeira and Ward, 2002). ICT offers enormous opportunities to small enterprises. It increasingly empowers SMEs to participate in the knowledge economy by facilitating connectivity, helps to create and deliver products and services on a global scale and provide access to new markets and new sources of competitive advantage to boost income growth (Mokaya, 2012).

2.5.2 The Barriers towards ICT Adoption in SMEs.

Given the benefits that ICT can bring to SMEs, SMEs in most developing countries still have been slow to adopt it. Kotelnikov (2007) reveals that many SMEs within the Asia Pacific Region have yet to reap these benefits evenly. They face major constraints such as poor telecommunications infrastructure, Limited ICT literacy, inability to integrate ICT into business processes, high costs of ICT equipments in complete government regulations for e-commerce, and poor understanding of the dynamics of the knowledge e-economy. Other studies reveal that

technology constraints faced due to lack of e-education and technical skills as well as ignorance on the usefulness of technology, have been determined as main factors attributing to lower rates of technology adoption. (Duan et.al. 2002, FuTantelli and Altegra, 2003; Hashim 2007; Jones et.al, 2003; Khatibi et.al 2003; Kogilah et.al, 2008) Other barriers include government support, expensive initiative, risks, complex procedure, managerial leadership, costs and benefits, security, legal issues, business complexity, human capital deficiency, turnover of technical staff and customer services.

Grandon (2004) asserts that only a small number of studies on ICT adoption focused on SMEs. Moreover, it has been noted that the rate of IT adoption by SMEs remains relatively low (Mac Gregor 2005) as compared to adoption rate in large companies. Failure to adopt ICT leads to high cost of production and hence low profits, business inter-linkage and networking is greatly hampered to the extent that entrepreneurs do not know about new products in the supply chain or even consumer demands resulting in a market mismatch between demand and supply (Mukaya, 2012).

The SMEs face new challenges in managing their business in IT usage, introducing new technology to their company, limited capital for IT investments, limited internal knowledge to manage the process of IT adoption and IT operations, limitation of source of IT investment, especially in technology competence, discrepancy of resources (like human resource, financial, technology), IT knowledge, and competence in organizing knowledge gathering (Muafi, 2012). The failure in solving IT problems influences long term business performance. In developing countries, the success of IT is influenced by organizational readiness and readiness of external environment in IT usage. (Molla, 2004).

SMEs operate in an environment characterized by fragmented and incomplete information where awareness of market, technology policy regulations and finance is limited. This affects entrepreneurial activity since the absence of the information impinges the scope of discovery and exploration of profitable opportunities (Mokaya, 2012). Other inhibiting impediments are infrastructural (technological), economic, legal, social and cultural and external environmental barriers (Kapurubondera, 2006).

2.6 The Nature of Clothing and Textile Industry in Kenya

2.6.1 Evolution of the Clothing and Textile Industry in Kenya

The Kenyan clothing and textile industry began during the colonial period (Kinyanjui, Liugulu, McCormick, 2004). As early as 1954, the industry had a total of 74 enterprises employing 2477 workers (Kinyanjui, 1999). At independence, the government inherited well - established clothing and textile sector, which extended under the Import Substitution Scheme (ISS) whereby imported clothing and fabric were taxed heavily to enable the local industry flourish (Gouhgllin and Ikiara, 1991). The industry also flourished because of government investment in the industry. The government through its parastatal Industrial and Commercial Development Corporation (ICDC) invested heavily in this industry. Government - owned garment and textile industries were located in towns like Nairobi, Nakuru and Mombasa. The government has significant shares in textile firms such as Kicomi (Kisumu cotton mills) Rivatex (Eldoret) Kenya textile mills (Thika) and Mountex (Nanyuki). Privately owned garment firms evolved and thrived in the import Substitution era, examples of these are Yuken, Thika cloth Mills, United textile Mills, Sunflag, Spinners and Spinner and Raymond. The majority of the privately owned firms was owned by the Kenyans of Asian origin because the technical expertise came from India (Maiyo and Ime).

In 1984, there was a change of policy from Import Substitution Scheme (ISS) to export led industrialization as contained in the national development plan of 1984-88: the clothing and textile sector benefited from the protectionist policies that lasted until the mid - 1980's. However, these industries failed to create strong vertical and horizontal linkages with other sectors which left them vulnerable when the protectionist policies were abandoned (Sharply and Lewis 1998, McCormick, 1999). With liberalization of the market in 1990's, the clothing industry was affected by the surge of imports of both new and used clothing which were low priced and considered of higher quality than local clothing, hence preferred (Ongile and McCormick 1996). Low sales and financial difficulties experienced by the local producers led to closure of textile firms such as Kicomi, Allied Industries limited and Heritage Ollen Mills.

The garment industry also faced and still faces competition from a new form of trade in second hand clothes, hence led to major players in this industry closing down (McCormick et al 2001). The liberalization of the Kenyan economy led to an influx of massive cheap textile products into the country, resulting in the closure of many local textile industries. The shift from an inward to an outward oriented development strategy in Kenya has been accomplished by schemes such as manufacturing under bond (MUB) export processing zone (EPZ) and export compensation scheme. Kenya started implementing the EPZ program in 1990. The country's EPZ program is covered under the export processing zone act. (Chapter 517, laws of Kenya). The objective of the program is to promote exports, foreign exchange earnings, transfer of technology skills and employment creation and enhancement of industrialization (Republic of Kenya 2004). The change of policy from Import Substitution Scheme (ISS) (protectionist policy) to Export Led Industrialization (liberalized market policy) left the clothing industry in Kenya vulnerable to stiff internal and external competition. Adoption of the new technology was the only way to survive

in this new dispensation in the domestic and global market.

2.6.2 The Types of Clothing Enterprises in Kenya

The clothing industry in Kenya is diverse in terms of size, ownership, and technology and market orientation. (Kamau & Munandi 2009). Large firms employ more than 100 employees , medium - sized firms employ between 51 and 100 employees, and small firm's employees between one and 50 employees. (Kinyanjui & McCormick 2002). Firms producing for international markets are mainly medium and large - sized, while those producing for the domestic market are mainly small firms. Large and smaller firms differ in the types of technology that they use. Large firms tend to engage in mass production and utilize industrial machines, while small enterprises tend to use manual or electric powered machines (Kinyanjui and McCormick 2002).

The clothing industry consists of micro, small, medium, large and very large firms. Which form a pyramidical structure with three tiers (Kamau and Munandi 2009).

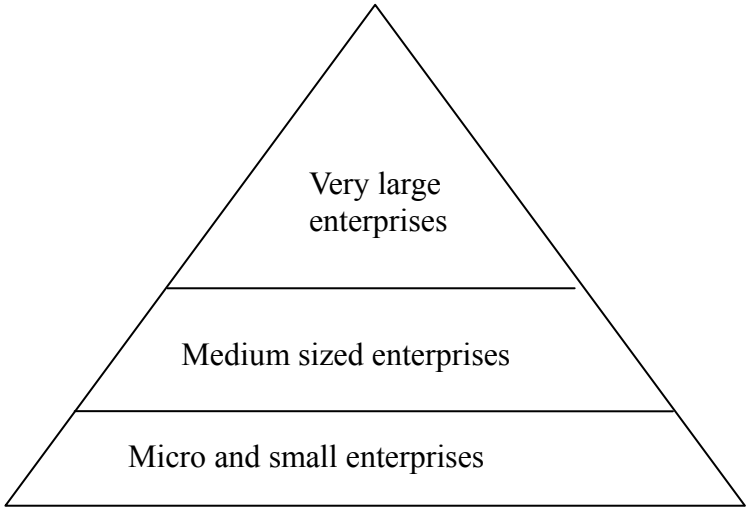


Figure 2. 4: Types of Clothing Industries in Kenya (Kamau and Munandi , 2009)

Kamau and Munandi (2009) explain three forms of enterprises as follows: The base of the pyramid is occupied by the micro and small enterprises (SMEs) that produce mainly for the

domestic market. These enterprises are spread throughout the country representing about 15 percent of all SMEs and over one - third of the manufacturing SMEs in Kenya (McCormick et al 2007). The SME of this type are owned by people of African origin, a vast majority of whom are women. Firms in this tier are classified into three types; custom tailors, contract workshops and mini manufacturers. The next tier consists of medium to fairly large firms that produce mainly for the domestic market, with some producing for the export market within the African region and the European Union. . The third tier consists of the large to very large export firms. These firms mainly established in response to the U.S - African growth and opportunity act (AGOA) mostly operate as export processing zones or as manufacturing - under - bond (MUB), factories (Phelps et al 2008; McCormick et al 2007). The number of firms in this tier was estimated to be 45 but by 2008, this number declined to 19 firms in the EPZ. Among the local firm's innovation is by way of copying and modifying known designs from China, India and Srilanka. Use of ICT, involvement in the design, production of training facilities, marketing and organizational management in the garment industry remain rudimentary.

2.6.3 Assessment of ICT Adoption Levels in the Kenyans Clothing Industry SMEs

The globalization process has been paralleled by important changes in the organization of the clothing commodity chain. While the initial phase of globalization was dominated by manufacturing capital in the advanced economies, it was from the early 1970's replaced by retail capital (Banacich et al 1994; Kaplinsky, 2005). This process was facilitated by the requirements of low investment and technology in the industry (Vijayabasker, 2002). As a result manufactures did not produce the entire output in - house. They sourced a substantial portion of their output through contract manufacturing whereby they contracted production to small producers, many of them located overseas. This was mainly driven by the need to keep costs of labor in the

production minimum. It is the reason that the clothing industry is classified as highly globalized (Kamau and Munandi 2009). Since traders could not undertake the same processes of outsourcing as well, Wholesaler and retailers sought to bypass the manufacturers and began to source directly from overseas manufacturers (Vijayabasker 2002; Kaplinsky 2005).

The sourcing of garments from overseas became more profitable and also was facilitated by improved transport systems and communication technology. Technological innovations have enabled capital to facilitate coordination of production in distant locations to take advantage of lower factor costs that prevail in this area without much increase in transaction cost (Kamau and Munandi 2009). Although a diversity of technology is used in Kenya's clothing industry, little documentation has been given and therefore, it is difficult to identify the level of technology of technical requirement in the industry (ILO; 2000). In today's competitive environment, firms must pay attention to the ways in which they initiate, nurture and leverage their innovative efforts. Innovation is widely viewed as a way to deal with global competition (Kamau and Munandi, 2009). Despite the fact that ICT is regarded as an important tool for dealing with strong waves of globalization and liberalization and their effects on the clothing industry in Kenya, the prior studies do not adequately address the issue of the nature and extent of its adoption in these businesses.

2.7 Factors Influencing Adoption of ICT by SMEs

Prior studies identified a number of factors influencing ICT adoption among the SMEs (Duan, et al 2002; Fulantelli & Allegra, 2003; Hashim, 2007; Kogilel et al, 2008). However, this review focused on three main factors that prominently presented both constraints and opportunities for technological innovations. These aspects of the enterprise are identified as technological factors,

organizational factors and environmental factors.

2.7.1 Technological Factors and ICT adoption

Prior literature identifies consistently technological resources as critical factors for effective ICT adoption (Kuan & Chal, 2001; Gonc. V 1999; Rodgers, 2003). PremKumar (2003) argues that there are very few studies that have examined the impact of technological characteristics in the context of manufacturing businesses. According to PreKumar (2003) ICT infrastructure (hardware, software, and related network) is an important determinant of ICT adoption.

Rapid and revolutionary changes in technology have created an increasing information centric global economy, where knowledge has become a key factor in competitiveness (Arata 2012). The challenge for many firms today how to adopt an IT system that can withstand these rapid and revolutionary changes (Rodgers, 2003). Rapid and sudden technological changes make it difficult for organizations to predict how such new technologies would operate.

The technological factors that influence the ICT adoption relates to the perception of the complexity of ICT, lack of ICT knowledge within the SME, technology availability, technology characteristics, flexibility, understandability of technology, accessibility, relevancy, viability, size, friendliness and the stereotype that ICT is too difficult and complex is seen as a reason not to adopt it. The lack of professional support available from ICT vendors to SMEs is another factor. ICT vendors tend to target larger companies as they have a larger budget and are typically more willing to pay for advanced ICT. This leads to a market with ICT products which are often not geared for SME. Other factors include technological readiness as reflected by financial and employees' readiness, technological cost-benefit and technology- task fit (Venketesh, et. al, 2012).

The technological or innovation factors include issues such as the relative advantages of the innovation, the complexity, compatibility, cost and the image surrounding the innovation (Allan et al., 2003). Personal innovativeness in IT (PIIT) has been revealed to be a reliable predictor of user's attitude about the simplicity of use and effectiveness of new technologies. Agarwal and Prasad (1998) discuss that PIIT is a major determinant of IT acceptance by moderating in perceived usefulness (PU) compatibility and perceived ease of use (PEOU). Thatcher and Perrow (2002), demonstrated that highly innovative individual with higher levels of PIIT are more likely to work for stimulating experiences, as well as having more confidence in their competence to use IT. On the other hand, individuals possessing lower levels of PIIT are more likely to present computer anxiety, and they might have less tolerance for risk (Ghobakloo, 2012).

Strategically, I.T tools are adopted within SMEs in order to achieve predetermined business strategy (Ghobakhloo, 2012). Therefore, SMEs' investments in IT are strongly affected by their strategic context, such as cost reduction, versus value added strategies (Levy et. al, 2001). SMEs is smaller in size, the owner/manager of the SME makes all strategic decisions. SMEs managers have to choose the most appropriate and cost effective option.

This study used five technological variables (elements) to measure how the technological factors influence ICT adoption by clothing SMEs in Nairobi County (Kenya). These include (i) technological availability, (ii) technology complexity (iii) technological compatibility (iv) technological accessibility, (v) technological characteristics

Technological availability. The availability of ICT in a business is measured in terms of ICT components that businesses are presently using (Sirirak & Islam 2010). ICT is often categorized into two broad types of products, namely: traditional computer- based technologies (personal

computers) and digital communication technologies (which allow people and organizations to communicate and share information digitally) (Chem, 2004). Kotelnikov (2007) explicitly explains a range of ICT categories available to SMEs to adopt into their business. They include; Basic communication which is the minimum ICT capability that any business should have, for example, having basic communications with the fixed line or mobile phone, whichever is not economically or most convenient for their business. This allows the SMEs to communicate with the suppliers and customers without having to pay a personal visit. Then there is basic information technology characterized by personal Computers accommodating word processing functionality, accounting and other business practices. Thirdly, there is advanced communication- technologies, providing the means for people to communicate and network with one another. With the internet, SMEs are able to use more advanced communications capabilities such as email, file sharing, creating websites and e-commerce. Finally Kotelnikov talks of advanced information technology which includes more complex IT tools such as ERP (Enterprise Resource Planning) software or inventory management software. Enterprise Systems (ES) consolidates a range of business applications for an organization; care of business processes (Shanks et. al. 2003; McAfee, 2006). SMEs may adopt the tools progressively or jump immediately to advanced ICT capabilities. The figure below (2.4) explains the progression of ICT adoption.

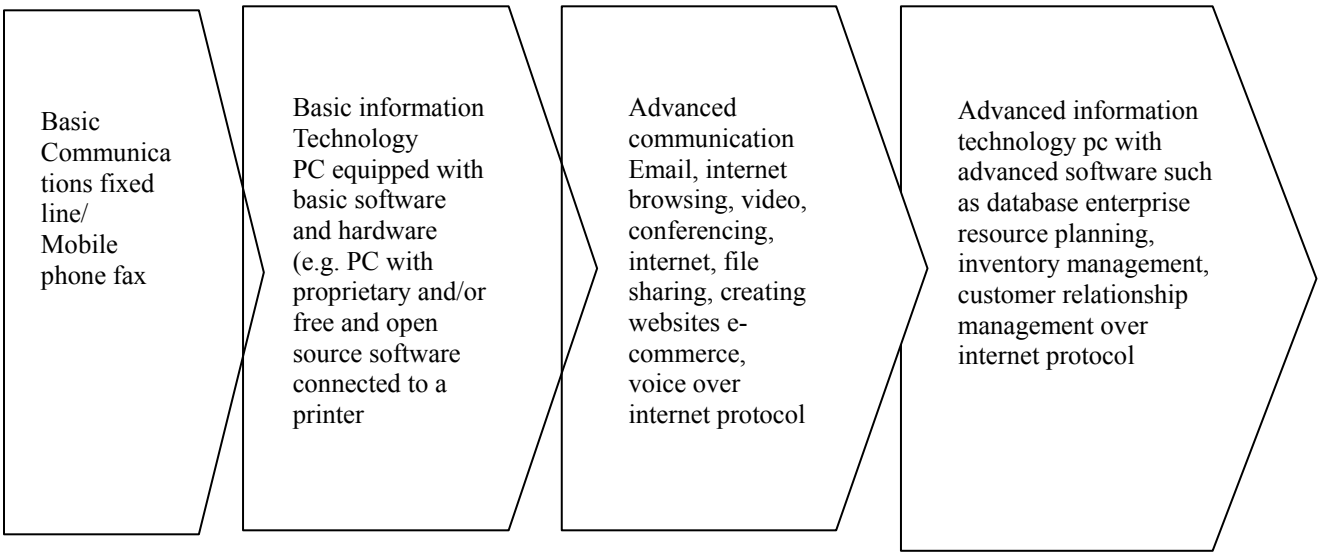


Figure 2. 5: Procession of ICT Adoption (Koteinikov 2007)

Kotelnikov further explains that an SME may decide which type of ICT products to adopt based on the concrete benefits they can bring to its core business, the ICT capacity of its employees, and the financial resources available.

Technological accessibility: whether the managers/owners of businesses and their customers ICT users want products, services and system to be accessible. Accessibility is a set of properties that are built into product, service, system from the outset, enabling people within the widest range of abilities and circumstances as is commercially practical to access and use ICT effectively. The ICT accessibility is a combination of the accessibility of its components: hardware, software and their applications, i.e. how the user operates input devices, navigates the components, selects functions for subsequent interactions and activates hardware and software controls (Thoren 1998). Accessible ICT recognizes the flexibility of technologies to appropriate functionality necessary meeting user needs and preferences. Accessible ICT with reasonable accommodation empowers and serve as a catalyst and instrument for re-engineering enterprise processes (Manila

Declaration 2003). Accessible principle is that each user is able to interact with the technology in ways that work best for him or her. Accessible technology is either directly accessible- in other words, it is usable without assistive technology, or with standard assistive technology. The more ICT is accessible to the user, the higher it is adopted and vice versa.

Promoting access to ICT enhance clothing productivity. Clement and Shade (2000) provide a framework for understanding access to ICT infrastructure, appliances and services. Access to ICT infrastructure consists of physical technology carriage facilities consisting of installed network capacity, network connectivity and interoperability standards. Access to ICT appliance means access to ICT hardware devices and the software tools on their devices, with its two fold (hardware and software) nature, access to ICT appliance links the supply of ICT infrastructure with the provision of services targeted as and users. Access to ICT services consists of ready fulfilling user roles, the ready availability of network access and appropriate support services through commercial venders the availability of formal and informal learning facility for developing network literacy; the ready availability of channels through which individual users can participate in decisions about telecommunication services, their social inclusiveness and the public accountability of their provision. In consideration interventions to improve access to ICTs. The clothing SMEs, owners /managers must consider the complex with access to ICT infrastructure, appliances and services.

Technological complexity: Complexity is the degree to which an innovation is perceived as relatively difficult to understand or use. New ideas that are simple to understand by members of a social system are adopted more rapidly them innovations that require the adopter new skills and understanding complexity increases rejection rate. It is the technology, ease of use or learning

(Rodgers 2003). According to MacGregory et al (1996) small business tends to avoid ICT into their business if it is seen as complex to use. SMEs always lack skills amongst the workforce to use ICT (Spectrum 1997). Paul and Pascal (2003) study reveal that the ICT adoption in SMEs depends on the manager/owner being the ICT decision maker. Reynold (1994) found that small business owner/manager is unlikely to adopt more sophisticated technologies if they are not familiar with the basic ones. This is because of the limited number of employees with a lack of technical knowledge (Alan 2009). This lack of knowledge based employees might hinder technology adoption if the owner believes that this knowledge, technology can be employed using specialist staff (Reynolds 1994). The lack of suitable technical and managerial staff with sufficient ICT expertise is another barrier for SMEs adoption of ICT. Allison (1995) agrees that a skilled and knowledgeable work force was closely linked with successful implementation of technology (Cragg and King 1993) found that lack of information system knowledge was one of the strongest inhibiting factors for SMEs to implement information technology. New ideas that are simpler to understand by the clothing SMEs, owners/ managers are adopting more rapidly than innovations that require the adopter to develop new skills and understating. A low level of complexity are high level of ease to use or understandability of technology leads to higher adoption rates by business owners.

Technological compatibility: Mirchandani & MOtwani (2001) investigated the factors that differentiate adopters from non-adopters of e-commerce in in small businesses and found that factors such as compatibility, perceived usefulness external pressure, perceived ease of use and organizational readiness were found to be significant determinants of e-commerce adoption. Compatibility between e-commerce and the firm's culture, values and preferred work practices as well as consistency with the existing technology infrastructure turned out to be the most

influential factors as perceived by top factors as perceived by top managers (Grandon & Pearson, 2002).

According to Rodgers (2003) compatibility is the extent technology is consistent with several practices and norms among its users. It is the extent to which adopters perceive the implementation of new innovations. New innovation should not cross one's values or belief systems. If it is consistent with social values and beliefs, it will not be adopted as rapidly as an innovation that is compatible. Compatibility is the extent to which the clothing SMEs perception of implementation of new technologies is consistent with their existing values, beliefs past experiences and needs. If an innovation is incompatible with a business owner/ manager's social values and beliefs, is will not be adopted as rapidly as an innovation that is compatible (Rodgers 2003).

Technology characteristics: Diffusion theory posits five characteristics of technological innovations that affect their diffusion, relative advantages (the extent to which a technology offers improvements over current available tools), compatibility (its consistency with social practices and norms among its users), complexity (its ease of use or learning), trialability (the opportunity to try an innovation before committing to use it. It provides customers with the ability to evaluate innovation benefits and overcome fears of the unknown) and observability (the extent to which the technology is output and its gains are clear to see). (Rodgers 2003).
Relative advantage is the degree to which the innovation is perceived as better that the idea it supersedes. In terms of productive, efficient, cost less, or improve in some manner upon existing practices.

The process of ICT adoption within clothing, SMEs depends on the characteristics of the

marketed information systems or information technology systems themselves. These consist of several factors which include: types, process compatibility, user friendliness and popularity of implementing ICT system. Quality of software available in the market and the costs of the ICT system (Premkumar, 2003, Foong 1999, Caldeira & Ward 2003). The technological characteristics of the ICT products in the market are significant determinants for the ICT adoption in an organization (McGregory 2006). For adoption enterprise application software to take place the application available must consider the following, easy-to-understand, quality of information technology, products must be readily available in market, compatible with the existing technological infrastructure, culture, values, and preferred work practices of an organization (Beatty, et al) less time used in understanding and implementing, cost of the hardware and software purchasing, implementation of the system, indirect costs of implementation like human factor costs, organizational costs for transforming from former systems to new work practices, costs associated with any system changes of systems and business procedures (Hochstrasser & Griffiths, 1991), cost of installation and configuration, software licensing costs, costs of training and motivating staff, cost of procedures and organizational structures, management time and effort, productivity losses and costs of maintenance and development; all these costs must not outweigh the amount of perceived benefits reaped from adoption of the new informed technology products.

2.7.2 Organizational Factors and ICT adoption

Organizational factors relate to behavioral culture, organization behavior communicator change, planning, HR skills, HR competence, attitude, readiness, innovativeness and managerial structure of the organization. Ramsay et al (2004) asserts that it is well recognized that for SMEs to get the full benefit of the Internet and EB (Electronic Business), company and market structures may

have to be re-invented. For fear of job loss (Love et al., 2001) and reluctant to change the work practices, (Drew 2003; Love et.al 2001), SME workers and owners are therefore reluctant to bring their business through a learning curve that may prove to be difficult, disruptive and costly. Competitive advantage is gained by use of ICT. Previous studies reveal that top management, support, firm size, skills and knowledge and organization policy are factors that influence firm's willingness to adopt ICT (PreKumar, 2003; Jeyarg, et al, 2006). Top management can stimulate change by communicating and reinforcing values through an articulated vision for the organization (Thong, 1999). Top management support is critical for creating a supportive climate for the adoption of new technologies (Prekumar, 1999; Grove, 1993). Budgetary allocation is defined as the availability of the needed budgets for adoption of technology (Lacovou et al 1995). Budgetary allocation expresses an organization's capital available for ICT investment (Chwelos et al, 2001). It is argued that larger firms are more likely to adopt ICT than smaller firms.

Previous studies on ICT adoption by SMEs have revealed a number of organizational characteristics as potential determinants of the adoption process which includes SME strategies, business size, type of industry, information intensity, organizational culture and technological maturity (Caldeira et. al. 2003; Drew et al., 2003; Mole et Al. 2004; Andries et. al. 2006; Levy et. al 2005). Other factors include formal and informal linking structure, communication process, and quality of existing information systems, level of specialization of the firm as well as the level support of adoption originating from management. Business size definable by turnover and/or number of employees is important due to the role as the source of the firm's capabilities and the firm's resources including financial and human capital (Premkumar et.al, 1991; Thong et.al 1995; Mole et. al. 2004; Thong et. al 1995). Thong and Yep's (Thong et. al. 1995) survey points

out that business size is an important discriminator between adopters and non-adopters of ICT within the Singaporean small business.

Porter and Miller (1985) suggest that the importance and the role of IT in various industry sectors are different due to type and information intensity. SMEs must assess their IT maturity to determine their IT readiness and whether the available IT tools could be satisfactorily implemented in the current organizational and environmental conditions (Sarossa et. al 2003). Organizational change: business growth forces SMEs to adopt novel and more effective technological solutions (Bruque et. al, 2007), Organizational culture: for SMEs, culture can be regarded as the way of doing and sharing things for individuals through compliance with the firm's beliefs, values and attributes (Nguyen, 2009).

Stewart, et al (2000), suggested that characterizing the organizational culture is necessitated since the culture and its various impacts are the key to the success of IT projects that are an integral part of significant organizational change. Organizational culture provides supportive climate and flexible structures for adoption of new technologies in organizations. Culture is highly affected by owner/manager attitude, perceptions and characteristics (Nguyen, 2009). Top management, support is especially crucial for ICT adoption by SMEs. Management should have a strong commitment to use the system for achieving business aims (Shanks et. al. 2003). A clear vision throughout the life cycle that outlines proposed strategic and tangible benefits, resources, cost, risk.

This study used five organizational elements (variables) to measure the influence of organizational factors on ICT adoption, among the clothing SMEs in Nairobi County Kenyan. These variables are (i) management structure/ top management (ii) organization's strategies (iii)

scope of readiness ((iv) organization culture (v) competency.

Management structure/top management. The owner/manager of the SMEs makes all decisions, therefore the adoption of ICT by SMEs depends on the owners ICT skills, personality and attitude toward technology. Competent management skills are a prerequisite for the success of SMEs (OECD, 2002). Management competence (for know-how, capacity, abilities and skills) determines the business success. ICT skills enable the entrepreneur the optimal use of technological innovations, including the computer applications which give businesses strategic advantage as well as everyday business operations. Baard & Berg, 2004). The more positive the perception of managers towards new technologies, the quickly the innovation is adopted.

Prior literature suggests that manager's/own demographic characteristics and personality traits of openness and extraversim are the significant determinants of ICT usage behavior and performance within the business (Prekumar 2003; Ghobakhiloo et al 2012). Several factors, including management's perception of and attitude on IT support and commitment, ICT knowledge and behavioral control over ICT, desire for growth and familiarity with administration directly affect the process of ICT adoption in SMEs (Prekumar 2003, Qureshi &York 2008).

Organization strategies. ICT is adopted by SMEs in order to achieve predetermined business strategy (Ghobakhiloo 2012). The strategic context includes cost reduction versus value adding (Levy et al 2001). Subramanian & Nosek (2001) identified factors that created the strategic value of adopting ICT as operational support, managerial productivity and strategic decision aid. There has been an emphasis on the strategic logic in the decision to adopt ICT (Blili & Raymond 1993; Daniel et al, 2002; Koutha & Choon 2001). According to Nguyen (2009) many businesses adopt

new technological innovations merely to keep up with other SMEs which have implemented these technologies, under such circumstances, lack of definition or strategy of the purposes of ICT adoption will lead to project failure (Ghobakhloo et al 2012).

Scope of readiness to adopt. Technology readiness (TR) refers to 'people's propensity to embrace and use new technologies to accomplish goals in home life and at work (Parasuraman 2000). Preparation and the willingness to use ICT is a critical determinant of effective ICT usage. (Dutta and Mia 2010). Clothing SMEs that are more ready and show a greater interest towards ICT advances will be likely to use it more effectively and extensively.

According to Tan and Felix (2010) the three key determinants for organizational readiness for technological innovations are cost, competence and culture. Perceived financial cost consists of the financial resources required for ICT implementation. Management must be fully committed with its own involvement and have a willingness to allocate critical resources for ICT implementation and give the appropriate amount of time to get the job done. Perceived technical competence capture the technical skills of the stakeholders, ICT literacy of clothing SMEs, owners and workers enhanced and ICT technical team for designing and implementing ICT developed by the organization through ensuring availability of key resources as a way of preparing and being ready to adopt new technologies. Perceived organizational culture captures the structure of the SMEs. In the light of organizational readiness to adopt new technologies, organizational culture, having a more supportive climate and flexible structures might be more advantageous to successful adoption of the new technologies than less flexible and mechanistic culture (Ghobakhloo 2012).

Organizational culture. Organizational culture is a significant determinant of ICT implementation among the SMEs (Bruque & Moyano, 2007; Kanungo, 1998; Cooper, 1994; Riolli & Savicki, 2003). Organizational culture among the SMEs can be regarded as the way of doing and sharing things for individuals through compliance with firm beliefs, values, and attributes (Nguyen, 2009). Stewart, 2000 suggested that characterizing the organizational culture is necessitated since the culture and its impacts are the key to success of ICT projects that are in integral part of significant organizational change. A positive/open organization culture provides more supportive climate and flexible structures necessary for facilitating successful deployment of new technologies in organizations. The constructs of organizational culture, including perceived norms, values, and attitudes predominant in organizations affects the behavior and/or attitude of stakeholders towards ICT in these business organizations (Carmeli et al, 2008). SMEs possessing an adoptable, positive, open and flexible organizational culture are more inclined and prepared to adopt the new technologies with perceived project success in their businesses (Nguyen, 2009, Riolli & Savicki, 2003, Arroyo, et al, 2007).

Human Resource Competency. Durkin & McGowan (2001) argued that in order to develop business performance efficiency in the SMEs, this depends on the degree to which competencies such as vision, technical ability and control can be developed. The owner/manager must possess innovative, opportunity focused characteristics and be open to change. Crime (2007) found that CEO's innovativeness was the only determinant of external-email adoption. CEO's involvement was found to be the only determinant of intranet adoption in New Zealand (Bayo-Moriones & Lera-Lopez 2007) have highlighted the need to study the importance of establishment size, multinational ownership and a highly skilled workforce in ICT adoption. Quality control system and team-based organization of work was also found to play a significant role in the diffusion of

certain elements of ICT within firms; where organizational and managerial factors seem to integrate due to the high focus of control exerted by the key decision maker (Boone et al 2002).

2.7.3 Environmental Factors and ICT adoption

Review and Brindley (2005) contend that the slow ICT adoption in SME is the result of more social and organizational issues than technical or operational. The environmental context issues include the size and structure of the industry, the organization's competitors, the micro economic context and the regulatory environment, government policies (Tornaztky & Fleisher, 1996). Social factors include beliefs, values, social needs, social resources and social ethics.

Environmental factors impacting adoption include the pressure from competition and within the supply chain, public policy as well as the role of government (Allan et al., 2003). For many firms, pressure to keep up with the competition, providing a means to enhance survival and/or growth, managing change, promoting services to customers and staying competitive and/or enhancing innovation abilities have forced SMEs to adopt IT (Premkumar, 2003; Premkumar et. al 1999; Drew 2003; mole et. al 2004; Riemenschneider et. al,2003; Nguyen, 2009). Prior literature suggests that as small businesses are susceptible to customer pressure; these firms adopted IT as a result of demand from customers to develop the efficiency of their inter-organizational dealings (Levy et. al, 2002).

Supplier support/commitment, government policy and regulations, competitive pressure and external ICT support are considered to be factors that influence firms' willingness adopt ICT. Firms faced with stiff competition to pricing, market size and market leadership are likely to turn to the adoption of new technology as a way of achieving a competitive edge in terms of price leadership, efficiency, market scope and flexibility in business processes (Goode & Stevens,

2002). Hence the competitive pressure has identified as one of the best predictors of the original adoption of technological innovations (Jeyarag, 2006; Gatignon & Robert 1989).

External ICT support refers to the availability of support for implementing and using technological innovations (PreKumar, 2003; Delone 1988). The external ICT support is critically useful factor in determining the adoption success. With the popularity of outsourcing and growth in third party support, firms are more willing to adopt new technological innovations if they feel there is adequate vendor or third party support it. (PreKumar & Roberts, 1999).

A firm decision to adopt ICT may also be influence of how its trading partners along the value chain adopt technological innovations, since for an electronic trade to take place, it is necessary that all trading partners adopt compatible electronic trading systems and provide internet-enabled services for each other. (Arasa & Achuora, 2012). Furthermore, ICT may be more appropriate when there is a fight integration with suppliers' systems, which goes beyond the walls of an individual organization (Zhu& Kraemer, 2002). Government policy and regulations are also major determinants of ICT adoption through subsidies and trading policies (Zhu& Kraemer, 2002). ICT adoption is an indispensable strategy for firm to deal with competition. Others suggest that the main driving forces to move toward ICT tools adoption in SMEs are internal factors, including industry changes and trends, maintaining current market, finding new markets, opportunities for growth and the necessity to keep up with the competition (Drew, 2003, Southern et. al 2000) and for staying in completion and survival (Ghobakloo et. al. 2011). Competitive pressure will affect the adoption of new technologies when SMEs perceives that these technologies will possibly support their competitive position, therefore, SMEs adopt IT to gain competitive advantage (Ghobakhloo et. al. 2011).

A 2007 review of barriers presenting SMEs in Asia-Pacific from capitalizing on ICT development identified a number of factors which are also relevant in other parts of the developing world (UNDP, 2007). Limited availability of reliable internet and broadband connectivity at competitive prices is an environmental factor. For rural enterprises in low-income countries, a lack of other kinds of infrastructure (mobile networks, electricity) may hamper uptake. Intense competition and low profit bargains make SMEs reluctant to allocate the necessary costs of maintaining and upgrading IT systems (UNDP- APDP- e- primer 2003). Weak privacy and legal protection for electronic transactions was an issue in many developing countries. Moreover, the special needs of SMEs seldom feature in regulatory systems addressing security, privacy and consumer protection.

Government can create an environment for greater ICT uptake, by liberalizing markets to expand and improve network infrastructure, providing a supportive legal regulatory environment for electronic transactions, and taking steps to enhance technological diffusion (UNCTAD 2009a). They can also seek to overcome market features by creating demand aggression and by supporting the development of ICT skills (Qianget al, 2006; UNCTAD 2009a). Also development of better data as many countries lack up-to-date information on the nature of ICT use among their enterprises, hampering their ability to formulate and monitor policies and strategies in this area.

This study used four environmental elements (variables) to measure the influence of the environmental factors on ICT adoption among the clothing SMEs in Nairobi County Kenya. These ones include (i) government regulations and policies, (ii) industry/market structure (iii) economic conditions/competitive pressure (iv) social factors.

Government regulations. Prior literature identifies significant relationships between government support and ICT adoption. Government initiatives and policies could directly and/or indirectly stimulate the development of ICT infrastructure and information provision to energize factors of diffusion (Ghobakhloo et al, 2011).

According to Han (1991) the role of government has been identified as a very important component in technology adoption. Government policies about tax and tariff subsidies, other rules, regulations, restrictions, incentives and support with regards to a particular technology play an important part in adoption or rejection of any technology. Government policies influence clothing SMEs activities including ICT decision, management and usage. The Kenyan government has made some efforts to manage and promote the use of ICT by maintaining rules or laws influencing the use and providing security using ICT established standards. For ICT software and promotion, ICT evaluation design (Kenya Session Paper No. 2, 2005, CK 2015).

Industry / market structure and ICT adoption. The industry structure in this study primarily focuses on the external linkages between the customers and the business owners and the regulatory bodies associated with the industry. According to Poom (2002), customer pressure in influential and lack of customer use is an inhibitor towards ICT adoption. Business owners/managers need to communicate effectively maintain strong relationships with suppliers and customers and design a competitive business structure (Standing et al 2007. Appropriate use of ICT enables clothing SMEs to communicate faster and effectively with their customers, better promotion and distribution of their products (Kotelnikov, 2007) enhance closer relation with customers and suppliers, better business inter-linkages and networking and connection to global supply chain.

Economic conditions and ICT adoptions and competitive pressure. SMEs is driven by the needs of their clients (Levy & Powell 2005; Poon & Swatman 1996 and Parker 1997) found that SMEs was forced to use ICT by large companies.

For many firms, pressure to keep up with the market competition, providing a means to enhance survival and growth, managing change, promoting services to customers and staying competitive and/or enhancing innovation abilities have forced them to adopt new technologies (Premkumar 2003; Premkumar 1999). Small businesses are susceptible to customer pressure to develop the efficiency of inter-organizational dealing with industry changes and trends maintain current market, finding new market opportunity for growth and the necessity to keep up with competition adoption of ICT tools becomes an indispensable strategy for SMEs in handling these dynamic economic conditions.

***The Impact of Social factors on Technology Adoption*.** Many researchers have emphasized on the importance of social factors in the deployment of technology. Godwin and Guimaraes (1994) for example, say that three factors are to be considered to see social involvement in technology advances, that is; - social need, to feel a strong desire for something, social resources- the capital, material and skilled personnel vital for innovation and adoption of new things and sympathetic Social ethos - an environment in which the dominant groups are prepared to consider innovation seriously and are receptive to new ideas. According to Godwin and Guimarades (1994), in default of any of the above factors, it is unlikely that a technological innovation is widely adopted and is successful. Androgen et al (2000) has conducted a research in entrepreneurship and identified social factors as the basic factors affecting IT usage.

The term ‘social influence’ refers to the extent to which members of reference group influence one another behavior and experience social pressure to perform a particular behavior (Kulvinat, et. al, 2007; Kelman, 1958). It is the perceived external pressures that individuals feel in the process of being informed about innovation and decide to use it and to the degree in which an individual perceives that important others believe he or she should use the new system (Mazman et al., 2009). Social influence refers to the way an individual internalizes the reference group, subjective culture and interpersonal agreements made by others in a specific social situation. Thomson et al (1991) suggested that social norms are similar with subjective norms because subjective culture consists of norms (self - instructions in doing what is perceived to be correct and appropriate by members of a culture in certain situations). Fishbein and Ajzen (1975)) Ajzen (1991), Taylor and Todd (1995) and Venkatesh and Davis 2000) describe the subjective norm as the person’s perception that most people who are important to him think he should or should not perform the behavior in question. The social influence is the degree to which an individual perceives the significant others think about an individual’s use of the innovation. Business organizations have to think whether to adopt or reject new technology depending on the prevailing social influences such as attitudes, habits, taste, customs, values and culture; as social acceptance of a particular technology is very vital for the success of any technology adoption as it largely depends on how complex technological innovation leverage into local social context.

Deutsh and Gerald (1955) described two psychological needs that lead humans to conform to the expectation of others. These include our need to be right (informational social influence) and we need to be liked (normative social influence). Informational influence (for social proof) is an influence to accept information from another as evidence about reality. Deutsh and Gerald (1956) further add that informational influence comes into play when people are uncertain, either

because stimuli are intrinsically ambiguous or because there is social disagreement. Normative influence is an influence to conform to the positive expectations of others. Sometimes people are just forced to cooperate in the implementation of any new product against their wishes, leaving no room for resistance. This point of subjective norm in social influence is to be considered seriously by the policy makers as social acceptance of particular technology plays a pivotal role in determining the rate of adoption.

Integrated Framework of ICT Adoption Based On Various Issues and Factors Related To ICT Adoption with SMEs

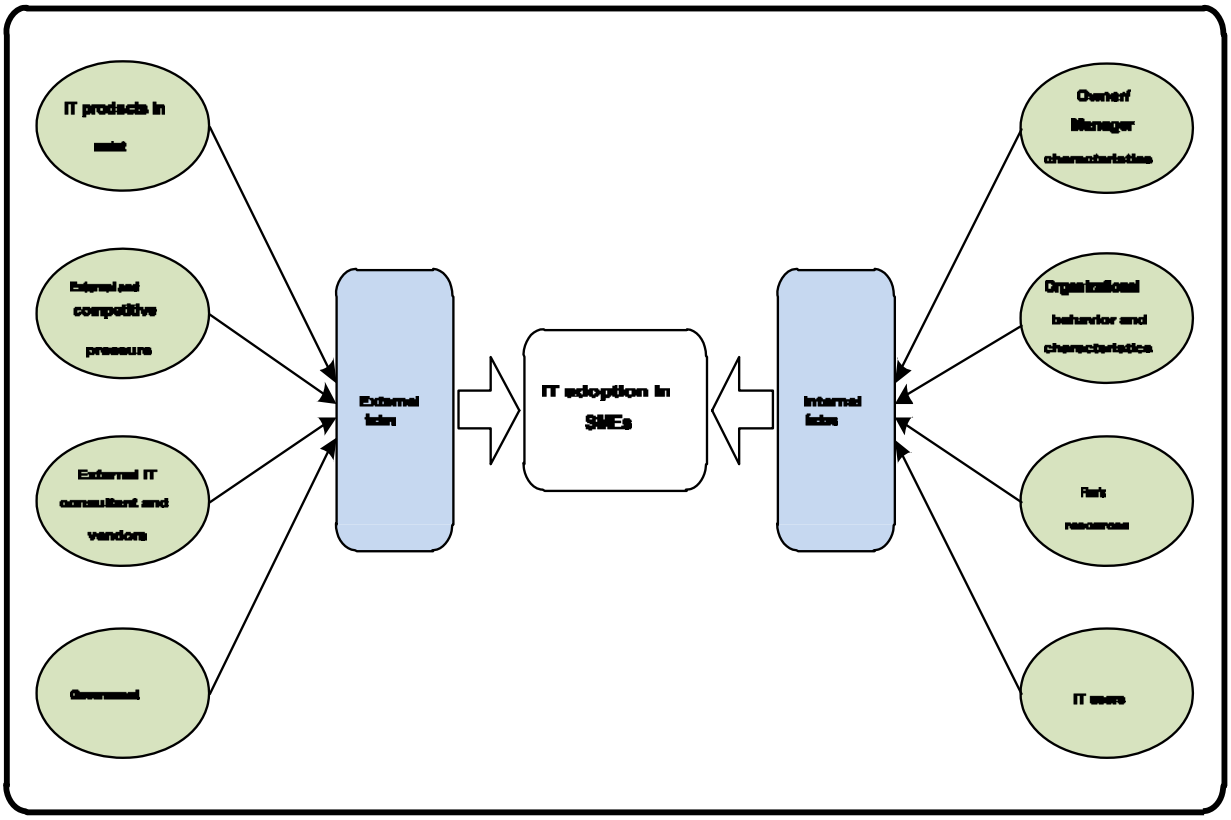


Figure 2. 6: A Framework of IT Adoption Influencing factors in SMEs Context, (Ghobakhloo , 2012)

This framework comprises different aspects of internal and external IT adoption factors (drivers, influencing factors and barriers). The internal factors are defined as factors within the technological context and organizational context of SMEs. Technological context describes the internal technologies relevant to the firm. Organizational context refers to descriptive measures regarding the organization such as firm and scope, managerial structure and internal resources. External factors, however, refers to the factors within the environmental context that describe the arena in which a firm conducts its business as industry competitors and destines with government (Pan 2008, Zhu, 2003; Zhu, 2005).

2.8 The other ICT Adoption Determinants

2.8.1 Information Security

Information security risk may be defined as any possible threat that uses vulnerability in the system of an organization to cause disruption to the organizational routines and processes in some or the other form (Rodgers, 1990). Information security risks may also be classified as threats that lead to a loss of any form to an individual or organization. Such losses may include loss of privacy, identity theft, financial loss, negative impact on customer relations, loss or damage of confidential data or information, or a loss in profitability. Information security risks are a big challenge for any company or organization that deals with permanent or temporary storage or transfer of information (Arase, 2012). The complexity of the information security risk management creates greater uncertainty for successful ICT adoption and therefore increases the risk in adoption decision (PremKumar, 1999). This factor has been perceived to be negatively associated with adoption of technological innovations (Grover et al, 1993; Cooper et al, 1990).

2.8.2 Limited ICT Literacy Level and ICT Adoption

Limited ICT literacy level of SMEs, owners/managers hinders their ability to choose the appropriate technology and understand the concrete benefits it can bring to their business. Limited ICT literacy of employees in SMEs hinders ICT adoption (Duan et al 2002; Funtatolli & Allegra 2003; Heshim, 2007; Kogillah et al 2008; Kotelinkos, 2007, Ramsey et al 2004; Loise et al 2001, Drew, 2003). Many SMEs, owners/managers are unfamiliar with operating a computer are skeptical of the concrete benefits to its core business, and have the stereotype that ICT is only for larger companies. Even if they have the will and financial resources to integrate ICT into their core business, SMEs are often at a loss when needing to choose the most appropriate and cost efficient product. (http://en.m.wikibooks.orgn/wiki/small-medium-Enterprise-and-ICT-

adoptionof ICT).

2.8.3 Communication Infrastructure and ICT Adoption

ICT infrastructure meant the hardware, software and all the related network, which enables both forward and backward linkages of the IT system (Rodgers 2003). PremKumar (2003) funded ICT infrastructure to be an important determinant of information system adoption. The adoption of the new technologies can bring about significant changes in the work practices of businesses that the adoption of the new innovations is compatible with its infrastructure, values and beliefs (Arasa & Achuora 2012).

Prior studies identify telecommunications infrastructure, limited ICT equipment, inability to integrate ICT into business processes, high cost of equipment, incomplete government regulations for e-commerce, poor understanding of the dynamics of the knowledge-economy. Lack of education and technology skills, and ignorance on the usefulness of the adoption among SMEs (Duan et al 2002; Fulanteli; & Allegra 2003; Hashim, 2007; Jones et al; Khatibi et al 2003, Kogilah et al 2008). Therefore the ICT infrastructure available significantly influences the adoption rate among the clothing SMEs. Many developing countries like Kenya still have poor infrastructure, outdated equipment and state owned monopolies often result in expensive charges and limited coverage. This discourages SMEs from adopting even basic ICT products.

2.8.4 The Cost and ICT adoption

ICT firms or suppliers target large enterprises because they had a larger budget and are willing to pay for more complex ICT services. Their products are often too expensive and too complex for SMEs users. However, competition in this market is making firms-both large and small-turn their attention towards the untapped SMEs market. In order for the clothing SMEs to reap efficiency

and productivity gains from ICT there should be affordable ICT products available in the market. Lack of financing option limits SMEs ability to purchase ICT products.

2.9 Theoretical Framework

This study was informed by the TOE Framework by Tornatzky and Fleischer (1990) and Diffusion of innovation by Rodgers (1995). The two models emphasize on internal and external characteristics of an organization as the main drivers for an organization's adoption of technology. Theories about technology adoption are many. These include: the technology acceptance model (TAM) Davis 1986, Davis 1989; Davis et al, 1989), theory of planned behavior (TPB) (Ajzen, 1985; age 1991) United theory of acceptance and use of technology (UTAUT) (Venkatesh et al, 2003) DOIC (Rodgers, 1985) and the TOE framework (Tornatzky and Fleischer (1990)). Broadly speaking, these models analyze technology adoption from either individual level perspective or from firm's (organization's or in this case SMEs) level perspective. This study concentrated on the TOE framework (Technology, Organization and Environmental framework) by Tornatzky and Fleischer (1990) and Diffusion of Innovation model (DOI) by Rodgers (1995) because they address the technology adoption process from both individual and the firm's level (SME's level) perspective, which was the main concern of this study.

2.9.1 Technological Organizational Environmental (TOE) Framework.

The TOE framework was developed by Tornatzky and Fleischer (1990). It identifies three aspects of an enterprise context that influence the process by which it adopts and implements a technological innovation, technological context, organizational context and environmental context. These three elements "present both constraints and opportunities for technological

innovation", (Tornatzky and Fleisher, 1990 p. 154).

Technological context describes both the internal and external technologies relevant to the firm. These include current practices and equipments internal to the firm (Starbuck, 1976), as well as the set of available technologies external to the firm (Thomson 1967, Khandukil, 1970, Hage, 1980), organization readiness (Venkatesh et. al, 2012) as reflected by financial and employee readiness, technological cost - benefit. Organizational context refers to the descriptive measures about the organization such as scope, size, managerial structure, formal and informal linking structures, and communication processes between employees, human resource, quality availability or lack of resources (financial), top management support.

Environmental context is the arena in which firm conducts its business (the size and structure of the industry), market, the firm's competitors and the regulatory environment. External pressure is primarily from customers' suppliers and employees. These contextual factors influence the organization's decision to assimilate an innovation which eventually impacts the organizational performance and hence its capacity to cope with stiff competition in the market. The figure below demonstrates how the three factors interrelate with the technology innovation adoption.

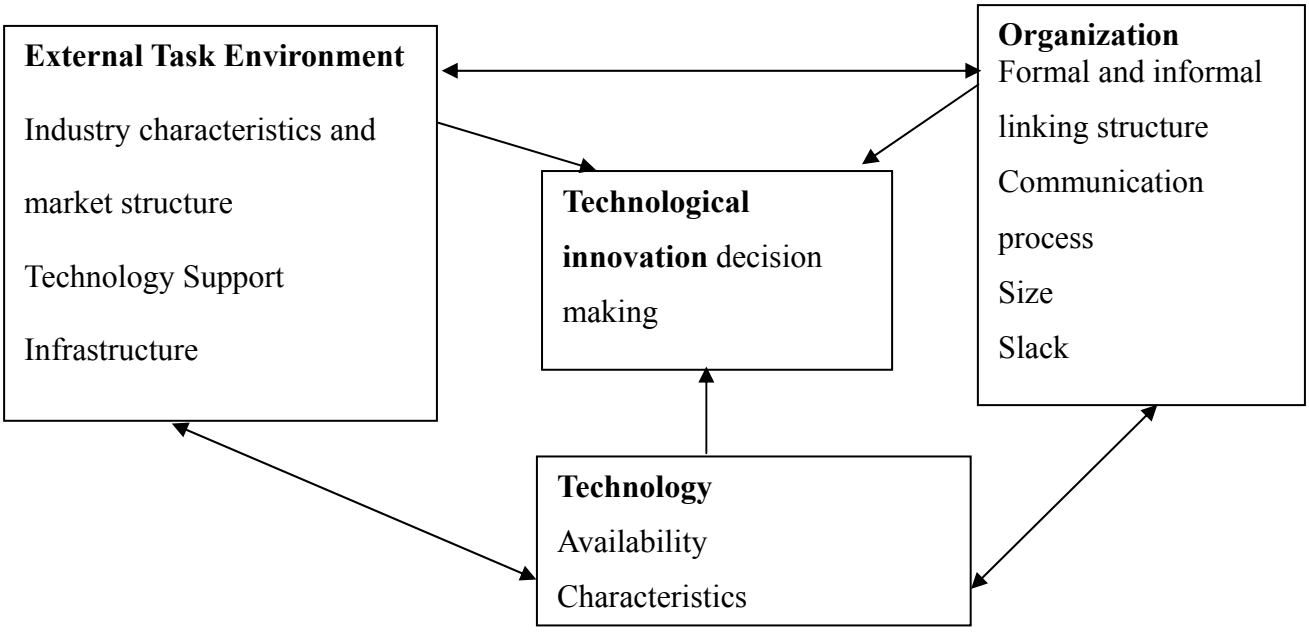


Figure 2. 7: Technology Organization and Environmental Framework (Tornatzky and Flescher, 1990)

The TOE framework provides a useful analytical framework that can be used for studying the adoption of technological innovations (Oliveria & Martins 2012).

2.9.2 The Diffusion of Innovation Model (DOI)

DOI theory defines how, why, and what rate new ideas and technology spread or are adopted through certain channels over time, among the members of a social system (Rodgers, 1995). Individuals are seen as possessing different degrees of willingness to adopt innovations and thus it is generally observed that the portions of the population adopting an innovation is approximately normally distributed over time (Rodgers, 1995). Further, five categories of individual innovativeness were identified as follows: (from earliest to latest adopters) innovators, early adopters, early majority, late majority, and laggards.

DOI also describes the innovation process in an organization, as a process involving a number of

individuals each playing a significant role in the innovation decision process. The innovativeness of an organization is influenced by individual (leader) characteristics, internal organizational structural characteristics and external characteristics of an organization (Rodgers, 1995). The individual characteristics describe the leader's attitude towards change. Internal characteristics of organizational structure include: the degree to which power and control systems are concentrated in the hands of a relatively few individuals, the degree of complexity to which an organization's members possess a relatively high level of knowledge and expertise, the degree of inter-connectedness to which the units in social systems are linked by interpersonal network, organizational slack. It is the degree to which uncommitted resources are available to an organization, the size of the number of employees of the organization and external characteristics of the organization which refer to system openness (Rodgers, 1995).

According to DOI, diffusion rate is determined by four main elements; the characteristics of innovation, the effectiveness of communication channels, time involved in the innovation, decision process relative to the innovativeness of the individual or other decision making unit and the surrounding social system. The first element in the diffusion of innovation theory that determines the adoption rate is the characteristic of the innovation. This is comprised of five components (i.e. Relative advantage, compatibility, observability, durability, and complexity), (Ghane et al, 2011).

The relative advantage reflects the extent to which adopters perceive the advantages of using and implementing these innovations. Such perceived advantages include economic profitability, decreasing the production costs, decrease discomfort, social prestige, time and effort saving influence decision to adopt new technology. The innovation should demonstrate a relative

advantage over other options in terms of its performance, cost, social standing and simplicity to implement or use. Compatibility is the extent to which adopters perceive the implementation of new innovation. As adopted technology will be integrated into one's life, it must mesh well. This compatibility may be of a technical basis, such as software or hardware compatibility issues with a computer. Additionally, the technology should not cross one's value or belief systems. It must be consistent with the existing values, beliefs, past experience and needs. If an innovation is incompatible with social values and beliefs, it will not be adopted as rapidly as an innovation that is compatible.

Observability the easier it is for an individual to see the results of an innovation, the more likely they are to adopt it. It refers to how visible the use of the technology is to those around. For a person to adopt or otherwise knowing that other individuals are using that technology dramatically encourages adoption. Observing a technology stimulates awareness of the innovation and conversations among one's peers. As more and more people use the technology, the public becomes more aware of the technology and thus the rate of adoption increases until the technology is in common use and has saturated the market. Trial ability is the degree to which an innovation may be experimented. It provides customers with the ability to evaluate innovation benefits and overcome fears of unknown; ease to vice versa complexity.

Complexity is the degree to which an innovation is perceived as relatively difficult to understand or use. New ideas that are simple to understand by members of a social system are adopted more rapidly than innovations that require the adopter to develop new skills and understanding. Complexity increases rejection rate.

The second element in DOI is the effectiveness of communication channels. According to Rogers (1996) diffusion refers to the process by which an innovation is communicated through certain channels over time among members of a social system. According to Rogers (1995) time variable is involved in diffusion in; the innovation -decision process, innovativeness and an innovation's rate of adoption. The decision process is relative to the innovations of an individual or other decision making units. The potential adopters of the new technology have to make a choice whether to adopt or reject the technology. According to Rogers (1995) this is a personal process involving the weighing of advantages, disadvantages, costs, benefits and trade -off of the new innovation. When adopted, the person begins to use and integrate the technology into daily use.

The fourth element in the Diffusion of Innovation Theory is the social systems. The nature of the connection between members of a social network also influences the likelihood of diffusion. The social network is comprised of individuals who are tied to one another in a 'mesh of connections (set 1988). Such ties or connections represent with whom, where and how an individual interacts, connects with or socialize with, within a certain or definite network, while an individual's position in that network shows the degree that the individual acts as a vector of information from one side of the network to another. Different members within a network perform the role of transferring information innovation.

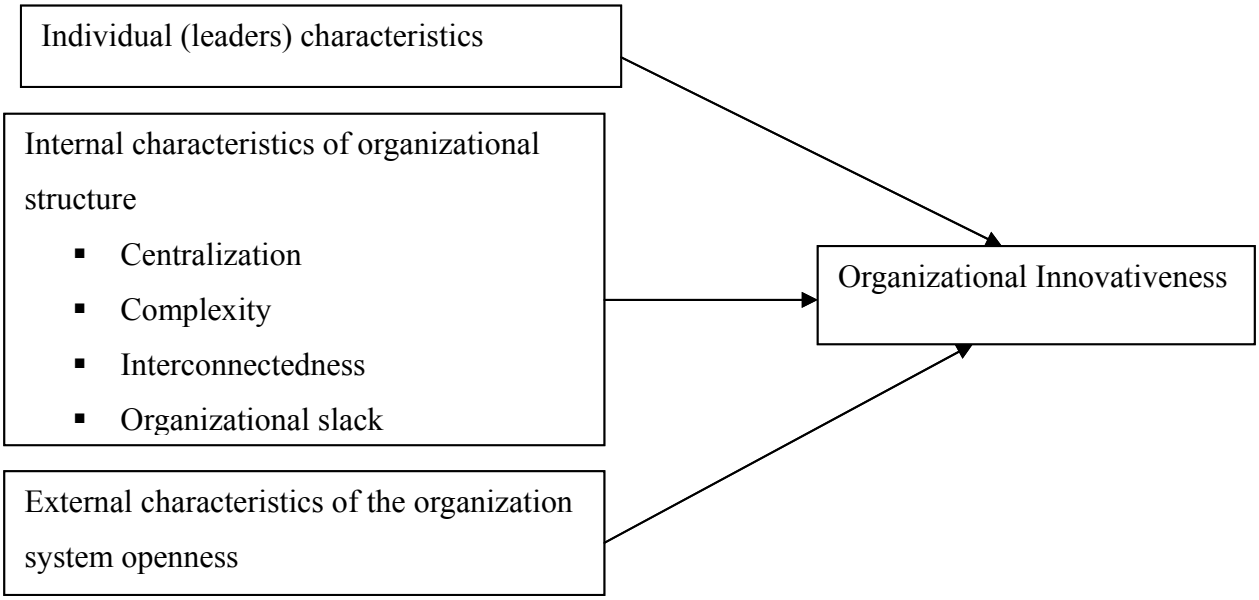


Figure 2. 8: Diffusion of Innovation (Rodgers, 1995)

DOI model defines individual characteristics internal and external characteristics of an organization (firm) as important antecedents of organizational innovativeness.

2.9.3 Innovation Decision Process Model (Rodgers 1995)

One of the most important theories by Rodgers is the Innovation-Decision-Process Model. The model suggests that the adoption of an innovation is not a single act, but a process that occurs over time. Potential adopters go through five stages when interacting with an innovation. The first stage is "knowledge" which potential adopters find out about an innovation and gain basic understanding of what it is and how it works. The second stage is "persuasion" in which potential adopter forms a positive or negative impression of the innovation. The person begins to show interest in the technology and seeks the information about technology costs, features and user view. It is at this point that he begins to consider himself as a potential user of technology and begins to actively consider whether or not to adopt the technology into their regular activity.

It is only in the third stage “decision” that the innovation is actually adopted or rejected. This personal process involves the weighing of advantages, disadvantages, costs, benefits and trade offers. The person begins to use and integrate technology into the daily life. Rodgers points out that the process of deciding occurs silently and it is invisible to outsiders.

The fourth stage “implementation” occurs when innovation is actually used. The task of integrating the innovation into regular use can be a slow and time consuming process. For the person involved, changes in a person’s usual habit and practices may be necessary. The technology is also being evaluated at this time to see to it that it meets expectations. Further information about the technology is also being sought in order to improve usability and usefulness of the technology. During this stage, re-invention may occur. Re-invention refers to the process by which a person adopts or modifies a technology to better meet his/her needs and improve its overall compatibility. This modification may also involve using the technology’s original intent. In the fifth stage “confirmation” the adopter seeks information about the innovation and either continues or discontinues use of the innovation. At this point, the person finalizes their decision regarding the adoption of the technology.

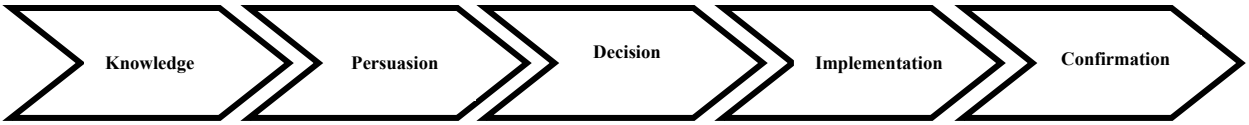


Figure 2. 9: Five Stages of Rodgers (1995) Innovation – Decision Process Model

TOE framework is consistent with the DOI Theory in which Roger (1995) emphasized individual characteristics and both the internal and external characteristics of the organization as drivers of the organizations innovativeness. These are identical factors to the technology and organizational context of the TOE framework. It also includes a new component's environment context. The

environmental context presents both constraints and opportunities for technological innovation.

2.10 Conceptual Framework

This study combined the variables raised by TOE framework and DOI models to develop a new conceptual framework of adoption. The dependent variables of this study consisted of adoption or rejection of ICT by SMEs. The elements in the three aspects of enterprise context that influence the process by which it adopts and implements a new technology innovation, that is, technological context, organizational context and environmental context constitute the independent variables of the study. The figure below (2.6) shows the alignment of the variables of the study. The conceptual framework of this study includes the dependent, independent and intervening variables.

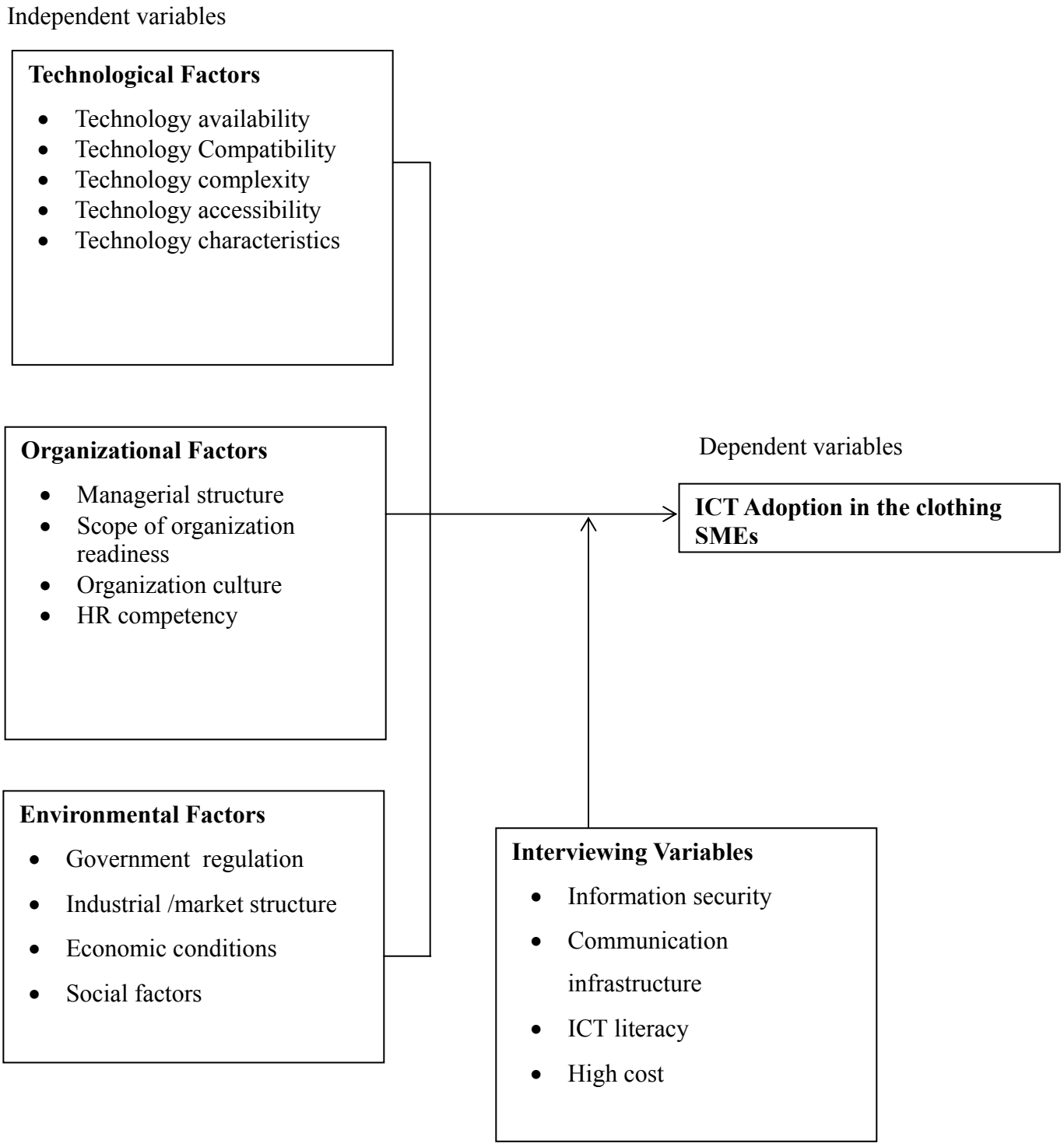


Figure 2. 10: Conceptual Model of ICT adoption Influencing Factors (Self, 2014)

The SME sector plays a key role in national economic development strategies by facilitating the flow of information, capital, ideas, people and products. SMEs in different sectors use ICT

differently and will adopt them at different rates. According to International Financial Corporation Report on Micro-small and Medium Enterprise, (2006), as of July 2006, close to 140 million SMEs in 130 countries employed 65 percent of the total labor force. These contributions can further be enhanced and strengthened through the use of ICTs that are increasingly transforming modern businesses by enabling the rapid, reliable and efficient exchange of large amounts of information. Access to and the use of ICTs by SMEs will lead to greater job creation, increased public revenue and general rise in the standard of living, reduce social and economic inequalities, particularly those related to income generations, poverty reduction, healthy environment and gender equity - help to achieve broader development goals. ICT will increasingly empower SMEs to participate in the knowledge economy by facilitating connectivity, helping to create and deliver products and services on a global scale and providing access to new markets and new sources of competitive advantage to boost income growth (UNDP 2007).

2.11 Research Gap

Previous studies reveal that ICT adoption within SMEs is influenced by various factors. However, not much study has been done in Kenya's context of SME adoption of ICT. Due to the fact that various countries and firms have different unique characteristics and specific conditions of technological innovation and diffusion, this study is meant to fill in the gap. Hence, this study will carry out an empirical testing on the adoption influencing factors raised by previous studies to determine their relevance and conformity in practical setting for the SMEs in Kenya. In reviewing various frameworks of ICT adoption in existence, this will be done with a view to determining their compatibility to the existing technological, organizational and socio-

environmental structures of SMEs in Kenya. Further into the study, various theories are reviewed to determine whether they conform to the reality on ICT adoption process in the Kenyan situation. An appropriate framework/strategy of adoption will be formulated and proposed for adoption. The emergence of the internet has allowed small and medium-sized enterprises (SMEs) to compete effectively and efficiently in both domestic and international markets. However, despite advances in ICT and the acceptance of such technologies by large organizations, the same level of adoption is not evident among SMEs in Kenya.

The purpose of this study therefore is to analyze the possible potential determinants of ICT adoption among the clothing SMEs and also to determine the possible potential supporting ICT adoption activities that would facilitate them to overcome the possible barriers. The study revealed that both, internal and external barriers inhibit the adoption of ICT by SMEs. Internal barriers can be resolved within the organization by the organization itself, while external barriers need to be addressed either by government intervention or by associations of SMEs. The study further identifies the relevant support required by SMEs in a developing country, like Kenya. The prior study also reveals their SMEs in Kenya are still grappling to fully adopt ICT. There is a need to develop an appropriate framework of adoption that would enable SMEs fully integrate ICT.

CHAPTER THREE

RESEARCH METHODOLOGY

3.0 Introduction

This chapter outlines the methodology used in the research study. It describes the type of research design that was used, the target population, sample size, sampling design, and finally pilot-testing of the research study. It further describes the data collection instruments and the procedures used in collecting the data, data analysis and presentation of the research findings, which depict clearly the adoption of information communication technology by small and medium enterprises.

3.1 Research Design

Chandran (2004) describes research design as an understanding of conditions for the collection and analysis of data in a way that combines their relationships with the research to the economy of procedures. Harper and Marcus (2003) suggest that research design deals with the detailing of procedures that will be adopted to carry out the research study. This study adopted the descriptive survey design. Crano (2002) affirms that descriptive studies are part way along the continuum from exploratory to causal. These studies assume that, relevant variables are known. Chandran (2004) articulates that descriptive design is appropriate to describe and portray characteristics of an event, situation, a group of people, community or a population. It leads to a profile of the development of a situation or a community of people by acquiring complete and possibly accurate information through interaction between the investigator and informants via questionnaires and the interviews.

Descriptive study design was considered the best for this study as the study has specific variables that it sought to answer. The specified variables that this study sought to establish are the framework for the adoption of ICT by SMEs, extent of adoption of ICT and the effective implementation of ICT by SMEs.

The study sought to describe the identified variables as they are without manipulation of variables. Kombo and Tromp (2006) confirmed that, the major purpose of a descriptive research is a description of the state of affairs, as it exists without manipulation of variables. Kerlinger, (2005) points out that, descriptive studies are not only restricted to fact-findings, but also may often result in the formulation of important principles of knowledge and solution to significant problems. This implies that the research study was of much importance towards understanding, adoption of information communication technology by small and medium enterprises (SMES) in Kenya. The descriptive research design was preferred in this study because it allows for analysis of different variables at the same time and thus it enabled the researcher to describe the adoption of information communication technology among clothing small and medium enterprises (SMES) in Nairobi County (Kenya).

3.2 Target Population

According to Kothari (2004), a population is a well-defined set of people, services, elements, and events, group of things or households that are being investigated. There are many categories of SMEs in Kenya found in different sectors of the economy. These include agriculture, energy, health services, hospitality, real estates, information communication technology services, logistics services, manufacturing, retail and distribution. The SMEs found in Nairobi County (Kenya) form the general population of this study. The specific targeted population of this study

comprised of the clothing SMEs in Nairobi, Kenya as recorded in Kenya Business Directory (2010-2013 Edition). Their specific number is 444 in total (registered).

3.3 Sampling Design

According to Breakwell (2006), sampling is the process of selecting a number of individuals in a study in such a way that the individual represents a larger group from which they are selected. The study adopted census as the method of sampling to arrive at the sample size of the study. The study adopted random-sampling technique in a complete enumeration of all items in the target population (Kothari, 2004). As the target population of the study is the Clothing, in Nairobi Kenya. The study used random-sampling technique to select the sample. A sample of 100 clothing SMEs in Nairobi County (Kenya) was used for this study. (About 30% of the total population of 444 SMEs).

3.4 Data Collection Instruments

In this study, both qualitative and quantitative data were collected. This is because the two methods leave the possibility of change and of asking complimentary questions. Data collection was done using the questionnaire. According to Harper, Laws, and Marcus (2003), a questionnaire is a written list of questions, either given or posted to respondents, who fill it by themselves. Information is gathered directly from people through a series of questions, many that are likely to offer the respondent some possible replies to tick. The reason for choosing questionnaire as the data collection instrument was primarily due to its practicability, applicability to the research problem and the size of the population. It is also cost effective (Denscombe, 2008). A self-administered questionnaire with both open and closed ended questions were developed and administered to obtain information from the 100 respondents.

Questionnaires were used in this study and comprised of questions, which sought to answer questions related to the objectives of this study. The questions entailed both closed to enhance uniformity and open ended questions to ensure maximum data collection and generation of qualitative and quantitative data. The constituents' questionnaire was divided into three sections that is, the background information, section on establishing the extent of the adoption and the framework for the adoption of ICT by SMEs, and finally, a section on the influencing factors of adoption of ICT among clothing SMEs in Nairobi County (Kenya).

The research study was conducted from the top management officials in the SMEs. The researcher therefore made appointments with the respondents when ready to begin the data collection. The questionnaires were distributed, collected and then recorded in a process of determining the flow of distribution and making them ready for analysis.

3.5 Pilot Testing

Pilot testing enables the researcher to receive important feedback on how questions were to be recorded or restructured. It is very important for the researcher to pretest research instruments to enhance clarity of the instruments to be used. The researcher conducted pre-testing through a pilot study to ensure that the reliability of the research instruments is high. The research used a 5% test of the population. Reliability is a measure of the degree to which a research instruments yield consistent results after repeated trials (Nsubuga, 2000). The researcher carried a pretest on the questionnaire on selected SMEs, which was not part of the actual study since subjects in the actual sample should not be used for pre-testing. The reliability of the instrument was estimated using Cronbach's Alpha Coefficient, which is a measure of internal coefficient. A reliability of at least 0.70 at α=0.05 significance level of confidence was accepted. Adjustments were made

accordingly in case a low co-efficient was obtained in order to improve reliability of the instrument.

According to Mugenda and Mugenda (1990) the reliability of the instrument is the measure of the degree to which a researcher yield consistent result effect respected trials. Cronbach's Alpha co-efficient of 0.70 confirmed the reliability of the instruments.

$$Cronbach's\ Alpha = \alpha = \frac{N.\bar{C}}{\bar{V} + (N-1).\bar{C}}$$

Whereas N is equal to the number of item C- bar is the average inter-item covariance among the items and V- bar equal the increase, Cronboch's Alpha increase. If the average inter-item correlation is low, Alpha correlation increase, Chonbach's Alpha increase as well, holding other number of items constant. According to Cronbach (1946) reliability coefficient of above 0.80 is considered a good indicator of internal consistency reliability that was used in this study.

In this study a reliability test was done using Cronbach's Alpha test. The main objective of this test was measured the internal consistency of the study components, which is, how closely related a set of components are as a group. The Cronbach's Alpha value of this research on the dependent variable was found to be 0.720, suggesting that it had a relatively high internal consistency. While all the independent variables and values which were above 0.70 implying that each had a high internal consistency. Specifically, technological factors had 0.875; Business organizational factors had 0.834 and the external factors (environmental factors) had 0.724.

3.6 Data Analysis Technique

Data analysis is the process of bringing order, structure and meaning to the mass of information collected. It involves examining what has been collected and making deductions and inferences

(Kombo & Tromp, 2006). The gathered raw data was edited for accuracy, usefulness and completeness. Quantitative data were analyzed by use of descriptive statistics, namely mean scores, percentages and frequency distribution.

3.6.1 Qualitative Data Analysis

The qualitative data collected was organized into themes and sub themes as per objectives in order to draw conclusions. The responses collected from the questionnaires were checked for completeness and consistency and where errors were detected, necessary cleaning was done. Qualitative data from open ended questions was analyzed by organizing the data into sub topics or themes as per the research objectives and description given in the form of words. This information helped the researcher draw conclusions. The qualitative data collected was organized into themes and sub themes as per the objectives in order to draw conclusions.

3.6.2 Quantitative Data Analysis

The gathered raw data was edited for accuracy, usefulness and completeness. Quantitative data were analyzed by use of descriptive statistics, namely mean scores, percentages and frequency distribution. To establish the nature and magnitude of the relationships, the researcher used inferential statistics. The appropriate test applied was the Pearson's Product Moment Correlation Coefficient (r) and multi regression analysis for hypothesis testing. SPSS version 20.0 was used as the tool for data analysis. Information from the analyzed data was presented using tables.

Inferential statistics, that is, Factor analysis and multiple regression analysis were used to establish the adoption of Information Communication Technology among clothing Small and Medium Enterprises in Nairobi County (Kenya)**.** Factor analysis was used because of the concern of decomposing the information contained in a set of variables into information about an inherent

set of latent components/factors. This assisted in reducing a number of variables into few factors which are of similar characteristics. The regression model that was used is depicted as follows:-

Technological factors **(T)** influence adoption of ICT by SMEs. Technological factors include IT support, **(X_1)**, ICT infrastructure **(X_2),** Technology availability **(X_3)**, and existence of expertise **(X_4)** while adoption of ICT is the dependent variable **(Y_1).** Hypothesis, one **H_1**which this study will aim at testing, therefore, will be, there is no relationship between technological factors and ICT adoption by SMEs in Kenya. This can be expressed as:

Y_1=F (T) but T=F(X_1, X2, X3, X4)

Therefore, $Y1=\alpha+b_1X_1+ b_2X_2+b_3X_3 +b_4X_4+ e$**…….....** ***equation 1***

Organizational factors **(O)** influence ICT adoption by SMEs. These factors include Managerial Structure (X_5) Organization system, Scope readiness (X_6), Organization Strategies (X_7), Organization Culture (X_8) and Human Resources (X_9). Hypothesis two **H_2**which this study will aim at testing, therefore, will be, there is no relationship between organizational factors and ICT adoption by SMEs. This can be expressed as:

Y_2=F(O) but **O=f(X_5,X_6,X_7,X_8,X_9)**

$Y2=a+ b_5X_5 + b_6X_6 +b_7X_7 +b_8X_8 +b_9X_9+ e$***……....equation 2***

Environmental factors **(E)** influence ICT adoption by SMEs. These factors include competition (X_{10}) Government regulation (X_{11}), Industry market structure (X_{12}), Social Dynamics(X_{13}), social internationalization (X_{14}), social compliance (X_{15}), social identification (X_{16}) and the desire to please the significant others (X_{17}) popularly of IT X_{18}.Hypothesis two **H_3**which this study will aim at testing is, there is no relationship between environmental factors and ICT adoption by SMEs. This can be expressed as: Y_3=f (E)

But E=f(X_{10},X_{11},X_{12},X_{13},$X_{14,}$ $X_{15,}$ $X_{16,}$ $X_{17,}$ X_{18})

$$Y_3=\alpha+ b_{10}X_{10} + b_{11}X_{11}+b_{12}X_{12}+b_{13}X_{13}+b_{14}X_{14}+ b_{15}X_{15} + b_{16}X_{16} + b_{17}X_{17}+b_{18}X_{18}+e \text{…….equation 3}$$

Lastly, the combined effect of Technological factors (T), organizational factors (O), and environmental factors (E) influence ICT adoption (Y) by SMEs. The intervening variables © are assumed to be under control or remain constant, hence they have no effect on the other variables in the process. This can be expressed as:

Y=f (T, O, E), therefore:

$$Y=\alpha+ \{b_1X_1+ b_2X_2+b_3X_3 +b_4X_4\} + \{b_5X_5 + b_6X_6 +b_7X_7 +b_8X_8 +b_9X_9\}+\{b_{10}X_{10}+ b_{11}X_{11} +b_{12}X_{12}+b_{13}X_{13}+b_{14}X_{14}+b_{15}X_{15}+b_{16}X_{16}+b_{17}X_{17}+b_{18}+X_{18}\}+e+c \text{……..equation 4}$$

ε= error term, α =coefficient, *a*=Constant in intervening variables, b = coefficient of independent variables.

Measuring the Level of Adoption (Y)

According to Sirawit and Islam (2010) the level of adoption can be measured by an ICT component of availability, intensity and integration. The ICT availability in a business is measured in terms of ICT components that the business is currently using. ICT integration is the number of linkages between individual ICT and in each categorized group to another (point to point system) or to the main control systems (client-server system) and ICT usage intensity measured by the percentage of the operational activities carried out by ICT, for example the percentage of the transaction carried out through business website reservation system. This study used ICT usage intensity to measure the level of adoption (Y) among clothing SMEs in Nairobi County (Kenya).

CHAPTER FOUR

DATA ANALYSIS, INTERPRETATION AND DISCUSSION

4.0 Introduction

This chapter focuses on presentations and interpretations of the study findings. The general objectives of this study were to assess the factors influencing adoption of ICT among the clothing retailers in the Nairobi County (Kenya). This chapter details the data analysis and also presents the discussion of the study findings. It gives the summary of the study findings, discussion of the research findings, where the findings were compared with the findings to other relevant studies carried out earlier. The effects of the technological, organizational and the environmental factors on ICT adoption were examined and analyzed, the results were as follows:-

4.1 Response rate

The study sample size was 100 where 95 respondents responded and returned the questionnaires. This constituted a 95% response rate. Mugenda and Mugenda (2003) indicate that for generalization purposes, a response rate of 50% is adequate, while that of 60% is good and a response rate of 70% as excellent. The response rate of 95% in this study was therefore an excellent and acceptable.

4.1.1 Reliability Test Results

In this study, the reliability was ensured. The results obtained are presented in Table 4.1.

Table 4. 1: Reliability Results

Variable	Cronbanch's Alpha	No. of Item
Technological Element	0.8527	8
Business organization	0.8892	6
External Forces	0.8049	10

From the findings, coefficient of technological element was 0.8527 making question items reliable. The Cronbanch Alpha of Business Organization was 0.8892 items concerning business organization reliable. The study revealed that questions concerning external forces had a Cronbanch Alpha coefficient of 0.8049 making questions on external forces influencing adoption of ICT in clothing Small and Medium Enterprise.This clearly indicated that the instrument was reliable.

4.1.2 Validity Outcomes

Validity refers to the accuracy or truthfulness of a measurement in terms of the likelihood that research questions was understood or misinterpreted and on whether the research instruments provided adequate coverage of research objectives. Mugenda and Mugenda, (1999), states that to enhance validity of a questionnaire, data should be collected from reliable sources, the language used in the questionnaire should be kept simple to avoid any ambiguity and misunderstanding.

The validity of data collected was ensured through collecting data from the relevant respondents having been permitted by the University and the management of the Small and Medium Enterprise. The validity of the instrument was also established by being ascertained by the experts, the supervisors with experience in entrepreneurship who evaluated the items in relation to the study objectives and approved them.

4.2 General Information

4.2.1 Period the Business had been Existence

The study results in table 4.2.

Table 4. 2: Existence of the Business

	Frequency	Percent
1 – 5 years	33	1
6- 10 years	26	12
11- 15 years		42
16 – 20 years		31
More than 21 years		14
Total	**95**	

Finding in Table 4.3 indicated that 42% of the respondents indicated their clothing SMEs had been in existence for 11-15 years, 31% indicated that their clothing business had been in existence for 16 to 20 years while 14% indicated that their clothing business had been in existence for more than 21 years. The study also established 12 % of the clothing business had been in existence for 6 to 10 years while 1% of the clothing business had been in existence for 1-5 years. This implied that most of the clothing enterprises had been in existence for more than 10 years and therefore had experience on factors influencing ICT adoption process within Clothing SMEs in Kenya.

4.2.2 Business Branches

The study sought the business branches the enterprise had and the findings presented in the tables 4.3.

Table 4. 3: Business branches

	Frequency	Percent
Only One		0
Two		0
Three		6
Five		33
More than 5		61
Total	**95**	**100**

The respondent was requested to indicate whether the enterprises had branches. From the findings, 61% indicated that they had more than 5 branches, 33 % of the respondents indicated that they had 5 branches while 6% of the respondents indicated that the enterprise had 3 branches. This implied that the clothing enterprises were operating a clothing business with more than 5 branches.

4.2.3 Business ownership

The respondents were requested to indicate the ownership of the business as indicated in table 4.4.

Table 4. 4: Legal Business Ownership

	Frequency	Percent
Sole trader	14	15
Private limited company	36	37
Partnership	45	48
Total	**95**	**100**

From the findings, 48% of the respondents indicated that most clothing enterprises were partnership type of business, 37% indicated that clothing enterprise were private limited companies while only 15% indicated that their business were sole traders. This implied that most of clothing enterprises were partnership and private limited owned. This explained that large clothing business internal entered into business opportunities capability together to share idea and pull resource to adopt such capability as Information communication technology.

4.2.4 Level of education

Table 4. 5: Highest level of education attained

	Frequency	Percent
Degree	42	45
Diploma	19	20
Certificate	10	11
Secondary	2	2
Post Graduate	19	21
Total	**95**	**100**

The study revealed that most respondents, 45% had attained degree level of education, 21% had attained posy graduate level of education, 20% had diploma level of education, and 11% of the respondents had a certificate level of education while 2% had a degree as their level of education. This implied that the majority of the respondents had a high level of formal education, hence the respondents were in a position of offering relevant information regarding factors influencing adoption of information communication technology among clothing small and medium enterprises in the Nairobi County (Kenya). The findings concurred with Rahman, Rafiq, & Momen, (2009) findings who found that high level of knowledge on enterprise management, influence offering of information that answers researched question in a study

4.2.5 Number of employees

The respondents were requested to indicate the number of employees in the enterprises.

Table 4. 6: Number of Employees

	Frequency	Percent
Below 50	79	83
50-100	16	17
101-500	0	0
Total	**95**	**100**

From the findings in Table 4.6 represents the company profile regarding employee capacity. It indicates that, 83% of the organizations had under 50 employees while 17% of the respondents indicated that their enterprises had 50-100 employees. The cutoff point in terms of size of SMEs is based on a recommendation from the African Development Bank, which defines SMEs as having less than 50 employees. SMEs are independent in ownership and operation, have close control by owners/managers who contribute most capital and principle decision making is done by the owner/manager.

4.2.6 Personal Computer type of ICT

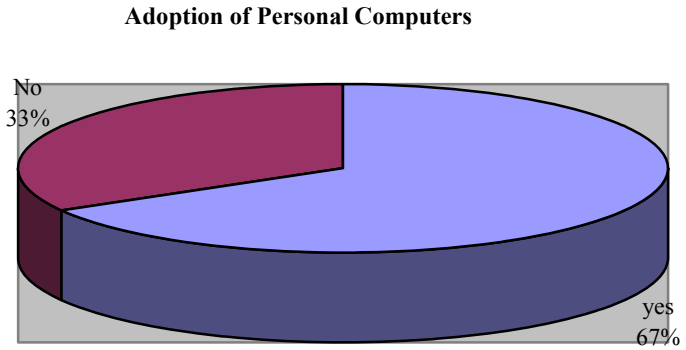


Figure 4. 1: Personal Computer type of ICT

Figure 4.1 presents the number of organizations that had adopted PC. From the findings in Figure 4. , 67% indicated that organizational had adopted personal computer while 33% had not. This implied that most enterprises had adopted personal computers in the executing their operations. The finding concurred with Nguyen (2009) findings who established that many businesses adopt new IT such as used of personal computer to keep up with other SMEs which have implemented these technologies

4.2.7 Adoption of Internet

The respondents were requested to indicate whether their enterprise had adopted internet in their operations.

Table 4. 7: Adoption of Internet in SMEs

Adoption of Internet in SMEs	Frequency	Percent
Yes	91	96
No	4	4
Total	**95**	**100**

From the findings in table 4.7 shows that 96% of the clothing enterprises had adopted internet. This implied that most clothing enterprises had adopted ICT internet in their operations. The finding was similar to Nzuki, (2006) who found that the Internet gives customers access to their firms through a website Internet offering more convenience, flexibility to customers and grants them absolute control over their purchasing activities and help enterprise in achieving a competitive advantage by improving the quality of customer service, reducing the operational costs and thereby promoting cost leadership.

4.2.8 Telecommunication

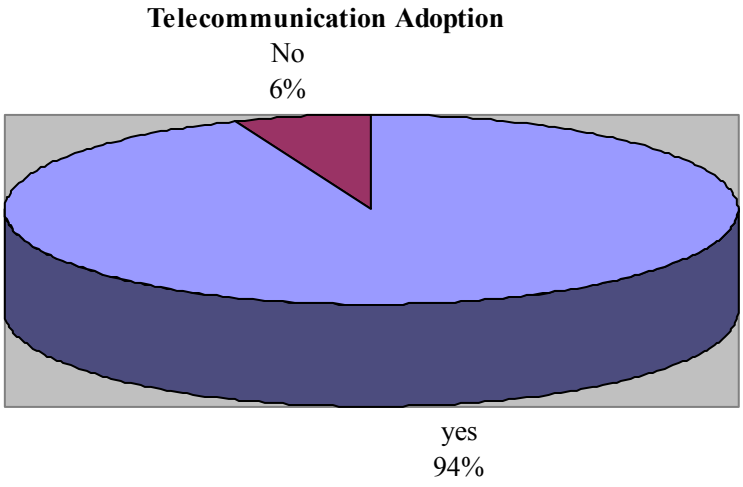


Figure 4. 2: Telecommunication

The respondents were requested to indicate whether clothing enterprise had adopted telecommunication technologies. From the findings, Figure 4.12 show that, 94% of the organizations had adopted telecommunication technologies while 6% had not successfully adopted telecommunication technologies. This clearly indicated that organizations had adopted telecommunication ICT in their business. The findings concurred with Mokaya, (2012) who found that enterprises adopted telecommunication technologies such as the use of mobile phones to facilitate connectivity, helps to create and deliver products and services on a global scale and provide access to new markets and new sources of competitive advantage to boost income growth.

4.3 Adoption of ICT by Small and Medium Enterprises in Kenya

4.3.1 Difficulties in the Selection Stage

Table 4. 8: Difficulties Stage Cross Tabulation

Difficulties Stage Cross Tabulation	Frequency	Percent
Selection stage	72	76
Implementation stage and family	76	81
Use stage	67	71

The respondents were requested to indicate whether their enterprises, difficulties during selection of ICT, implementation of ICT or usage stages. Findings in table 4.9 76% of the respondents indicated that their organizations had faced difficulties in adopting ICT in the selection stage while 81% of the organizations experienced difficulties in the selection stage while 71% indicated that their organization had experienced difficulties in usage stage.

This clearly indicated that most of clothing enterprises in Nairobi experienced challenges during the adoption of ICT either at selection, implementation or at the usage stage. The findings concurred with Kotelnikov (2007) who established that many SMEs within the Asia Pacific Region face major constraints such as poor telecommunications infrastructure, Limited ICT literacy, inability to integrate ICT into business processes, high costs of ICT equipments in complete government regulations for e-commerce, and poor understanding of the dynamics of the knowledge e-economy.

4.3.2 Measuring the Level of ICT Adoption (Y) Among the Clothing SMEs

Table 4. 9: Level of ICT adoption

	Frequency	**Percentages**
Very Low	10	10
Low	19	18
Moderate	20	21
High	43	45
Very high	5	5
Total	**95**	**100**

The study sought the level of ICT adoption in clothing enterprises. From the finding in Table indicate 45 % indicate that level of ICT adoption was high, 21% indicated it was moderate, 18% indicated that level of ICT adoption was low, 10% indicated that level of technology adoption was very high with 5% indicated that level of ICT adoption in clothing enterprise was very low. This implied that level of ICT adoption in SME in clothing sector was relatively low. This finding supported findings by Mac Gregor (2005) who asserted that the rate of IT adoption by SMEs was relatively low as compared to adoption rate in large companies.

4.4 Influence of Technological factors to ICT Adoption among the clothing SMEs

4.4.1 ICT Features and level of ICT adoption

Table 4. 10: Features and level of ICT adoption

	Frequency	Percentages
Size	70	74
Friendlier	62	65
Palatability	64	68
Amount	77	82
Complexity	81	85
Compatibility	85	90
Flexibility	78	83
Availability	87	92
Understandability	90	95
Characteristics	71	75
Usability	86	91
Relevancy	76	80
Viability Of The Available Technology	74	78

The respondents were requested to indicate the whether the given technological elements influenced the adoption of ICT. From the finding 95%, 92%, 91% and 90% of the respondents indicated that understanding of technology, availability of the ICT, usability of ICT and greatly influences the adoption of ICT in their business. The findings concurred with Sirirak & Islam (2010) found that availability of ICT in a business influenced ICT adoption in business.The finding 85%, 83%, 82% and 80% of the respondents indicated that complexity of ICT, flexibility of ICT, the cost of the ICT and relevancy of the ICT influenced greatly adoption of ICT in the

clothing business. The findings concurred with Rodgers (2003) findings that understanding the complexity of ICT increases rejection rate of ICT adoption and that technological ease of use or learning, accessible ICT, flexibility of technologies to appropriate functionality necessary meeting user needs and preferences greatly influence the adoption of ICT in small and medium enterprises.

The study further found that 78%, of the respondents indicated that the viability of the available technology greatly influence the adoption of ICT in business, 75% indicated the features (characteristics) of the ICT greatly influence the adoption of ICT while 74% indicated that the size of the ICT was a technological factor that greatly influence the adoption of ICT in the organization.

The study further found that 68% of the respondents indicated that the palatability of ICT greatly influence the adoption of ICT while 65% indicated friendlier in usage greatly influence the adoption of ICT to a great extent. The finding was similar to Premkumar (2003) process of ICT adoption within clothing, SMEs depends on the characteristics of the marketed information systems or information technology systems themselves. These consist of several factors which include: - types, process, compatibility, user friendliness and popularity of implementing ICT system, quality of software available in the market and the costs of the ICT system (Foong, 1999; Caldeira & Ward, 2003).

Table 4. 11: Environmental Factors Influencing Adoption of ICT

Environmental Factors Influencing Adoption of ICT	Mean	Std dvt	Zscore
The characteristics of the available technology is adequate to adoption in business	4.42	0.45	-0.9081
The compatibility of the available technology is satisfactory for adoption to the business	4.57	0.35	0.00078
The complexity of the available technology is not a hindrance to the ICT adoption in the business.	4.49	0.61	-0.8324
The accessibility of technology is adequate for the adoption to the business.	4.63	0.16	1.8651
The technology elements have influence to the ICT adoption in the business.	4.61	0.34	3.9987

The study sought the extent to which technological elements influence adoption of ICT by cloth businesses in Nairobi. From the findings, the study established that the accessibility of technology was adequate for the adoption to the business influence adoption of ICT, that technology element and compatibility of the available technology is satisfactory for adoption to the business influence to the ICT adoption in the business to a very great extent as indicated by a mean of 4.63, 4.61 and 4, 57 with a standard deviation of 0.16, 0.35 and 0.34 respectively.

The study also found that the complexity of the available technology and the characteristics of the available technology as being adequate to adoption in business influence adoption of ICT in the cloth business to a great extent as indicated by a mean of 4.49 and 4.47 with a standard deviation of 0.61 and o.45 respectively. The Z score was found to be (Zscore=.0.00078) meaning it was on the mean. The Z score = 3.9987 indicated that most of responses on technology elements influencing adoption of ICT was at the mean of 4.57. This clearly indicated that by the

technological elements, had a significant influence on the adoption of ICT in clothes businesses in Nairobi.

4.5 Correlation analysis

Correlation analysis was used to establish the strength of association between variables as shown on Table 4.12.

Table 4. 12: Correlations Analysis

		Adoption of ICT	Technology availability	Technology complexity	Technology accessibility	Technology characteristics
Adoption of ICT	Pearson Correlation	1				
	Sig.(2-tailed)	0.001				
	N	75				
Technology availability	Pearson Correlation	.611*	1			
	Sig. (2-tailed)	.003				
	N	75	75			
Technology complexity	Pearson Correlation	.463*	.218	1		
	Sig. (2-tailed)	.003	.247			
	N	75	75	75		
Technology accessibility	Pearson Correlation	.603*	.471*	.463*	1	
	Sig.(2-tailed)	.002	.009	.010		
	N	75	75	75	75	
Technology characteristics	Pearson	.448*	.451	.463	.374	1
	Sig. (2-tailed)	.001	.009	.010	0.002	
	N	75	75	75	75	75

A correlation analysis was conducted to determine whether there existed a significant correlation between technological elements and adoption of ICT by cloth businesses. The study revealed a significant positive, significant correlation between technology availability and adoption of ICT in cloth businesses, r = 0.611 with P=0. 003 < 0.05. The finding was statistically significant as P< 0.05. This indicates that technology availability influence adoption of ICT in cloth businesses.

The study established that there existed a significant negative correlation between technological complexity and adoption of ICT in the cloth business as the correlation coefficient of r=0. 547, P=0. 01<0.05. This implied that high level of technological complexity would hinder adoption of ICT in businesses.

The study found that there existed a strong and positive correlation between technology accessibility and ICT adoption as Correlation coefficient r= 0.603, P=0.002<0.05. This implied that technology accessibility significantly influence adoption ICT in business

The study revealed a significant positive, significant correlation between technology characteristic and adoption of ICT in cloth business, r = 0.448 with P=0.001 < 0.05.The finding were statistically significant as P< 0.05. This indicates that technology characteristics motivate the cloth business in adopting ICT.

4.6 Business Organizational Factors

4.6.1 Influence of the Business Organizational factors to ICT Adoption

Table 4.13 shows that, the management part of the business organization was recorded to be highly influenced most of the organizations which were used for study towards the ICT adoption.

The second factor in the business organization was communication which was recorded by 37 participants followed by planning (20), business behavior (19), culture (14), human aspect and innovativeness (11), business change (9), managerial structure (8). There were no cases of influence by the attitude of the business organization which were recorded by the study participants.

Business Organizational factors

Table 4. 13: Business Organizational factors

	Frequency	**Percentages**
Business behavior		75
Human Aspect	66	61
Management	63	93
Communication	46	81
Culture	70	74
Change	81	86
Decision Making	95	88
Human Relations	55	58
Planning	79	84
Readiness	81	85
Innovativeness	84	89
HR Specialization	61	64
Managerial Structure	85	90
Open, Supportive	91	96
Flexible	66	70
Interrelatedness	68	72
Linkages – HR Skills	61	65

Competence	78	83
Attitudes	58	62
Readiness of the Organization	65	69

The respondents were requested to indicate the whether the given business factors influenced the adoption of ICT. From the finding 96% of the respondents indicated that open and supportive greatly influenced the adoption of ICT, 93% indicated management support, 90% indicated managerial structure, 98 % indicated innovativeness, 85% of the respondents indicated readiness for ICT greatly influence the adoption of ICT while 84% and 83% of the respondents indicated plans for ICT and competency as a factor that greatly influencing ICT adoption. The study also found that business behavior, culture, interrelatedness, flexibility and readiness of the organization greatly influence the adoption of ICT in organizations indicated by 75%, 74%, 72%, 70% and 69% of the respondents. The study further found linkages - HR Skills, HR Specialization, human aspect human relations as factors that greatly influence the adoption of ICI in business as indicated by 65%, 64%, 62%, 61%, and 58% of the respondents. This implied that Caldeira *et. al*. (2003) who found that ICT adoption by SMEs have revealed a number of organizational characteristics as potential determinants of the adoption process which includes SME strategies, business size, type of industry, information intensity, organizational culture and technological maturity. The finding supported Ramsay et al (2004) findings who asserted that it is well recognized that for SMEs to get the full benefit of the Internet and EB (Electronic Business), company and market structures may have to be re-invented and Love et al., (2001) who opined that SME workers and owners behavioral culture, organization behavior communicator change, planning, HR skills, HR competence, attitude, readiness, innovativeness and managerial structure of the organization greatly influence significantly on the adoption level

of ICT in business. The finding concurred with Qirim (2007) found that CEO's innovativeness was the only determinant of external-email adoption. CEO's involvement was found to be the only determinant of intranet adoption in New Zealand.

Environmental Factors Influencing Adoption of ICT

Table 4. 14: Environmental Factors Influencing Adoption of ICT

Environmental Factors Influencing Adoption of ICT	Mean	Std. deviation	Z score
The business organization structure is supportive to the ICT adoption in the business.	4.51	0.22	0.6501
The business organization strategies are adequate to ICT in the business.	4.50	0.34	0.00026
The business organization structure has an influence to the technology adoption in the business.	4.47	0.31	1.2645
The available Human Resource Competency is adequate to the adoption of ICT in the business.	4.03	0.44	-0.8712
The business organization has an influence to the technology adoption in the business.	4.61	0.53	1.3987

The respondents were requested to indicate the extent to which business factors influence adoption of ICT in cloth businesses. From the findings, respondents indicated that business organization, business organization structure being supportive of the ICT adoption in the business and adequate business organization strategies influenced technology adoption in the business to a very great extent as indicated by a mean of 4.61, 4.51, and 4.50 with a standard deviation of 0.53, 0.22 and 0.34 respectively. The study also found that business organization structure and the available and adequate human resource competency influenced technology

adoption in the cloth business to a great extent as indicated by a mean of 4.47 and 4.03 with a standard deviation of 0.31 and o.44 reactively. The Z score was found to be (Z score =. 0.00026) meaning it was on the mean and deviation from the standard deviation zero, indicating that most of cloth business responses fell above the mean of 4.50. This clearly indicated that business factors influence adoption of ICT to a very great extent.

4.6.2 Correlation between Business Organizational Factors and ICT Adoption

Correlation analysis was used to establish the strength of association between variables as shown on Table 4.15.

Table 4. 15: Correlations Analysis on Business organization factors and ICT Adoption

		Adoption of ICT	**managerial structure**	**Readiness**	**Organization culture**	**T HR competency**
Adoption of ICT	Pearson Correlation	1				
	Sig.(2-tailed)	0.021				
	N	95				
managerial structure	Pearson Correlation	.517	1			
	Sig. (2-tailed)	.0004				
	N	95	95			
Organizational Readiness	Pearson Correlation	.463	.218	1		
	Sig. (2-tailed)	.0011	.247			
	N	75	75	75		
Organization culture	Pearson Correlation	.363	.471	.463	1	

	Sig.(2-tailed)	.002	.009	.010		
	N	95	95	95	95	
HR competency	Pearson Correlation	.287	.451	.463	.374	1
	Sig. (2-tailed)	.0002	.009	.010	0.002	
	N	95	95	95	95	95

A correlation analysis was conducted to determine whether there existed a significant correlation between Business organization factors and adoption of ICT by cloth businesses. The study revealed a significant positive, significant correlation between managerial structure and adoption of ICT in cloth businesses, r = 0.517 with P=0.021< 0.05.The finding were statistically significant as P< 0.05. This indicates that managerial structure. The study established that there existed a significant positive correlation between organizational Readiness and adoption of ICT in the cloth business as the correlation coefficient of r=0. 463, P=0. 0011<0.05. This implied that lack of organizational readiness for ICT would hinder adoption of ICT in businesses.

The study found that there existed a strong and positive correlation between Organizational culture and ICT adoption as Correlation coefficient r= 0.363, P=0.002<0.05. This implied that organization culture significantly influence adoption ICT in business. The study revealed a significant positive, significant correlation between Human Resource competency and adoption of ICT in cloth business, r = 0.287 with P=0.001 < 0.05. The finding was statistically significant as P< 0.05. This indicates that high levels of employee's competency would positively cloth business in adopting ICT.

4.7 Environmental (External) Factors

The study findings presented in table 4.16 shows that, government policies and regulations had the highest frequency of those who indicated that their organizations had been influenced

towards ICT adoption. This was followed by competitive pressure which was reported by 38 organizations, the social factors which was recorded by 32 and customs in the surroundings which was recorded by 6 organizations. The least mentioned were the factors of value/culture of the country, tastes and habits which were recorded by only 1 organization each.

Table 4. 16: Environmental (External) factors

	Frequency	Percentages
Government Policies/Regulations		98
Competitive Pressure	66	95
Social Factors	63	82
Habits	46	70
Tastes	74	78
Customs	81	86
Values Or Culture Of The Country	95	88

The respondents were requested to indicate the whether the given technological elements influenced the adoption of ICT. From the findings, 98% of the respondents indicated that government and policies and regulations greatly influence the adoption of ICT in business, 95% indicated competitive pressure, and 88% indicated that the culture of the country greatly influences the adoption of ICT. The study further found that 86%, 78% and 70% of the respondents indicated that customs, taste and habits as environmental factors that greatly influence the adoption of ICT in business. This implied that market, the firm's competitors and the regulatory environment and other external pressure is primarily from customers' suppliers and employees influencing the organization's decision to assimilate an innovation which eventually impacts the organizational performance and hence its capacity to cope with stiff

competition in the market. The findings concurred with Venkatesh *et. al*, (2012) who found that government policy, regulation and policy greatly influence the adoption of ICT in organizations.

Table 4. 17: Environmental Factors Influencing Adoption of ICT

Environmental Factors Influencing Adoption of ICT	**Mean**	**Std dev.**	**Z score**
The government regulatory policies support technology adoption in the business	4.54	0.75	1.3490
The competition/market pressure influence the ICT adoption to the business	4.36	0.35	2.6841
The prevailing country's economic conditions affect ICT adoption in the business	4.35	0.33	1.5643
The social factors contribute to the technology adoption in the business	4.21	0.30	-.3987
The business adopts new technology easily that seems agreeable with the existing society's cultural beliefs and values (internalization)	3.50	0.85	0.6381
Business adopts new technology that appears popularly acceptable by majority members of the society easily (compliance with others)	4.17	0.69	0.0012
Business adopts new technology is influenced by the desire to please other important members of the society	3.46	0.12	1.7743
Business adopts new technology in order to maintain a strong and healthy relationship/connection with other important members of the society (identification with others)	4.47	0.40	1.3254
The business adopts new technology quickly that appears popularly acceptable by majority members of the society	4.61	0.56	2.5121
The external forces influence the ICT adoption rate in the business	4.50	0.16	1.0032

The respondents were requested to indicate the extent to which environmental factors influence adoption of ICT. From the findings, respondents indicated that the business adopted new technology quickly that appeared popularly acceptable by the majority members of the society, that the government regulatory policies support technology adoption in the business and that the external forces influence the ICT adoption rate in the business to a very great extent as indicated by a mean of, 4.61, 4.54 and 4.50 respectively. The respondents indicated that business adopt new technology in order to maintain a strong and healthy relationship/connection with other important members of the society, competition/market pressure, the prevailing country's economic conditions and social factors influence the ICT adoption in business to a great extent as indicated by a mean of 4.47, 4.36, 4.35 and 4.21 respectively. The study further business adopted new technology that appears popularly acceptable by the society, the influence of society's cultural beliefs and values influence adoption of ICT to a great extent as indicated by a mean of 4.17, 3.50 respectively. The study found that business adopt new technology was influenced by the desire to please other important members of the society to a moderate extent as indicated by a mean of 3.46.

The Z score was found to be (Z score=0. 0021) meaning it was on the mean and deviation from the standard deviation zero. The Z score =2.6841 indicate that most of businesses' responses fall above the mean as the variance from the mean on environmental factors issues was high and this was a clear indicator that environmental factors plays a critical role in influencing enterprises adopting ICT.

4.8 Correlation between environmental factors and ICT adoption Level

According to the study results in table 4.18, the Government policies, Competitive pressure,

Habits, Tastes and Customs were found to have a negative correlation with the ICT adoption which were all significant. The forces of Social factors and the Values/culture has a high positive correlation with the ICT adoption, which were also found to be significant as all the significant values were found to be less than 0.05 testing at the 5 % level of significance.

Table 4. 18: Correlation Analysis between environmental factors and ICT adoption

		Adoption of ICT	**Government regulation**	**market structure**	**Economic conditions**	**Social factors**
Adoption of ICT	Pearson Correlation	1				
	Sig.(2-tailed)	0.021				
	N	95				
Government regulation	Pearson Correlation	-.515*	1			
	Sig. (2-tailed)	.0004				
	N	95	95			
Market structure	Pearson Correlation	.412*	.212	1		
	Sig. (2-tailed)	.001	.247			
	N	95	95	95		
Economic conditions	Pearson Correlation	.437*	.471*	.463*	1	
	Sig.(2-tailed)	.002	.009	.010		
	N	95	95	95	95	
Social factors	Pearson	.453*	.451	.463	.374	1
	Sig. (2-tailed)	.0002	.009	.010	0.002	
	N	95	95	95	95	95

A correlation analysis was conducted to determine whether there existed a significant correlation between organizational environmental factors and adoption of ICT by cloth businesses.

The study revealed that there existed a significant positive, significant correlation between

Market structure and adoption of ICT in cloth businesses, r = 0.515 with P=0.004< 0.05.The finding was statistically significant as P< 0.05. This indicates that market culture increase n competition high business regulation and price change significantly influence adoption of ICT to a very great extent.

The study established that there existed a significant negative correlation between government regulation and adoption of ICT in cloth business as correlation coefficient of r=0.515, P=0.0004<0.05.This implied that government regulations and restrictions for ICT would hinder adoption of ICT in businesses. The study found that there existed a strong and positive correlation between economic conditions and ICT adoption as Correlation coefficient r= 0. 437, P=0.002<0.05. This implied that economic conditions such as increase in inflation rate and introduction of monetary policy in the market for instance would significantly influence adoption ICT in business.

The study revealed a significant positive, significant correlation between Human Resource competency and adoption of ICT in cloth business, r = 0.453 with P=0.002 < 0.05.The finding was statistically significant at P< 0.05. This indicates that high levels of employee's competency would positively cloth business in adopting ICT.

Regression Analysis on Technology Elements on ICT Adoption Level

Table 4.20 gives the regression coefficients for the independent technological factors influencing

4.9 Regression Analysis

The study sought to establish whether there existed a significant relationship between the technological element and adoption of ICT in clothing's business.

$Y= a + \beta_1X_1 + \beta_2X_2+ \beta_3X_3 + \beta_4X_4 + e$

4.10 Model Summary

Table 4. 19: Model Summary on influence of Technology Elements on ICT Adoption

Model	R	R Squared	Adjusted R Squared	Sig
1	.79(a)	.624	.619	0.01

A Predictors: (Constant), Technology availability, Technology complexity, Technology accessibility, Technology characteristics

Dependent: Adoption of ICT

The model column of multiple models was reduced to a single regression by SPSS command and with a model indicating 1 implied that the there was one linear model being used to determine the existed a significant relationship between technological elements and adoption of ICT in the clothing business

R is the square root of R-Squared. R is the correlation between the observed and predicted values of dependent variable. This implies that there was association of 0.79 between technological element and adoption of ICT. R-Squared is the proportion of the variance in the dependent variable of Adoption of ICT that was explained by variations in the, Technology availability, Technology complexity, Technology accessibility, Technology characteristics**.** This implied that there was a variance of 62.4% between variables in general. However this does not reflect the extent to which any particular independent variables was associated with the adoption of ICT adoption of ICT in clothing businesses.

Adjusted R^2 is called the coefficient of determination which indicates how technological element

varies with variation in, Technology availability, Technology complexity, Technology accessibility, Technology characteristics**.** The study established that there existed a significance positive variation between technological element, technology availability, technology complexity, technology accessibility, technology characteristics and adoption of ICT. r= 0.619, P=0.01 < 0.05.

4.11 Analysis of variance for the Technological Elements and Adoption of ICT in clothing Businesses

Table 4.20 shows the regression, residual and total variance

Table 4. 20: ANOVA Model on influence of Technology Elements on ICT Adoption

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	2.642	8	.537	4.871	0.01(a)
	Residual	4.511	87	.049		
	Total	7.153	95			

A Predictors: (Constant), Technology availability, Technology complexity, Technology accessibility, Technology characteristics

Dependent: Adoption of ICT

The study established that there existed a significant goodness of fit between variable as F=4.871, P=0.01< 0.05. The calculated F=4.871 far exceeds the F-critical of 1.707.This implied there the level of variation between technology availability, technology complexity, technology accessibility, technology characteristics and adoption of ICT was positive and significant at 95% confidence level.

4.12 Coefficients Estimate of the Variance

Table 4. 21: Coefficients on influence of Technology Elements on ICT Adoption

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	7.000	.467		4.120	0.01
	Technology availability	3.838	.635	1.915	2.034	0.02
	Technology complexity	-2.749	426	1.712	4.313	0.01
	Technology accessibility	1. 678	.322	.645	2.906	0.03
	Technology characteristics	1.567	.231	.559	2.769	0.04

A Predictors: (Constant), Technology availability, Technology complexity, Technology accessibility Technology characteristics

Dependent: Adoption of ICT

$Y = 7.000 + 3.838X_1 + 2.749X_2 + 1.678X_3 + 1.567X_4$

From the above regression model, it was found that adoption of ICT in clothing business would be at 7.000 holding, technology availability, Technology complexity and Technology accessibility Technology characteristics constant at zero (0). The study established that there existed a significant positive relationship between Technology availability and adoption of ICT in clothing businesses as r= 3.838, t=2.034, P= 0.02<0.05. The study established that there existed a significant negative relationship between technological complexity sting and adoption of ICT in clothing business as r=-2.749, t=4.313, P=0.03<0.05. The findings clearly indicated that complexity of technology hinders adoption of ICT in small and medium enterprises. The study revealed that there existed a significant positive impact between technological accessibility and adoption of ICT in the clothing business as r= 1.678, t=2. 906, P= 0.03<0.05. This clearly indicated that an increase in accessibility of technologies would increase in business

adoption of ICT to a large extent. The study further revealed that there existed a positive relationship between technological characteristic and adoption of ICT by SMEs in the clothing sector as r=1.567, t=2.769, P= 0.04<0.05. This clearly indicated that there existed a positive relationship between the influence of technological element and adoption of ICT in business enterprises.

4.13 Technological factors influence on ICT adoption

The study indicated that, the majority of the organizations had not found the great influence of the size of ICT infrastructure when trying to adopt the use of ICT in their operations. The correlation between the size and the ICT adoption level of the organizations was found to be low which was insignificant. A great influence in ICT adoption was found to exist due to the technological elements which were found to be friendlier to the business operation. The relationship indicated a very high positive correlation between the levels at which the technological elements were friendlier and ICT adoption level of the organizations. Further, the palatability of the technological elements was found to have no great influence in the ICT adoption as the majority of the participants indicated that they had not experienced its influence in the past three years. The correlation between the palatability and level of adoption was found to be highly positive which was also significant. The study as well found out that, there was no significant influence by the amount charged for the ICT adoption in organizations. This had a very low negative correlation that was insignificant between the variables. The complexity of the technological elements had a great influence to the ICT adoption as 92.5% of the participants recorded that their organizations had experienced much influence due to the complexity of the elements. The correlation between the complexity of the technological elements and the level of

ICT adoption in organizations was found to be positive which also was significant. The compatibility of the technological elements had no influence to most of the organizations in the adoption of ICT where the correlation between compatibility and adoption level of ICT was found to be very low and insignificant.

The study findings also illustrated that; majority of the organizations had been influenced by the flexibility of the technological elements in the adoption of ICT. The correlation between flexibility and adoption level of ICT was found to be very high which was positive with a significant value less than .05 at the 5 % level thus there is a significant positive correlation between the flexibility of the technological elements and the level of adoption of ICT. Also, availability of technology to the organizations had influenced the adoption of ICT. Testing the correlation between availability and adoption level of ICT was found to be negative with a significantly less than .05 at the 5 % level thus there is a significant negative correlation between the availability of the technological elements and the level of adoption of ICT.

The majority of the organizations had not been influenced by the characteristics of the technological elements in the adoption of ICT. This had a correlation which was insignificant. Also, the majority of the organizations had not been influenced by the usability of the technological elements in the adoption of ICT. Testing the correlation between usability and adoption level of ICT was found to be very low which was significant. The viability of the available technology was also found to have had influenced the adoption of ICT in clothing organizations. This as well had a positive correlation which was also significant.

The study results show that there is a positive relationship between combined technological factors and ICT adoption level where ICT adoption level can be accounted for by the

technological elements. The study results were found to be statistically significant, hence can be relied on to explain the ICT adoption level in the clothing industry. Further, results show that there is a positive effect between the characteristics of the available technology model and compatibility of the available technology. The negative effect is recorded for the technological factors of; complexity of the available technology and Accessibility of technology. The study reports statistically significant results for all the independent technological elements. The analysis further reveals that level of ICT adoption increases when technological elements increase by one (1) point when other variables are kept constant.

The research findings of this study are consistent with the previous findings that consistently identified technological factors as a major determinant for successful technological innovation adoption. (Kuan and Chau 2001; Gonc et al 1999). Premkumar (2003) argues that there are very few studies that have examined the impact of technological characteristics in the context of manufacturing business. Technology availability, according to Saloner. G & Shepherd A (1995) from their study confirmed that the value of an ATM network increases with the number of available ATM locations, and the value of a bank's network to a customer will be determined in part by the final network size of the bank. As a result, assuming that a bank can extract part of the consumer surplus, a bank will adopt ATM more rapidly if it expects to have a larger number of ATM Locations in equilibrium, which implies that it network will have more value for its consumers. While technological compatibility, according to Rogers (1983) Diffusion of Innovation Theory depicts compatibility as a driver of the decisions to adopt a new technology. Technological compatibility can be defined as the extent (or ease) with which new Technological Infrastructure, Culture, Values, and preferred work practices of an organization (Beatty et al 2002). Several other prior studies found that technological compatibility significantly affected

then adoption of the new technology adoption. (Hong &Zhu 2006; Seft et al 2008). This study puts forward technological factors as major determinants of ICT adoption in the clothing SMEs.

Regression Analysis between Business organization Factors and Adoption of ICT

The study sought determines whether there existed a significant positive relationship between business organization factors and adoption of ICT.

Table 4. 22: Model Summary between organizations Factors and Adoption of ICT

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.812(a)	.659	.647	0.34	1.741	6	7.207	8.191	.001(a)

A Predictors: (Constant) Managerial structures, organization Readiness, Organization culture and HR competency

b. Dependent: Adoption of ICT

From the model summary results, the study established that there existed a significant variation between variables. R-Squared is the proportion of the variance in the dependent variable of the Adoption of ICT that was explained by variations in the, managerial structures, organization readiness, organizational culture and human resource competency**.** This implied that there was a variance of 62.4% between variables in general. However, this does not reflect the extent to which any particular independent variables were associated with the adoption of ICT adoption of ICT in clothing businesses.

From the regression model summary analysis, the study established that there existed a significant positive variability between independent variable business organization factors

Managerial structures, organization Readiness, Organizational culture and HR competency and dependent variable adoption of ICT in the clothing business as $R^{2=}$ 0.659, Adjusted R^2 =0. 647, F=6, P=. 001<0.05.

ANOVA (b)

Table 4. 23: ANOVA (b), organizations Factors Influence on Adoption of ICT

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	3.841	20	.307	5.191	0.01(a)
	Residual	33.159	75	.059		
	Total	37.000	95			

A Predictors: (Constant) Managerial structures, organization Readiness, Organization culture and HR competency

Dependent: Adoption of ICT

This study determined that the F - test to determine whether the model had a good fit for the data. The F-Test (F=5.191, P=0.01< 0.05) indicated that the model formed between business organizational factors and adoption of ICT by organization influence had data with significant goodness of fit. The study established that there existed a significant strong positive variation between predictor values Managerial structures, organization Readiness, Organization culture and HR competency of dependence variable at 95 % confidence level.

Coefficients (a)

Table 4. 24: Coefficients (a) For organizations Factors and Adoption of ICT

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.768	.275		3.640	0.01
	Managerial Structure	0.883	.405	.857	2.931	0.03
	Organizational Readiness	0.717	.546	.722	2.803	0.04
	Organizational culture	0.868	.520	.791	1.906	0.02
	HR competency	0.791	.690	.729	1.672	0.01

A Predictors: (Constant) Managerial structures, organization Readiness, Organization culture and HR competency

Dependent: Adoption of ICT

The resultant study model was,

$Y = 2.768 + 0.883 X_1 + 0.717X_2 + 0.868X_3 + 0.791X_4$

The study established that there existed a significant positive effects of adoption of ICT in businesses holding business factors constant at zero as r= 2.768, t=3.640, P=0.01<0.05. From the regression coefficient analysis, the study established that there existed a significant positive relationship between managerial structure and adoption of ICT in clothing businesses as r=0.883, t=2.93, P=0.03< 0.05.

The study also established that there existed a significant positive relationship between Organizational Readiness and adoption of ICT in clothing SMEs in Kenya as r= 0.717, t= 2.803, P= 0.04 <0.05. Therefore, organizational readiness through training of employees, allocating sufficient resources, employing IC experts would significantly influence adoption of ICT to a great extent.

The study also established that there existed a significant positive relationship between Organization culture and adoption of ICT in the clothing business as r=0.868, t= 1.906, P=0.02<0.05. Therefore, organization culture would lead to positive impact adoption of ICT. This implied that organization culture defined by the competency of management and employees, supporting of the top management, attitude of management and effective job designing as well as compensation influence adoption of ICT to a very great extent. The study further establish that there existed a significant positive relationship between HR competency

and adoption of ICT as r=0.791, t= 1.672, P=0.01<0.05. Therefore, HR competency factors which involved acquisition of IT skills and knowledge among human resource, training and learning which positively influence adoption of ICT in organizations. The finding led to reject of the hypothesis that the study sought to test; that there is no relationship existing between business, organizational factors and adoption of ICT by clothing retailers in the Nairobi County (Kenya).

The findings concurred with Kotelinkov, (2007); Ramsey et al (2004); Loise et al (2001); Drew, (2003)), findings who found that the limited ICT literacy level of SMEs, owners/managers hinders their ability to choose the appropriate technology and understand the concrete benefits it can bring to their business. Limited ICT literacy of employees in SMEs hinders ICT adoption. Dorfman, M (1987) also argues that there is a positive role of firm size and market share in determining the level of innovations as the firms that are large or have large market shares .They are more likely to undertake innovation because appropriability (the benefits of new technology adoption) is higher for large firms and because the availability of resources needed for investments in a new technology is greater, the potential risk associated with the use, development and marketing of a new technology and scale -enhancing new technology

Hannan & McDowell (1984) also found that market concentration, bank size, and market conditions all significantly affected the adoption of Automated Teller Machine (ATM) by U.S. banks during the period 1971-1979.The market structure technology also has an adoption the new technology also has an impact on its adoption (Hall & Khan 2002). In the case of mobile telephony, this has been shown by two different sets of authors Gruber H. & VerbovenF (2001) and Parker P & Roller L (1997).

Rogers (1995) also in his study concluded that individual characteristics, internal and external organization structure characteristics determine the rate of ICT adoption of the SMEs. These findings were in line with the results of this study, which indicate that, the management part of the business organization had highly influenced most of the organizations towards ICT adoption. Communication was the other factor in the business organization which was also found to be significantly influencing ICT adoption followed by planning, business behavior, human aspect and innovativeness and the managerial structure. These findings were in line with the arguments by Ghobakhloo et. al. (2011) which indicated that competitive pressure would affect the adoption of new technologies when SMEs perceive that these technologies will possibly support their competitive position, therefore, SMEs adopt ICT to gain competitive advantage.

4.14 Organizational factors' influence on ICT adoption

On testing the relationship between the organization of the business and ICT adoption, a positive effect was recorded for the majority of the business organization factors; the organization structure, organization strategies, organization culture and the human resource competency. Only one factor recorded a negative effect; the general organization of the business.

The study found out that, the management part of the business organization had highly influenced most of the organizations towards ICT adoption. The second factor in the business organization was communication which was also found to be significantly influencing ICT adoption followed by planning, business behavior, human aspect and innovativeness and the managerial structure. There were no cases of influence by the attitude of the business organization which were recorded by the study.

The study reports statistically significant results for all the independent organizational factors. The coefficients indicate that level of ICT adoption increases by 2.929 variances when the business organization factors increases by one (1) point other variables kept constant. The regression analysis results for the business organization factors and ICT adoption indicate that the multiple factors of technological elements have a significant effect on the ICT.

The research findings were consistent with Cloete, et al (2002) study of SMEs adoption of e-commerce in South Africa found that adoption is heavily influenced by factors within the organization; lack of access to computer software and hardware, costly telecommunications, security concerns, legal issues, low knowledge level of management and employees. El-Nawawy and Ismail (1999) found that the main factors determining adoption rates of ICT in Egypt were awareness, education, market size, E-commerce infrastructure, telecommunication, infrastructures, financial infrastructure, legal systems, and the government's role, pricing structure, social and physiological factors. Schmid et al (2001) state that in Argentina the main determinant of ICT adoption rate are aware, access to hardware, infrastructure, organizational culture and financial issues.

Regression Analysis between Environmental factors and adoption of ICT

4.15 Model Summary

The study sought to determine whether there existed a positive relation between environmental factors and adoption of ICT in clothing businesses.

Table 4. 25: Model Summary of Analysis between Environmental factors and adoption of ICT

Model	R	R Squared	Adjusted R Squared	Std. Error of the Estimate	Sig F
1	.71(a)	.501	.5.001	0.29	0.0.0012

A Predictors: (Constant) Government regulation, Market structure, Economic conditions and Social factors

Dependent: Adoption of ICT

The study found there existed a positive correlation between the environmental factors and adoption of ICT as r= 0.79, P=0.0012 <0.05. The study established that there existed significant positive variations between government regulation, market structure, economic conditions and Social factors**.** This implied that there was a variance of 50.1% between variables in general. However, this does not reflect the extent to which any particular independent variables were associated with the virtual team performance.

Using the Adjusted $R^{2,}$ coefficient of determination in determining whether there existed a significant positive or negative variation between environmental factors and adoption of ICT in clothing businesses as r= 0.5001, P=0.0012 < 0.05.

4.16 Analysis of variance for Environmental factors and Adoption of ICT

Table 4.26 shows the regression, residual and total variance.

Table 4. 26: ANOVA (b) for Analysis between Environmental factors and adoption of ICT

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	22.642	8	.537	5.871	0.014 (a)
	Residual	54.511	87	.049		
	Total	77.153	95			

A Predictors: (Constant) Government regulation, Market structure, Economic conditions and Social factors

Dependent: Adoption of ICT

The study established that there existed a significant goodness of fit between variable as F=4.871, P=0.01< 0.05. The calculated F=4.871 far exceeds the F-critical of 1.707.This implied there the level of variation between independence and a dependent variable was significant at 95% confidence level.

4.17 Coefficients Estimate of the Variance

Table 4.27 shows coefficients estimate of the variance obtained.

Table 4. 27: Coefficients (a) for Analysis between Environmental factors and adoption of ICT

Model		**Unstandardized Coefficients**		**Standardized Coefficients**	**t**	**Sig.**
		B	Std. Error	Beta		
1	(Constant)	4.000	.467		4.120	0.01
	Government regulation	2.568	.635	1.915	12.011	0.02
	Market structure	2.121	426	1.712	4.313	0.01
	Economic conditions	0. 775	.322	.645	2.906	0.001
	Social factors	0.484	.231	.559	2.769	0.021

a. Predictors: (Constant) Government regulation, Market structure, Economic conditions and Social factors

Dependent: Adoption of ICT

$Y = 4.000 + 2.568X_1 + 2.121X_2 + 0.775X_3 + 0.484X_4$

From the above regression model, it was revealed that adoption of ICT in clothing business would be at 4.000 holding, government regulation, market structure, economic conditions and

Social factors constant at zero (0). The study established that there existed a significant positive relationship between government regulations and adoption of ICT in business enterprises as r= 2.568, t=12. 011, P= 0.02<0.05. This implied that efficient government regulations would positively influence adoption of ICT by SMEs in clothing businesses.

The study established that there existed a positive relationship between market structure and adoption of ICT in organizations as r=2.121, t=4.313, P=0.01<0.05. This clearly indicated that existed of efficient market structures such as increase cost of technologies, increase in competition and an increase in IT structure, customer demand and change in customers taste, advertising and marketing would influence adoption of ICT to a great extent.

It established that there existed a positive significant relationship between economic conditions and adoption of ICT in clothing businesses as r= 0. 775, t=12.906, P= 0.001<0.05. The study found that an increase in social factors would significantly influence adoption of ICT by enterprises dealing with clothing products as r=0.484, t=2.769, P= 0.021<0.05. The study also illustrated that, the environmental factors such as the government policies, competition, industry market structure, social dynamics, social internalization, social compliance, social identification, popular acceptability and the organization's desire to please others in the society have significant effects on ICT adoption in the clothing industry. The government policies and regulations had highly influenced ICT adoption by the organizations. This was followed by competitive pressure, the social factors and customs in the surrounding of the organizations.

The research findings indicated that the regulatory environment and government institutes have powerful effects on technology adoption as Hall & Khan (2002) also found in their study. Several other empirical studies in the health care sectors have highlighted the role of regulation

in this sector on adoption of the new technology. This includes a study by Baker L (2001) confirmed the effects of the health insurance on the adoption of new medical procedures. Cutler & McClellan (1996) also found evidence for the positive effect of a general insurance environment in adoption decisions. Environmental regulations directly affect adoption because in many industry regulations will either prohibit or require the use of certain technology or production method (Hall & Khan 2002). For example, Gray. W and Shadbeigian, R. (1998), found that changes in US environmental regulation during the 1970's and 1980, affected the technology choice of firms in the paper and pulp industry. Mowery D, and Rosenberg (1981) argued that the rapid diffusion of technological innovation in U.S. commercial aircraft industry to U.S. airlines during the Mid-twentieth Century was due to, in part, the actions of the regulatory agencies, first the Post Office and then the Civil Aeronautics Board. The findings are also similar to those of Mazman et al, (2009) which indicated that, there are social factors that influence the way an individual internalizes the reference group, subjective culture and interpersonal agreements made with others in a specific social situation.

This study results are also in line with the studies of Levy and Powell (2005), ECIS (2010) and that of Storey and Sykes (1996) which support that the external forces affect the adoption of some business strategies towards achievement of the business goals of which technology was a factor of their focus. Levy and Powell' s study emphasized on competition, which they argued that a competitor is a firm that "leads the customer to value your products less where you have the competitor's product than when they only have yours". ECIS indicated that, the competitive environment in which the SMEs operate affects its chance for survival, thus an organization should look for a strategy towards dealing with competition. Storey and Sykes concluded that, many SMEs are highly influenced by market uncertainties, operate in a classic, perfect

competition and tend to be graceful takers thus the need to strategize their operations through modern technologies.

4.18 Developing a new framework of ICT adoption

There is today an increasing consciousness that technology knowledge both theoretical and practical and how ideas move and become modified in the course being used by people and groups to accomplish certain purposes, experience a lot of frustrations. There is a contention that the problem of making productive use of new technological innovation is essentially a phenomenological issue that is one of understanding how people think about technology in relation to their lives and interests and how thoughts lead to human action (Cochran, 1980). Technological application is a problem only for people who paid for it and do not get a return on their investment (Eveland, 1986). In SMEs, owner / manager who initiates and implements the use of new technology they must establish a clear goal for their ventures (Hostage et al, 2004). To move forward, the owners/managers need to be enthusiastic, passionate and a firm believer of the benefits of ICT (Jones, 2004). The manager / owner makes most of the critical decisions.

The management evaluates the need for the adoption by considering the cost benefits effects associated with the ICT in the organization. This concept tarries with the findings by Mehrtens et al (2001). According to his findings, the internet adoption model comprises three factors - perceived benefits, organizational readiness and external pressure. The perceived benefits are determined by efficiency, effectiveness and improved image with the use of the internet. Organizational readiness for internet adoption is personified in the SME owner and also determined by the adequacy of the infrastructure and external pressure in primarily from customers, suppliers and employees.

Reflecting on the previous findings and this study's findings, although it is important to study the determinants and effects of ICT as a strategic tool for clothing SMEs, there is a further value in understanding on how the managers/ owners of clothing SMEs would have an effective framework of implementing ICT in their business organizations. The framework for ICT adoption is an approach which shows the different roles and stage in the ICT adoption process in an organization with regard to the study findings. This is an implementation strategy for effective utilization of ICT by the clothing SMEs.

The proposed framework gives the adoption channel and the main steps followed in the adoption of the ICT in SMEs. The initial stages of ICT adoption start from the idea with the management of SMEs and their stakeholders. The management evaluates the need for the adoption by considering the effects associated with the ICT on the organization. Also, the management seeks information about the ICT application in their enterprise from relevant personnel equipped with ICT knowledge. The decision is then made by the management on whether to initiate the use of ICT in their enterprise after the analysis of the collected information. The flow diagram below represents the adoption channel of ICT in SMEs:

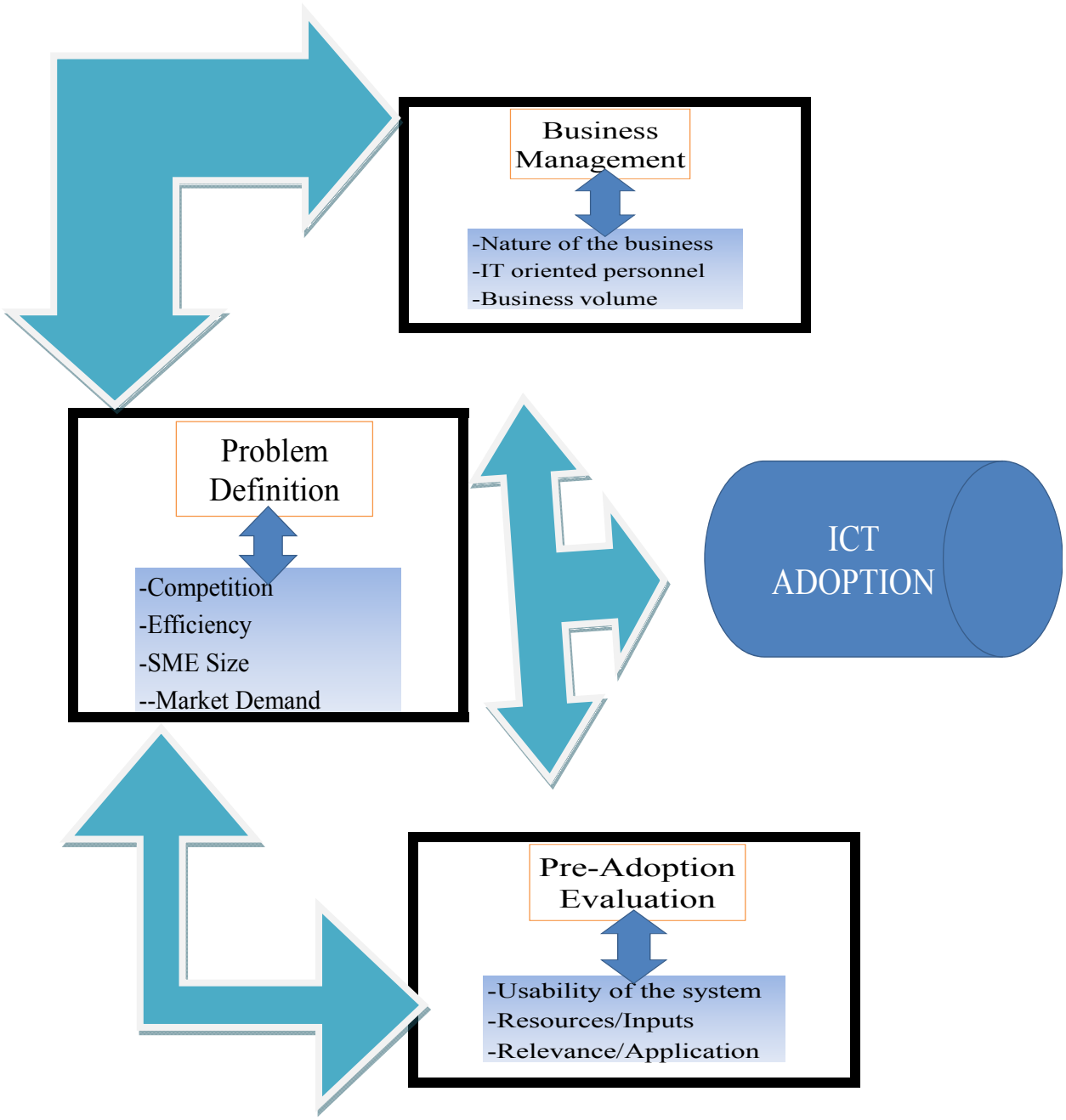


Figure 4. 3: ICT Adoption Model (Author, 2014)

Proposed Framework of Adoption Process

(i) Current challenges in the existing ICT adoption process.

The current ICT adoption process according to Koteinikov (1990), Moore (1999) and Bridges (2006) has four stages / steps, these are; awareness stage, consideration stage, acceptance or

adoption stage and innovation stage. The business managers/owners in this study identified the areas of ICT system implementation as the areas they face most difficulties.

The business owners/managers identified and sought to adopt ICT for the purposes of mitigating the current business challenges. From the research the current adoption challenges identified by the business managers/owners include complexity of technology, flexibility, availability and viability of the new technology. Organizational barriers include management, attitude, management structure and communication, business behavior, HR competencies and innovation organization structure, Organization strategies and organization culture. The external factors include government policies and regulations, market competition pressure, industry and market structure, social dynamics like social internalization, social compliance, social identification, popular acceptability and desire to please others in the society.

The influence of social dynamics in the adoption process is an opinion, not addressed adequately in current frameworks developed by Tornatzky and Fleischer (1990).

(ii) Effects of the current challenges of the ICT adoption by Smits.

The research identified advantages of ICT adoption as follows; cost reduction, speed and reliable communication between and within business performers facilitates management and organization of the business access to market information and the identification of new business opportunities.

The possible weakness identified were lack of capacity, poor ICT infrastructure, poor financing, monitoring and evaluation, strategies, lack of leadership in area by managers negative

perception, attitude (technophobia), per outlet, poor or outdated government policies and regulation, poor network infrastructure and social dynamics.

(iii) Review of previous models/existing frameworks for ICT adoption by SMEs.

In this study, information is reviewed and systematically organized in a manner that best fits the needs that arise during new technology system execution. This is done with a view that ICT adoption process starts from an idea of the management of SMEs and stakeholders. They evaluate the need for the adoption by considering the cost benefit effects associated with ICT adoption.

The findings of this research observed from review of existing models suggested the following specific functions as necessary for ICT adoption; ICT human capacity building to improve on skills and competency. The organization should ensure that the personnel is rich in computer knowledge through sponsoring seminars which will enable their personnel acquire the available knowledge which will aid in improving their competiveness and innovativeness; leadership coordination and partnership; improving of ICT infrastructure and accessibility; put in place proper policies and legislative framework to accelerate / facilitate adoption rate and financing, monitoring and evaluation framework to improve ICT performance.

(iv) Proposition of a suitable ICT adoption model by SMEs

The review of available literature on ways of ICT adoption by SMEs was done with a view to create new information thus adds value to the process. New relationship and production form a base for proposition of an appropriate and suitable model. It is worth noting that management of SMEs is key component in the success of adoption process. Secondly, information available for

strategic solution is essential for decision making whether to adopt or not adopt the news technology. In proposing a suitable model for ICT adoption by the SMEs, the requirement of having an effective ICT system adopted by SMEs must consider the following; the ICT human capacity building leadership and partnership coordination friendly government legislatives and policies frameworks infrastructure ICT accessibility proper ICT financing monitoring and evaluation strategies.

(v) Feedback mechanism

Feedback from the business owners/managers and other interested parties on the information created to add value on ICT adoption process is shared, reviewed and analyzed. Follow up on any new information received is carried out.

Components of framework of adoption

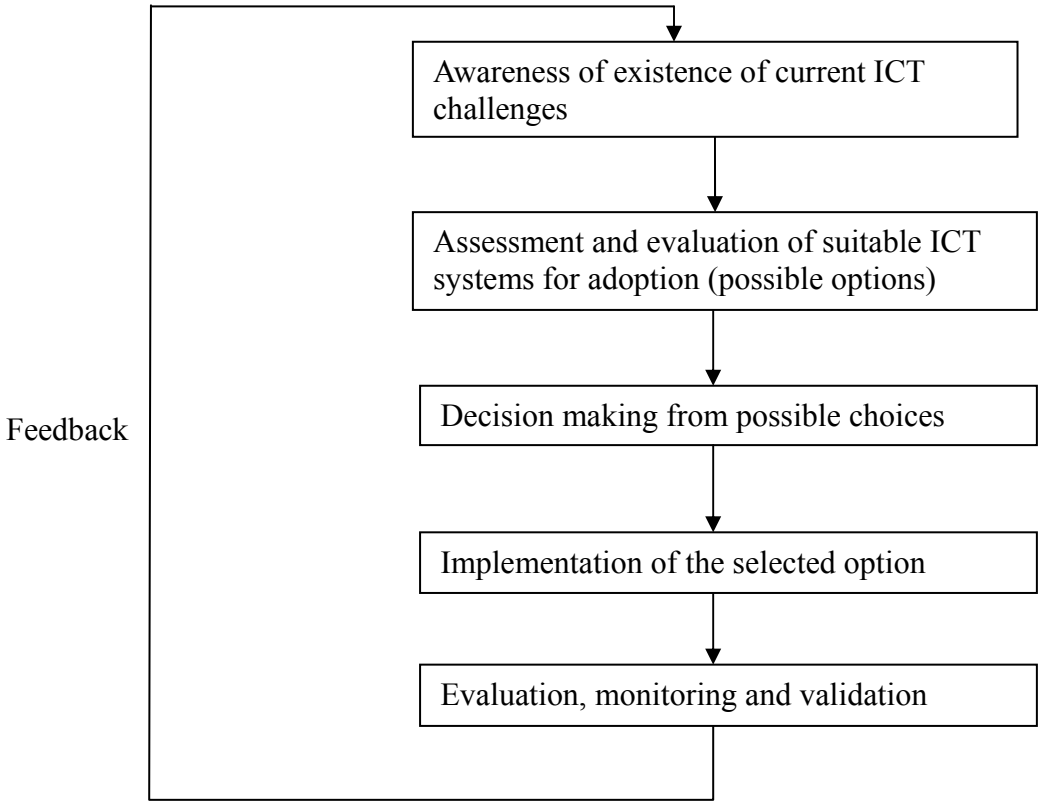


Figure 4. 4: Proposed framework of adoption process (Self, 2014)

4.19 Framework Implementation

The implementation framework will have to be modified specifically to suit a particular business organization. The research findings showed that there were a lot of difficulties experienced by SMEs at implementation stage. System implementation according to Moore (1999) is characterized by purchase of the systems, configuration, installation, customization to meet specific business functionality required by users and data conservation transfer and integration with existing system. The framework gives a guideline for ICT adoption by business organization into their specific needs.

From the study, it was evident that models of information system for SMEs have at least the basic infrastructure to be able to be replicated elsewhere. The respondents had access to personal computers lie desktop's internet access, mobile phones, email and website. The SMEs required more support in installing of more up-to-date infrastructure and balanced information technology, for example personal computer, with advanced software such as database enterprise, resource planning, inventory management, customer relationship management and more enhanced back-up initiative are required for the successful implementation process.

4.20 Driving Theory in Development of the Framework

In the concept of developing this framework, the driving theory was the Instance-Based Learning Theory (IBLT) (Gonzalez, Lerch & Lebiere, 2003), which in essence proposes that 'people make choices from experience and according to what has led to the best outcomes in similar situations in the past.' The process involves: Retrieve memories (*instances*) that resemble the current situation, Filter those memories according to their maximum experienced expected value (*utility orblended value*), Evaluate and store new instances reflecting each possible option in the decision situation (*instances are triplets: situation-decision-utility*), Select the option with the maximum blended value

The blended value (*the desirability of an option*) in IBLT is determined by: The probability of retrieving instances from memory and the payoff, The probability of retrieving instances from memory depends on (similarity, frequency and other memory processes). SDU (Situation, Decision, Utility). S stands for the action taken in a situation, D stands for the decisions corresponding to the action taken in a situation and U stands for the utility or value expected or received from the decision made. The decision process of the IBLT is as summarized in figure

4.15 below.

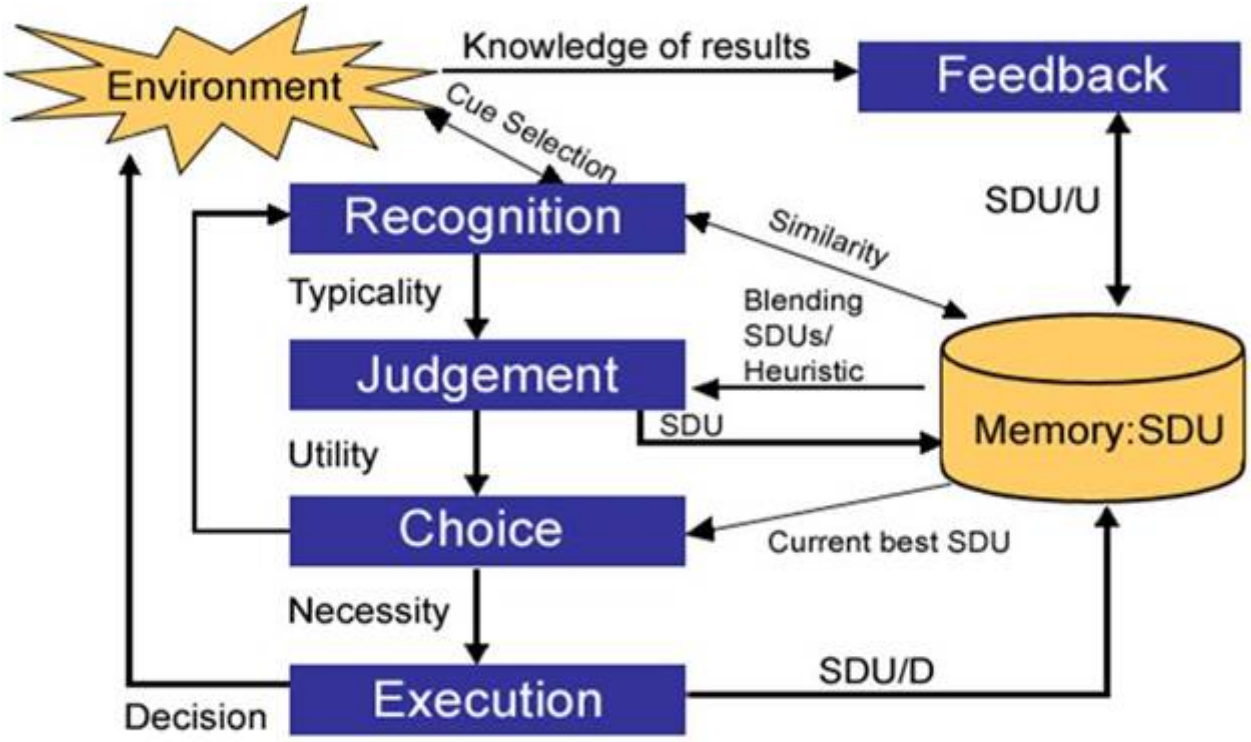


Figure 4. 5: IBLT decision making process (Gonzalez, Lerch & Lebiere, 2003)

Step 1 Identifying/clarifying the decision to be made.

If the decision has not yet been isolated, it should be identified as a first step. In this stage, the framework involves the IT oriented personnel and the management team (if applicable). Sometimes the decision to be made will have been presented to the decision maker. In those situations, Step 1 calls for the clarification of what the decision actually entails. SMEs' decision makers come together after the IT oriented personnel proposes the initiation of the IT system in the enterprise's operations to make their contribution to the proposal. The management then appoints a committee to oversee and execute the other stages to the final stage after the approval of the proposal.

Step 2 Identifying possible decision options.

The next step requires the decision making committee to spell out, as clearly as possible, just what the decision alternatives really are. For instance, if one were attempting to buy a software, make the decision options only consist of the different types of software, or is another option to refrain from buying a software altogether? The committee then has to define the problem to be sorted so as to be able to act upon accordingly. This is as discussed in the next stage;

Step 3 Gathering/ processing information

Next, the decision maker(s) collects or processes information that can help guide the decision. If such information is already at hand, then it simply needs to be processed; that is, studied and understood by the decision maker. If there is no relevant information available, or if there is insufficient information, then such information must be collected so it can be processed. The more significant the decision, the more rigorous the information gathering process. In this stage, decision makers are to evaluate the level of competition currently faced and its effect on the performance of the enterprise, the initial operation techniques and their efficiency, the size of the SME as a requirement for ICT usage as well as the Market Demand.

Step 4 Making/implementing the decision

After the information has been considered according to its relevance and significance, a decision based on that information should be made and, thereafter, implemented. Analysis of the data obtained on the above factors is conducted at this stage to give the picture of the problem which enables the committee to decide on the best option in the adoption process.

Step 5 evaluating the decision and Implementation

In recognition of the fact that not all of one's decisions are likely to be defended, the final step in

the decision making process is to determine whether the decision was appropriate. Ordinarily, this will be done by ascertaining the decision's consequences. This is guided by the results after the analysis of the problem from which conclusions about different factors are made. After the conclusions, the committee members are bound to recommend the best alternative to be employed in the adoption with respect to the output.

The committee then presents the findings and the recommendations thereof to the management of the enterprise. The management therefore becomes responsible for the implementation of the project in the Enterprise's operation. This final stage involves the input of resources to the project, which is facilitated by the top management of the enterprises. However, it is important to take into account that to adopt ICT systems and elements and strategies, the benefits must outweigh investment and maintenance costs. Consequently, commercial issues and potential returns must drive adoption. Beyond a certain level of ICT adoption and diffusion, not all SMEs will necessarily catch up with large firms simply because ICT may not bring large benefits, and SMEs will stay with traditional business processes. Other aspects that should also be considered are the availability of ICT competencies within the firm as well as the availability and cost of appropriate interoperable small-firm systems, network infrastructure and ICT-related support services.

Guided by these considerations, some key elements can be mentioned to foster an adequate introduction of ICT-based solutions in SMEs. First, it is highly recommended that ICT- based solutions be introduced gradually in SMEs since sudden transformations risk failing against unaware and unready business organizations. Second, adequate training and support are required. It is useful to outline that one of the main difficulties for SMEs in exploiting ICTs potentials is the lack of awareness of the benefits to be derived coupled with little or no specific training on

ICTs (both at application and methodological levels). The smaller the enterprise, the greater this problem gets, since smaller companies are not using information technology for their activities (apart from specific accounting services, and little more). Consequently, several problems must be solved to make ICTs simpler to use, reliable and well integrated in the SMEs activities.

4.21 Drawbacks to the developed Adoption process

Though the process appears to be simple in implementation, some limitations/drawbacks may be associated with the adaptation of technology to SMEs. Generally, ICT adoption in any organization is a costly process which calls for extra resource input. However, even though acquisition of information is costly in developing countries, there is evidence to suggest that SMEs are willing to pay significant sums for relevant information where available (KIPPRA, 2006). Difficulties associated with information acquisition have negative implications; lack of information may reduce the extent of mutually beneficial exchanges and lead to uncertainty concerning economic decisions in the enterprises, Information asymmetries leads to high transaction costs, uncertainty and therefore market failure.

Market prices act as coordinating signals for producers and consumers, where sources of information are limited basic ICT could play a major role in creating efficient markets, improving producer practices and speeding innovation, through the provision of information on market prices. ICT causes fast accessibility to the market, increases selection power, improves communication, facilitates identification of markets, improves marketing and reduces business transaction costs. ICT has a proven role in enabling SMEs to increase their productivity and access information and markets, but remain affordable. Enterprises should thus strive to understand customer needs which should then be translated into products or services. To achieve

this, enterprises need market information to effectively market its products. Market research and consumer analysis are important to enable firms meet their customer needs to remain competitive.

4.22 Virtues to the developed Adoption process

Organizational factors collectively affect the resources of the business in relation to adoption of ICT innovations. Increased incorporation of ICT within SMEs directly affects the functionality of the SME; hence increasing productivity and profitability of the business. From an economic and management view- point, ICTs has been regarded as: A social construction; an information provider; an infrastructure - hardware and software; and a business process and system.

From a marketing point of view, ICTs have also been viewed at: a variety of separate applications (Internet, data- bases, PowerPoint); a marketing channel; a communication/promotional medium; a marketing technique; and a tool for relationship marketing. Obviously, ICTs are more than just computers or the Internet. Although there has been a tendency to focus on Internet technology, the study of technology, effects on the economy and business fields must also be closely considered. Today, ICTs must be conceived broadly to encompass the information that businesses create and use, as well as the wide spectrum of increasingly convergent and linked technologies that process that information. Therefore, ICTs can be viewed as a collective term for a wide range of software, hardware, telecommunications and information management techniques, applications and devices, and are used to create, produce, analyze, process, package, distribute, receive, retrieve, store and transform information.

Nowadays, the widespread uses of ICTs are changing the way people or companies work. It is a feature of the technological advancements of this period in history where there has been

immense innovation in information management and communication so that in many countries, information and knowledge are easily conveyed, accessed and used. Thus, the pace of technological change and what is available for use by firms has revolutionized how they interact and do business. In particular, ICTs have a valuable potential for developing SMEs through more effective use and better integration of ICTs in business processes while assisting them to make more efficient decisions relevant to their performance.

ICTs have the potential to generate a step change among SMEs and make them more competitive, innovative and generate growth. Since SMEs play a role of increasing importance in the economy (especially when we consider their contribution to the generation of jobs as well as the social-economic development of the community where they are located, it is then desirable that SMEs are stimulated into adopting new technologies more rapidly, and creating innovative products more competitively. It requires that SMEs have the right environment to prosper, form a skilled workforce and drive economic growth. The Table 4.28 below analysis the proposed framework component, proposed framework activities and expected outcomes on the proposed framework of adoption.

Table 4. 28: Implementation of the Framework

Framework component (inputs)	**Activities**	**Expected output**
Policies and legislation	Formulate policies and legislatives that support the proposition of suitable models for ICT adoption by SMEs	ICT policies and legislations put in place
Process and procedures of adoption	Align data conservation, transfer and integration with existing systems. Identify appropriate changes required by the business to ease and accelerate the process of configuration, installation and customization of ICT to meet specific functionality	ICT adoption process with seamless alignment & accelerated flow. Changed management procedures and initiatives, align as per new process. Introduce and integrate new procedure and strategies on financing, evaluating and monitoring the new initiative

ICT Infrastructure	Put in place infrastructure and network that support ICT for SMEs. Active government and private sector support in installation, updating and maintenance of the infrastructure at all times	Improved accessibility of quality ICT related infrastructure, both in hard elements and secure internet bandwidth software of digital contexts and humor infrastructure. Broadband connectivity that accelerates the ICT contribution in economic growth, innovation and business efficiencies.
Human Resource	Capacity building of HR on proposed and validated system to be implemented to enhance ICT skills and competency, answers to retain skilled professionals through putting in place appropriate labor motivation and rewarding programmers.	Business owners/manages recognizes staff training for all workers affected by the change initiatives. ICT experts are part of the decision making level.
Organization Culture	Create an environment that fosters innovation and creativity in the business organization. Create a conducive environment that encourages personal development in terms of skills an competences Create an environment that encourages sharing of new ideas	Recognition and rewarding innovation enhancing innovative culture
Social dynamics	□□Use and train society's opinion leaders on the importance of adoption of new technology. □□Create a conducive social environment that support ICT adoption process. Encourages positive culture, belief and values (social internalization), compliance with the desire to identify positively with others who adopt news technology and accepted by others who adapted.	Social influence positively impact and accelerates adjusting rate
Dealing with the current ICT models, challenges	□□Current model gaps identified and solutions sought to fill them within the context of the SMEs operations.	□□The gaps detected must be clearly defined or stated, analyzed and aligned with SMEs business operations.
Effects of the current challenge on SMEs.	□□Identification of the effects of the possible challenges of ICT adoption by SMEs.	□□Data collected from interviews and observations are documented. □□Questionnaires are used to probe the specific needs.
Review of previous existing frameworks	□□The data collected, analyzed and systematically organized in a way that will be used for modification of	□□Reporting on the outcome of data analysis is organized in a way that is easy for interpretation and utilization.

	the existing model. □□Evaluating and reviewing of the existing model begins with management and other stakeholders after considering the cost benefit associated with adoption of the new model / framework.	□□Information gathered than documented and stored in a database.
The proposition of a suitable model for ICT adoption by SMEs	□□Data analysis technique to retrieve appropriate and useful information with a view of creating new information and hence a new framework/models for ICT adoption by SMEs.	□□Organize seminars/forums and posting information to the website in order to share and present the information. □□Proof of information generated is sent to the interested parties for their use and support of the initiatives.
Validation of the proposed model	□□The new information created and hence a new model/framework developed shared to the user these are policy makers, academics development economics and SMEs owners/managers for them to critique and adjust the flaws where necessary. □□Adopting a fully-fledged customized ICT for SMEs.	□□Organize seminars/forum and posting information to website in order to share and present the information. □□Proof of information generated is sent to the interested parties for their use and support of the initiatives.
Feedback Mechanism	□□ICT systems adopted by SMEs to solve problems and increase business efficiency in their operations.	□□Feedback from business owners / managers on ICT shared. Follow up on any new information received from the parties involved in new ICT adoption.

4.22 Validation of the model (execution of framework)

The framework validation process involves sharing of the new information created by all interested parties and obtaining their feedback. The ultimate value of the proposed framework of adoption is the solutions it is able to bring to business operations. The table below concerns the framework components, activities, expected outcomes and measurement metrics that determine the framework implementation effectiveness and suitability on desired IT value. However, different organizations approach issues differently, hence ICT adoption process may be

implemented differently.

Table 4. 29: Activities and measurement metrics for the framework

Framework components (inputs)	Activities (processing)	Measurement metric	Ranking				
			1	2	3	4	5
Policies and legislatives	• Formulate policies and legislatives that support ICT adoption	• Do you have policies that support ICT adoption Process?					
Process and procedure of adoption	• Identify and propose the processes and procedures that require to be adjusted to fit into specific functions of ICT systems • Align organizations processes with relevant ICT systems • Identify appropriate changes that is likely to rise as a result of implementing a new model.	• Do you have specific policies and procedures that could benefit from new ICT systems? • Do you have areas in your organization processes that needs to be aligned to fit into the new ICT systems? • Do you have to change management strategies and initiatives to accommodate the implementation of a new model?					
	• Formulate proper and friendly financing, monitoring and evaluating ICT systems, policies and procedures						
ICT infrastructure	• Put in place infrastructure that supports ICT adoption framework.	• Do you have adequate ICT supporting infrastructure in place throughout the organization?					

	• Ensure adequate government and stakeholders support in updating and maintenance of the infrastructure	• Does the government give adequate support to ICT adoption process?					
Human resource	• Human Resource capacity building enhanced ICT skills and competency • ICT skilled professional retention programs put in place.	• Does the organization have staff training on ICT capacity building programs and on change management?					
Organizational culture	• Create environment that foster innovation and creativity • Create environment that encourages personal development in skills and competencies.	• Do you recognize and reward staff that champion innovation and creativity?					
Social dynamic	• The society's opinion leaders or important "significant" trained and persuaded to embrace new innovations. • Encourage positive social environment that support ICT adoption process	• Do other important leaders in society support ICT adoption process?					
Prevailing ICT framework challenges	• Identify and seek solutions to fill in ICT adoption gaps existing in the current frameworks.	• Are the ICT needs clearly documented and aligned with business operation processes? • Are the current ICT systems efficient enough? • Is the current system user friendly?					

		• Is the current system complex to adopt or use? • Is the current ICT viable to the organization? • Do the managers have positive attitude or perception towards ICT adoption process?					
Effects of the current ICT adoption challenges on SMEs	• Identification of the effects of possible challenges on ICT adoption by SMEs	• Do you have the checklists for interviews and observations done and documented? • Do you have questionnaires to deal with specific needs? • Is the ICT adoption process efficient and fast enough? • Is the ICT adopted reliable? • Is the ICT adopted accurate? • Does the ICT adopted facilitates effective in business connectivity to customers and suppliers? • Does the ICT system adopted facilitate management access to information, identification of new business opportunities and decision making?					

		• Does the ICT adopted helps in cost reduction of doing business? • Does it facilitate creation of new products? • Does ICT adopted helps business to cope with marker competition?					
Review of previous existing framework	• Data collected, analysed, integrated and organized in a way that it will be used for modification of the existing model. • The management and other stakeholders consider the benefit of adopting the new model.	• Do you have any data analysis reports? • Is the information gathered and analysed easy to utilize? • Is the proper procedures of data analysis and storage followed properly? • Are business functions like communication creation, sharing and dissemination of information, resource planning and management, customer relationship management and inventory management properly addressed by the existing framework of adoption?					
Proposition of a suitable model for ICT	• Data analysis techniques to retrieve appropriate and useful information with a	• Are there forums or seminars where information of new ICT					

adoption by SMEs	view of creating new information and thereby developing a new ICT model for SMEs adoption.	innovations can be shared with the interested parties? • Are there reports of information retrieved and generated? • Is there database available where information can be stored or retrieved?					
Validation of he proposed model	• The new information generated facilitates the development of a new model for adoption. • The new model is shared to the users for them to give back their views on its suitability or if any adjustment is required. • Adopting a fully fledged customized ICT by SMEs	• Has the process of developing and implementing new model been carried out satisfactorily? • Do you have channels / forums where this new information is presented and shared? • Do the users of the new information effectively received, used and influence new innovations/ information. • Are the relevant stakeholders able to continue supporting the innovations					
Feedback	• ICT systems adopted by SMEs solve business	• Are the business mangers/owners able to					

	problems challenges and Increase business efficiency in its operations.	share information effectively? • Do you have systems in place where new information, initiatives or innovations can be shared without much difficulties? • Do you have proper follow up mechanisms?					
Component sub-total ranking							
Overall total ranking							

Table 4. 30: Statistics on validating activities (Measurement Scores)

Measurement Metric	**Mean (Score)**	**Std. Deviation**
policies that support ICT adoption process	4.100	.73786
Specific policies and procedures that could benefit from new ICT systems	3.500	1.17851
areas in organization processes that needs to be aligned to fit into the new ICT systems	3.100	1.44914
change management strategies and initiatives to accommodate the implementation of a new model	2.700	1.15950
adequate ICT supporting infrastructure in place throughout the organization	2.300	1.33749
government give adequate support to ICT adoption process	2.300	.82327
organization staff training on ICT capacity building programs and on change management	3.100	1.44914
recognize and reward staff that champion innovation and creativity	2.800	1.03280
other important leaders in society support ICT adoption process	2.888	1.05409
ICT needs clearly documented and aligned with business operation processes	2.888	.92796
current ICT systems efficient enough	2.900	.99443
current system user friendly	3.500	1.17851
current system complex to adopt or use	4.000	1.00000
current ICT viable to the organization	4.100	.99443
managers have positive attitude or perception towards ICT adoption	3.700	1.0593
checklists for interviews and observations done and documented	3.000	1.41421
questionnaires to deal with specific needs	2.500	1.26930

ICT adoption process efficient and fast enough	3.100	.99443
ICT adopted reliable	3.100	1.37032
ICT adopted accurate	3.600	1.34990
ICT adopted facilitates effective in business connectivity to customers and supplier	3.100	.99443
ICT system adopted facilitate management access to information, identification of new business opportunities and decision making	3.700	1.15950
ICT adopted helps in cost reduction of doing business	3.500	.70711
facilitate creation of new products	2.900	.87560
ICT adopted helps business to cope with marker competition	3.100	.73786
any data analysis reports	3.700	.67495
information gathered and analysed easy to utilize	3.600	.96609
proper procedures of data analysis and storage followed properly	3.400	1.26491
business functions like communication creation, sharing and dissemination of information, resource planning and management, customer relationship management and inventory management properly addressed by the existing framework of adoption	3.100	1.28668
forums / seminars where information of new ICT innovations can be shared with the interested parties	3.500	.84984
reports of information retrieved and generated	3.500	1.26930
database available where information can be stored or retrieved	3.100	1.28668
process of developing and implementing new model been carried out satisfactorily	2.700	1.15950
channels / forums where this new information is presented and shared	2.900	1.37032
Users of the new information effectively received, used and influence new innovations/ information.	3.400	.84327
relevant stakeholders able to continue supporting the innovations	2.700	1.05935
business mangers/owners able to share information effectively	3.400	1.34990
systems in place where new information, initiatives or innovations can be shared without much difficulties	3.600	1.17379
proper follow up mechanisms	3.111	1.45297

The results of the validation test were presented in table 4.3. The table summarizes the resulting statistics from the collected information during validation of the framework. The mean column indicates the average of the ranking points for each activity (measurement metric) undertaken where as the standard deviation column summarizes the extent to which these companies'

rankings varied which explains the uniformity of the results among different companies.

A mean value of between 0.1 to 1.0 indicates the lowest level of ranking and that between 4.1 to 5.0 indicating the highest level of ranking. Therefore, the low level of ranking shows that the processing activity measured has not been adopted (not supported) by majority of the companies whereas that at the highest level showing that the activity has been adopted and supported in most of the companies.

A standard deviation value above 1 indicates that the companies' rankings varied significantly and could result to much different results. If the validation was conducted from entire population of the clothing SMEs while that below 1 indicates that the variability in the rankings was due to chance and the results can be relied upon to explain the situation in the processing activities.

From the table, all the activities' measurements have a mean value above 2.5 which is the 50 percent point score. This therefore indicates that on average all the companies were above average score of the frameworks' processing requirements. However, the challenges in the adoption of ICT were also found to be significantly influencing the SMEs efforts towards adoption of ICT in their business operation though these challenges are manageable as the results in the table indicate that on average, all the companies have managers who are able to share information and can easily address these challenges.

Summary Results of framework validation as per company

The rankings are on a scale of 1 to 5, with 1 implying least readiness/willingness/availability (low ranking) and 5 implying a high state of readiness/willingness/availability of the measurement metric.

Table 4. 31: Summary Ranking of the Companies

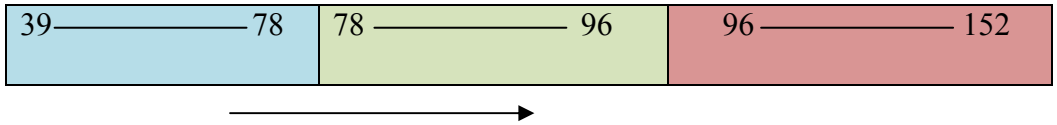
	Company	**Scores**					**Total score**
		1	2	3	4	5	
1	Gala Emporeum	4	1	11	14	6	125
2	Prisco	0	5	6	11	16	152
3	Hirani wears	1	7	4	16	10	141
4	Diplomat collections	5	9	7	13	5	121
5	Hopes Emporium	6	8	7	13	5	120
6	Smart Kinds	9	5	19	4	2	102
7	Paradise Collections	1	4	14	19	1	96
8	Westbory's Corner	2	12	6	15	4	124
9	Sky Collection	8	6	17	6	1	100
10	Handa's	1	12	20	6	0	109
	Maximum Score	**9**	**12**	**20**	**19**	**16**	**152**
	Minimum Score	**0**	**1**	**3**	**4**	**0**	**96**

The maximum score a company can get is 195 **(maximum score of 5 on each metric)**, implying that every component (inputs) in the framework for ICT adoption in SMEs is in place for successful execution of the ICT while the minimum score is 39 **(minimum score of 1 on each metric)** indicating that all components are not properly prepared for successful adoption of ICT in the company. This therefore gives a range value (Maximum – minimum) of 152 with inter quartile range of 78. Hence, any company with a score above 78 is better off placed in the efforts towards ICT adoption in its business operations.

From the table, the best ranked company had a score of 152 and the minimum score recorded was 96. It therefore leads to a conclusion that, the framework developed can be easily utilized towards adoption of ICT by clothing SMEs in their business operations. This is because all the

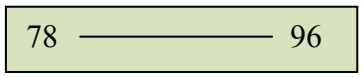
companies sampled and tested ranked above the minimum score expected with which a company can be rated to be in a fair position to adopt the use of ICT in their operations. The summary ranking and interpretations of the findings is explained by the table below (Table 4.32)

Table 4. 32: Ranking and interpretation of findings



i. 

A lower score than 78 indicates there are particular areas in the business organization that need improvement before it can successfully implement ICT for its business.

ii. 

Any score between 78 and 96 implies readiness to implement the framework and it may be more successful, if only the challenge areas can be worked on.

iii. 

A score above 96 implies that the business organization is ready for technology adoption and the framework would be highly successfully in such a case.

4.23 The framework in practice

The proposed framework components affect in one way or another, both business side and technology side of the enterprise. The main aim of technology adoption is to meet business needs effectively. It is meant to improve business competency and efficiency in a market which is hyper – competitive. The framework's components require proactive business –side involvement

and proper decision making process by management for a successful initial technology adoption process to take place. Many enterprises have business goals and targets they intend to achieve. These goals and targets should take into account the ICT strategy when they are being drafted. Both end users and key decision makers within the enterprise should be involved when drafting both business goals and ICT strategy. The ICT experts should be involved in decision making that determines ICT strategy.

The execution of the proposed framework ought to follow a logical order in practice. Each and every element of implementation should be addressed in the order illustrated in figure 4.2. The execution and implementation approach of the proposed framework depends on the needs and nature of an enterprise. Table 4.1 summarizes the execution approach of the proposed framework. The proposed framework is subsequently used a tool to evaluate organization's readiness to adopt ICT for its business needs. The measurement metrics (see table 4.2) determine the framework's effectiveness and suitability on the desired results. The measuring metrics or parameters are ranked on a scale, analyzed and interpreted statistically to determine how best an organization is ready, willing or available to adopt ICT into its business operations. Furthermore, following the framework steps by steps as illustrated in figure 4.2 will guide the organization to identify and address effectively its ICT needs.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter gives the summary of the study findings, the conclusions that were drawn by the researcher according to the findings of the study and the recommendations made by the researcher for the status improvement. The study further illustrates the recommendations that can be adopted by the relevant authority to ensure effectiveness on the ICT adoption among the clothing SMEs.

5.2 Summary

The study sought to determine the extent to which technological elements influenced adoption of ICT in clothing SMEs. The study found that accessibility of technology was adequate for the adoption to the business influence adoption of ICT, that technology elements and compatibility of the available technology was satisfactory for adoption to the business influence to the ICT adoption in the business to a very great The complexity of the available technology and the characteristics of the available technology as well as adequate technologies impacted on adoption in business influence adoption of ICT in the cloth business to a great extent .

The study sought to test the hypothesis that there was no relationship between technological elements and adoption of ICT in business organization. From the regression analysis, the study established that the study revealed that adoption of ICT in clothing was significantly influenced by the technological features. The study established that there existed a significant positive

relationship between Technology availability and adoption of ICT in clothing businesses as indicated by r= 3.838, t=2.034, P= 0.02<0.05, that there existed a significant negative relationship between technological complexity sting and adoption of ICT in clothing business as r=-2.749, t=4.313, P=0.03<0.05 and that there existed a significant positive impact between technological accessibility and adoption of ICT in clothing business as r= 1.678, t=2.906, P= 0.03<0.05.This clearly indicated that increase in accessibility of technologies would increase in business adoption of ICT to a large extent. This clearly indicated that technological factors such as technology accessibility, technology complexity, and features exhibited by the use of technology as well as availability of technology greatly influences adoption of ICT. Thus the study reject the hypothesis, since the study established that there existed a significant positive relationship between technological characteristics and adoption of ICT in clothing SMEs.

The study sought to tests hypotheses that there was no relationship between organizational factors and adoption of ICT by SMEs in Kenya. The study revealed open, management support, managerial structure, innovativeness, organizational readiness for ICT, effective planning for ICT and competency as factors that greatly influencing ICT adoption.

The study revealed that business behavior, culture, interrelatedness, flexible and readiness of the organization greatly influence adoption of ICT in organizations. The study further found linkages - HR Skills, HR Specialization, human aspect human relations as factors that greatly influence adoption of ICI in business. The findings concurred Caldeira *et. al*. (2003) indicated ICT adoption with SMEs have revealed a number of organizational characteristics as potential determinants of the adoption process which includes SME strategies, business size, type of industry, information intensity, organizational culture and technological maturity. The funding

supported Ramsay et al (2004) findings who asserted that it is well recognized that for SMEs to get the full benefit of the Internet and EB (Electronic Business), company and market structures may have to be re-invented and Love et al., (2001) who opined that SME workers and owners behavioral culture, organization behavior communicator change, planning, HR skills, HR competence, attitude, readiness, innovativeness and managerial structure of the organization greatly influence significantly on the adoption level of ICT in business.

The finding concurred with Qirim (2007) found that CEO's innovativeness was the only determinant of external-email adoption. The study had focus on determining the extent to which business organization factors impact on adoption ICT. From the findings business organization structure support from top management, adequate business organization strategies, adequate human resource competency significantly influence adoption ICT in the clothing SMEs retails. The study found that there existed a significant positive correlation between business factors and adoption of ICT with correlation coefficient factors $r = 0.517$, $P=0.021 < 0.05$. Therefore, organization factors such managerial structure, organizational readiness through training of staff, allocating resources for adoption of ICT and organization cultures impact positively on adoption of ICT.

The study sought to test the hypothesis on whether there existed no relationship between organizational factors and Adoption of ICT in Clothing SMEs retails. The study established that there existed a significant positive relationship between adoptions of ICT in businesses. From the regression coefficient analysis, the study established that there existed a significant positive relationship between managerial structure and adoption of ICT , $r=0.883$, $t=2.93$, $P=0.03 < 0.05$, that there existed a positive relationship between Organizational Readiness and adoption of ICT

in clothing SMEs in Kenya as r= 0.717 , t= 2.803, P= 0.04 <0.05 .Therefore organizational readiness through training of employees, allocating sufficient resources, employing IC experts would significantly influence adoption of CT to a great extent. The study further established that there existed a significant positive relationship between Organization culture and adoption of ICT in clothing business as r=0.868, t= 1.906, P=0.02<0.05. This clearly led to rejection of the hypothesis that there was no significant relationship between business organizational factors and ICT adoption in Clothing SMEs.

The study had focus on testing the hypothesis on whether there was no relationship between environmental factors and adoption of ICT by SMEs in Kenya. The study determines whether there existed correlation between environmental factors and adoption of ICT. The study revealed that there existed a significant positive correlation between environmental factors and ICT adoption in Clothing SMEs. The study revealed that there existed a significant positive, significant correlation between market structure and adoption of ICT in cloth businesses as indicted by r = 0.515 ,P=0.004< 0.05, that there existed a significant negative correlation between government regulation and adoption of ICT in cloth business as correlation coefficient indicated by r=0.515, P=0.0004<0.05 and that there existed strong and positive correlation between economic conditions and ICT adoption as Correlation coefficient as indicated by r= 0. 437, P=0.002<0.05.

From the regression analysis, the study found that there is a positive relationship between environmental factors and adoption of ICT. The study established that there was a significant positive relationship between government regulation, market structure, economic conditions and Social factors and adoption of ICT in Clothing SMEs. The finding also revealed that there

existed a significant positive relationship between government regulations and adoption of ICT in businesses enterprises indicated by r= 2.568, t=12.011, P= 0.02<0.05, that there existed a positive relationship between market structure and adoption of ICT in organizations r=2.121, t=4.313, P=0.01<0.05 and that there existed a positive significant relationship between economic conditions and adoption of ICT in clothing businesses indicated by r= 0. 775, t=12.906, P= 0.001<0.05. The study there established that there existed a positive relationship between organizational factors and adoption of ICT in clothing SMEs enterprises rejecting the hypothesis, that there was no relationship between environmental factors and adoption of ICT in clothing SMEs.

The ability of SMEs to survive in an increasingly competitive global environment largely dependent upon their capacity to leverage information as a resource and to benefit from the value of information. They require information on business trends and markets; business environment, legal and regulatory aspects, business management, customer needs, business expansion and diversification; technology; business opportunities; linkages and business partnerships. Limited access to opportune, current, relevant and adequate information is a notable constraint to SMEs in Kenya. Major challenges in relation to market information relate to acquisition and capacity to interpret and effectively use the acquired information. ICT adoption in SMEs in Kenya requires much of the attention from their management and other stakeholders. However, most of the concern should be to the management of these enterprises as they contribute to the daily operation of the enterprises. A framework for the adoption of ICT has been developed in this study which pays attention to the decision makers of the enterprises.

5.3 Framework Components of ICT adoption process / the remedies for overcoming ICT adoption bottlenecks

This study concludes that the following factors are significant determinants for a successful ICT adoption among clothing SMEs in Kenya.

The degree of availability of the ICT components for businesses usage; The personal computers and digital communication technologies allow organization to communicate and share information. The value, desire and decision to adopt rapidly the new technology is significantly determined by the amount of technology available for the business usage in the market. According to the research findings by Saloner and Shephered (1995), the ATM value and adoption rate by banks was determined by the number of ATM locations available. Banks adopted ATM more rapidly if they expected a large number of ATM locations readily available in their areas of operations.

The consistency in compatibility between new technology and business organizational culture, values and preferred work practices; New innovation should not cross one's value or belief systems as well as organizational culture and preferred work practices. If an innovation is incompatible with business owner's social values and beliefs it will not be adopted as rapidly as the one that is compatible. Organizational culture is a significant determinant of ICT implementation. Organizational culture which provides a more supportive adoption climate and flexible structure facilitates successful ICT adoption process. Stowinkowsk and Jarrett (1997) noted that the effect of cultural factors have greater impact on adoption of technology and must be considered with great care in adoption process. New framework of adoption should create an environment that fosters innovation, creativity and personal skill development.

The influence of social factors, such as beliefs, values, social needs, social resources and social ethos on adoption of the new technology; Social involvement in technology adoption is a strong determinant. According to Godwin and Guimarades (1994) any default of any social factor, it is unlikely that a technological innovation is widely adopted and is successful. This was further confirmed by Aanadarejen et al (2000) in their research findings. Social environment in which the dominant groups are prepared to consider innovation seriously, are more receptive to new technological innovations. The new framework of adoption considered enhancement of a positive social environment that supports ICT adoption process.

Accessibility of ICT products, services, systems and infrastructure. Accessible ICT acts as a catalyst and instrument for re-engineering enterprises productivity processes. The more the ICT is accessible, the higher the adoption rate. ICT accessibility means using technology without any assistive standard technology. Effective adoption of ICT among the SMEs mainly depends on the availability and accessibility of ICT resources such as hardware, software, etc. (Buaeng-Andoh, 2012). A study by Jildrim (2007) found that access to technological resources was one of effective ways to teachers' pedagogical use of ICT in teaching. Further, a study of 814 faculty members in higher education in Turkey showed that majority of the respondents reported having access to computer and internet (Usluel, et al 2008). Access to appropriate technology means that affordances and constraints of a technology tool need to be carefully considered when the tool is incorporated in a lesson (Chen, 2010). Promoting access to ICT infrastructure, ICT appliances and services facilitates ICT adoption and business productivity. In consideration to improve access to ICT adoption managers ought to consider the complexity to access to ICT products, services and system infrastructure. Technology which is easy to understand, quality information technology , products readily available in market, compatible with existing technological

infrastructure, culture, values and preferred work practices; less time used in understanding and implementing; less costly in terms of purchasing software and hardware; low cost required in installing and configuration, licensing, training and staff motivation; maintenance; costs outweighs the perceived benefits reaped from the adoption and less skills required to implement it, is usually adopted easily and rapidly.

The ICT requires infrastructure such as servers, switches, routers and back-up units. The costs of ICT solutions are still high. In such cases shared solutions, such as tele-centres provide the most viable options. Broadband connectivity is connectivity is key component in ICT development adoption and use. It accelerates the contribution of ICT's to economic growth facilitates innovation and promotes efficiency network effects and positive externalities. Policies are required to promote effective competition, application access different technological platform, encourage investment in new technology infrastructure, content and application and application and encourage innovation. The findings of the study are consistent with the research findings by Cloete, et al (2003) on SME adoption of e-commerce in South Africa found that adoption is heavily influenced by factors within the organization; lack of access to computers software and hardware, costly telecommunications, security concerns, legal issues, low knowledge level of management and employees. El-Nawawy and Ismail (1999) suggested that the adoption rates of ICT in Egypt were awareness and education, market size, e-commerce infrastructure, telecommunication infrastructure, financial infrastructure, legal system, the government's role, pricing structure and social and psychological factors. Schmid et al (2001) state that in Argentina the main determinant of ICT adoption rate are awareness, access to hardware, infrastructure, organizational culture and financial issues.

ICT related infrastructure include hard elements namely the number of telephone line and secure incur internet servers, electricity production, internet bandwidth and accessibility of digital content) and softer, human resources (Dutta & Mia 2010). Kotelnikov (2007) found that the main constraint causing slow adoption of ICT among SMEs in the Asia Pacific were; the poor telecommunications infrastructure, inability to integrate ICT into business processes, high costs of ICT equipment, incomplete government regulations for e-commerce and poor understanding of the dynamics of the knowledge economy. The study findings are congruent to Ling (2001) and Chiochan (2002) who found that the infrastructure of a country positive influences the adoption of new technological innovation.

Finances, monitoring and evaluation, the magnitude of ensuring a coordinated approach to financing the ICT sector and of having a robust monitoring and evaluation framework to measure performance across the whole sector against agreed on milestones at both national and regional levels. Public financial assistance and other initiatives to expand coverage for under-served groups and remote areas could compliment private investment where appropriate, provided it does not pre-empt private sector initiative or inhibit competition (UNDP 2007). Wulandari et al (2009) in their research findings found that lack of connection, the high cost of internet connection and lack of knowhow to use the internet for business purposes are the limitations of SMEs in using ICT in Central Java.

Technology complexity. Complexity is the degree to which an innovation is perceived relatively difficult to understand or use (Rogers 2003). The new technology innovations that are simple to understand and easy to use are likely to be adopted easily and rapidly as compared to more sophisticated technologies. The new framework of adoption has identified the appropriate new

changes required to be implemented in order to facilitate ease in use and adoption of the new technology. Configuration, installation and customization of new technology innovations to meet specific business functionalities ought to be carried out without many difficulties. To accelerate the ICT adoption rate managers/employees ought to be encouraged to develop new technical knowledge and sufficient skills enough to handle new technologies.

ICT human capacity building recognizes the importance of investing in human resource development in the ICT sector. In addition to increasing the skilled ICT workforce, it is important that efforts are increased to retain skilled professionals. These types of benefits can only happen if there is leadership, commitment, resources and planning supported by availability of local/ national ICT capacity.

ICT capacity building strategies were required among clothing SMEs in Kenya Gray & Lawless (2000). In a UK study of small business enterprises found that the smallest firms were on balance generating averse to adopting a formal staff development policy due to scale effects on resources. Formality planned and even successful nature of staff development appeared to be linked to the complexity of the business. Firms with written explicit staff development policies were more likely to benefit from most forms of training (Mutula & Brankel 2007).

It is important for the firms to develop ICT skills for the digital economy. World Summit on the Information Society (WSIS), society's working group (2004) observes that the world faces an incredible need for ICT skills and shortages are greatly in four areas: managers capable of completing complex technology projects, policy analysts who understand government, weak content creators' software, and hardware and communication engineers. ICT skills needed in core activities in the area of maintenance and repair, hardware and software sales, software

development, assembling, networking and cabling, programmers and analysts, technicians and web designers (Mutula & Brankel 2007).

Rizk (2004) in a study of the e-readiness of SMEs in the textile sector in Egypt found that limited awareness came as top barriers to implementation of ICTs. Similarly Ramsey et al (2003) noted that small business enterprises do not understand the ways in which the internet can enable them to operate their business more effectively and cost effectively. The huge levels ICT awareness among SMEs in Kenya has an educated populace through graduate level institutions, a large Diaspora who return to the country with huge exposure of International institutions due to Kenya's role as the African base for many multinational corporations (MNC) and multi-lateral organizations. However, there was still low levels of ICT adoption among the clothing SME. Similarly, in the UK sector skills development Agency (UK 2004) notes that awareness, altitudes, capabilities and investment are important issues in ICT take-ups by enterprises. Moreover many small businesses lack knowledge, resources and skills that they need to become expert purchasers and appliers of new technology.

Leadership, coordination and partnership strong leadership and appropriate governance mechanisms are needed to ensure that the benefits of ICT are fully realized and would contribute to the profitability of the clothing SMEs. Better coordination of ICT interventions is needed to ensure that efforts are not duplicated and that limited resources are better utilized. Pooling resources and expertise will enhance the "many partners, one team' approach. Jeyaraj et al (2006) found that top management support to be one of the best predictors of organizational adoption of ICT innovations. Top management can stimulate change by communications and reinforcing values through an articulated vision for the organization (Thong 1999) Premkumer & Roberts (1999) also asserts that top management support is critical for creating a supportive

climate for the adoption of new technologies.

Price (2003) points out that in the UK Small enterprises without the buffers of their larger corporate culture, rely on the collective skills of their workforce for business performance. Employers lacking sufficient ICT user skills to perform effectively in their roles impact negatively on business productivity and may not produce a professional piece of work as they are likely to make more errors than well-trained peers. Pooling resources and expertise together will enhance the 'many partners, one team' approach.

ICT policy, legislation and regulatory frameworks embrace the importance of having a strong and effective policy and regulatory framework to create an enabling environment that promotes fair competition. Business, organizations and users need a high level of assurance that the digital infrastructure and networks are reliable and secure, and that an appropriate legislative framework is in place to address internet linked crime and enable business to conduct online commerce.

According to UNDP (2007) government can encourage SMEs access to and use of ICT by first, government engaging in e-commerce so that they can provide an important so that they can provide an important incentive for SMEs to begin using e-commerce as well. Secondly, government should provide the legal policy regulatory framework and public services that can encourage growth ICT amongst SMEs. Public policy is the tool by which government creates remorse barriers for businesses to adopt ICT. Key policies should consider a healthy business environment. A healthy business environment is fundament for business to thrive and benefit from ICT. This include, a transparent open and competitive business framework clear independent rule of law for all businesses, easy set up and dissolution of businesses, transparent simple and accessible corporate regulatory and equal and stable legal treatment for national and cross-border transactions. Government should develop and implement policies and regulations

that will make it easy for people to set up or dissolve businesses and remove barriers to make businesses more profitable and competitive.

Regulatory system will address security, privacy and consumer protection cross-border cooperation presence of low cost online dispute resolution mechanisms among firms and between firms and consumers. Regulations should promote a level playing field and should not hinder companies from competing in free and fair markets (UNDP 2007).

Levenburg et al (2006) argued that competition pressure influences the adoption of technological innovations. Goode & Stevens (2002) also found out that firms faced by stiff competition in pricing, market size and market leadership are likely to turn to automation as a way of achieving competitive edge in terms of price leadership, efficiency, market scope and flexibility in business processes. Therefore, competitive pressure has been identified as one of the best predictors of organizational adoption of technological innovations (Jeyarai et al 2006). The respondents reported that competition influences the adoption of ICT in the business. This finding is congruent to Lertwongsation and Wongpinunwatana's (2003) findings that there is a direct relationship between the intensity of competition in an industry and the degree of ICT adoption.

5.4 Conclusions

The study concluded technology elements significantly influence adoption of ICT in clothing SMEs. There is a significant level of ICT adoption in the operations of the clothing SMEs. Majority of the SMEs in this sector have adopted the use of personal computers and internet in their transactions. However some organizations are found to encounter problems/difficulties in the implementation stage of the ICT adoption. This was informed by the study findings that accessibility of technology should be adequate for the adoption of ICT adoption, technology

compatibility; technology complexity with the businesses functions as well as available technology was satisfactory for adoption to the business influence to the ICT adoption in the business to a very great. The technology complexity, available technology and the characteristics of the available technology influenced adoption of ICT in the cloth business to a great extent .The study concluded that increase in accessibility of technologies would increase in business adoption of ICT to a large extent. This clearly indicated that technological factors such as technology accessibility, technology complexity, and features exhibited by the use of technology as well as availability of technology greatly influences adoption of ICT. The study concluded that there existed a significant positive relationship between technological characteristics and adoption of ICT in clothing SMEs.

From the findings, the study concluded that Business organization factors such as the business organization structure, the business organization strategies, the business organization culture, the available Human Resource Competency significantly influence positive impact on adoption of ICT. From the findings business organization structure support from top management, adequate business organization strategies, adequate human resource competency significantly influence adoption ICT in the clothing SMEs retails. This led to conclusion that there existed a significant positive correlation managerial structure, organizational readiness through training of staff, allocating resources for adoption of ICT and organization cultures impact positively on adoption of ICT. Management should focus on realizing an efficient organization cultures that would enhance and embrace use of ICT in its operations. The study concluded that organizational readiness through training of employees, allocating sufficient resources, and employing IC experts would significantly influence adoption of CT to a great extent and that there existed a significant positive relationship between Organization culture and adoption of ICT in clothing

business

In the clothing sector, 76 percent of the ICT adoption by SMEs can be explained by external forces brought about by the government policies, competition, industry market structure, social dynamics, social internalization, social compliance, social identification, popularly acceptability and the organization's desire to please others in the society. These forces offer significant influence to the level of adoption of ICT in the SMEs in the clothing industry.

According to research findings the main objectives of technology adoption are; to meet business needs, improve competency, competitiveness, and enhance innovation, efficiency and effective decision making. Therefore, ICT adoption strategy must be made part and parcel of business strategy. Efforts must be made by management to address the factors that influence significantly the ICT adoption rate.

The adoption of new technology is a significant reliable strategy that enables the business to survive in the current business environment characterized by strong waves of globalization and liberalization. ICT adoption is an indispensable strategy for firms to deal with competition. To achieve the desired business results, firms must utilize effective framework of technology adoption as proposed in this study. Therefore, the research findings above leads to a general rejection of the three hypotheses since the study concludes that the technological, organizational and the external factors influence the ability of ICT adoption in the clothing SMEs.

5.5 Recommendations

From the findings, the study made the following recommendations.

The study recommend that the management of the clothing SMEs should sought to fosters

adoption of ICT in their enterprises. The study recommends that organization should focus on ensuring efficient organization cultures, structures and competent management. Business organization factors had been found to significantly influence adoption of ICT where firm structure, the enterprises organization measurers adopted for adoption of ICT and efficient culture would foster adoption of ICT. The study recommends that the management should ensure acquires qualified and competent human resource which would have the necessary IT skills and knowledge to utilize ITC.

The study recommends that management in clothing SMEs should adopt measures that would ensure effective government policies, manage competition that may exist in the marker as well as industry market structure and increase social dynamics as well as improve organizational internalization, ensure social compliance and promotion of social identification .This would create an enabling environment for adoption of ICT which would lead to improve in performance and high profitability. The Personal innovativeness in IT should be the major concern of the key players in the sector at the offer of opportunities where each firm should be represented by at least one employee with the basic knowledge of ICT. This is to enable these firms get into contact with the worldwide market through the internet thus getting aware of the market demand and the effectiveness of the new technologies.

The managers/ owners of the clothing SMEs should develop measures that would influence gaining of IT skills, provide sufficient resources for adoption of ICT, adopt efficient compensation framework, embrace computer knowledge through sponsoring some seminars which would promote IT competency by the SMEs staff personnel acquire the available knowledge which will aid in improving their competitiveness in the sector.

The firms in the industry should ensure that the HR skills, HR competence and attitude are fuelled with the current and modern technologies which show the need for new techniques in operation thereby making innovativeness an elegant managerial structure of the organization.

The study recommends that the government and the policy makers should strive to formulate and implement effective regulations that would significantly influence the adoption of the ICT in clothing SMEs. The government should develop ICT policies, ICT legislation and effective regulatory frameworks that would influence adoption of ICT in SMEs. This study emphasized on the need to develop, formulate and implement effective policy and effective regulatory models that would promote an enabling environment for adoption of ICT. Business, organizations and users need a high level of assurance that the digital infrastructure and networks are reliable and secure, and that an appropriate legislative framework is in place to address internet linked crime and enable business to conduct online commerce.

The government should review the current ICT policies in order to put in place friendly policies that would accelerate ICT adoption in the sector. The business managers/owners, policy makers, academic and development economists should consider utilizing this study's proposed framework of adoption. This would assist them to mitigate the possible effects of technology adoption barriers, hence accelerate the ICT adoption rate in SMEs.

5.6 Recommendation for further studies

The researcher therefore due to the limitation of time and financial ability to undertake a broader scope of the study, calls for a further study to be conducted which shall cover a wider geographical coverage of the institutions in the textile industry in Kenya to evaluate the role of technology in the economic performance as well as the social economic factors and their

influence to the firms in this sector. A further study should be conducted to determine the relationship between ICT adoption and organizational performance with a focus on SMEs in clothing sectors.

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APPENDIX I: WORK PLAN

Year		2013																											2014								
Month		July					Aug				Sept					Oct				Nov				Dec					Jan				Feb				
Week Number		1	2	3	4	5	6	7	8	9	##	##	##	##	##	##	##	##	##	##	##	##	##	##	##	##	##	##	##	##	##	##	##	##	##	##	##
Activity																																					
1	Read Literature																																				
2	Finalize Objectives																																				
3	Draft Literature Review																																				
4	Read Methodology Literature																																				
5	Devise Research Approach																																				
6	Draft Research Strategy and Method																																				
7	Develop Questionnaire																																				
8	Revise Questionnaire																																				
9	Proposal Presentation and Corrections																																				
10	Administer Questionnaire and Pilot Test																																				
11	Enter Date into Computer																																				
12	Analyze Data																																				
13	Draft Findings Chapter																																				
14	Update Literature Read																																				
15	Complete Remaining Chapters																																				
16	Submit to Supervisor and Wait feedback																																				
17	Revise Draft, Format for Submission																																				
18	Print and Binding																																				
19	Submit																																				

APPENDIX II: BUDGET

Items	**Total (Kshs)**
1. Personal	15,000
2. Travel	40,000
3. Equipment	20,000
4. Materials, Services and Expendables	10,000
5. Special Activities	20,000
6. Networking	10,000
7. Data Collection	50,000
8. Monitoring and Evaluation	10,000
Grand Total	**175,000**

APPENDIX III: QUESTIONNAIRE

SECTION A:

Background Information

Name of the business (optional)……..

What area of operation is your business based?

……

1) How long has your business been in existence?

   1 – 5 years [ ] 11- 15 years [ ] More than 21 years [ ]

   6- 10 years [ ] 16 – 20 years [ ]

2) i) Do you have branches?

   Yes [ ] No [ ]

   ii) If yes , how many?..... ……..

3) What is the legal Business ownership of this firm?

   a) Sole trader [ ] c) Private limited company [ ]

   b) Partnership [ ] d) Other (specify).....

4) What is the highest level of education that you have attained?

   Certificate [ ] Diploma [ ]

   Post graduate [ ] Master degree [ ]

   Undergraduate [ ]

   Any other specify……..

5) How many employees work in this firm?

   Below 50 [ ] 50-100 [ ]

   101-500 [ ] Above 500 [ ]

6) What is your sales turn-over? ……

7) What are the common ICT Types adopted in your business?

   a) PC –Personal Computer e.g. desktop [ ]

   b) Internet [ ]

   c) Telecommunication [ ]

SECTION B:

Adoption of Information Communication Technology by Small and Medium Enterprises (SMES) In Kenya

8) According to you, where do you experience the most difficulties in ICT adoption process? (Tick where appropriate)
   a) Selection stage [ ]
   b) Implementation stage [ ]
   c) Use stage [ ]
9) According to you, what is the level of ICT adoption in your business?
   a) Very Low [ ]
   b) Low [ ]
   c) Moderate [ ]
   d) High [ ]
   e) Very high [ ]
10) According to you, which of the following factors influence greatly ICT adoption in your business for the last 3 years? (Please tick where appropriate)
   a) Technology elements

   (I.e. size [ ], friendlier [ ], palatability [ ], amount [ ], complexity [ ], compatibility [ ], flexibility [ ], availability [ ], understandability [ ], characteristics [ ], usability [ ], relevancy [ ], viability of the available technology) [ ]

   b) Business Organization

   (i.e. business behavior [ ], human aspect [ ], management [ ], Communication [ ], culture [ ], change [ ], decision making [ ], human relations [ ], planning [ ], readiness [ ], innovativeness [ ], HR specialization [ ], managerial structure [ ], open, supportive [ ], flexible [ ], interrelatedness [ ], linkages – HR Skills [ ], competence [ ], attitudes [ ], readiness of the organization) [ ]

c) Environmental (External) Factors

(i.e. Government policies/regulations [ ], competitive pressure [ ], social factors [ ], habits [ ], tastes [ ], customs [ ], values or culture of your country) [ ]

SECTION C:

Influencing factors

The following are some of the areas considered in ICT adoption, to what extent have your firm been affected by them from each? Use a scale where

1- To a very low extent, 2- To a low extent,

3- To a moderate extent, 4- To a great and 5-To a very great extent

		Rate (Tick where appropriate)				
a) **Technology Elements** (x1)		**1**	**2**	**3**	**4**	**5**
11)	The characteristics of the available technology is adequate to adoption in business					
12)	The compatibility of the available technology is satisfactory for adoption to the business					
13)	The complexity of the available technology is not a hindrance to the ICT adoption in the business.					
14)	The accessibility of technology is adequate for the adoption to the business.					
15)	The technology elements have influence to the ICT adoption in the business.					
b) Business Organization (X2)						
16)	The business organization structure is supportive to the ICT adoption in the business.					
17)	The business organization strategies are adequate to ICT in the business.					

18)	The business organization structure has an influence to the technology adoption in the business.					
19)	The business organization culture is supportive to the ICT adoption in the business					
20)	The available Human Resource Competency is adequate to the adoption of ICT in the business.					
21)	The business organization has an influence to the technology adoption in the business.					
c) External Forces (x3)						
22)	The government regulatory policies support technology adoption in the business					
23)	The competition/market pressure influence the ICT adoption to the business					
24)	The prevailing country's economic conditions affect ICT adoption in the business					
25)	The social factors contribute to the technology adoption in the business					
26)	The business adopts new technology easily that seems agreeable with the existing society's cultural beliefs and values (**internalization)**					
27)	Business adopts new technology that appears popularly acceptable by majority members of the society easily (**compliance with others**)					
28)	Business adopts new technology is influenced by the desire to please other important members of the society					
29)	Business adopts new technology in order to maintain a strong and healthy relationship/connection with other important members of the society (identification with others)					

30)	The business adopts new technology quickly that appears popularly acceptable by majority members of the society					
31)	The external forces influence the ICT adoption rate in the business					

APPENDIX IV: KENYA BUSINESS DIRECTORY / CLOTHING RETAILERS (2014)

Latest Listings
Trendy Tees, Nairobi
Avante Garde Designers, Nairobi
Rugby shops, Nairobi
Smart Kids, Located close to the Eastmatt Supermarket
Mulwa men's wear, Gikomba Nairobi
Jeean Stores, Gikomba, Nairobi
Complex Stall No. 90, Located close to the Family Bank
Mtaa Labels, Githunguri, Nairobi.
Jeska Enterprises, Dagoretti, Nairobi
Mugao's Clothing, Gikomba, Nairobi.
Emacu Collections, Located close to the Telaviv Estate
BLACK AND WHITE, Donholm, Nairobi.
TEKLAR CLOTHES, Donholm, Nairobi.
Nyambura Clothes Shop, zimmerman
KARIUKI TROUSERS, Donholm, Nairobi.
Milele Electrical Sales, Donholm, Nairobi.
Wisdop Ventures, Donholm, Nairobi.
Mercy Outfits, Donholm, Nairobi.
Suits Sharif shop, Eastleigh, Nairobi
Harach, Eastleigh, Nairobi
Elizah Collections, Dagoretti Corner Nairobi
Kids Clothes, Donholm, Nairobi.
Susans Tops, Donholm, Nairobi.
Sheila Gachomo Ladies Clothes, Donholm, Nairobi.
Donholm Best Clothes, Donholm, Nairobi.
Next Connection Ladies Wear, Donholm, Nairobi.
Kyalo Collections, Donholm, Nairobi.
Doreen Clothes Enterprise, baba dogo
Judy Clothes Store, drive in

Latest Listings
5a linen and clothing shop, all sopps
Sylvia's Secrets, Donholm, Nairobi.
Step in Please, Step Out Pleased, Donholm, Nairobi.
Chris Wear Ltd, Donholm, Nairobi.
Chei Chei Waitehi Collection, Donholm, Nairobi.
Fantasy Collection, Donholm, Nairobi.
Mac Peo Enterprises, Donholm, Nairobi.
smart wear, mwiki
amazing Grace enterprices, mwiki
washiro clothes boutique, mwiki
Mama Temko Stall, Donholm, Nairobi.
Harach, Eastleigh, Nairobi.
rachel clothing shop , mwiki
Mama Natary Clothes, Donholm, Nairobi.
Beki Clothing, Donholm, Nairobi.
Evas Skirts, Donholm, Nairobi.
Bettt Beauty Shop and Kid's Wear, ma=wiki
Mubarack Luxurious Shop, Eastleigh, Nairobi.
Aman Plaza Stall h115, Eastleigh, Nairobi.
Kurdi Brothers, Eastleigh, Nairobi.
FAYAN AFRICAN AND FAMILY WEAR, Naivasha
B26 Abshir Co Ltd, Eastleigh, Nairobi
Nuuni Shop, Eastleigh, Nairobi
Mashah Allah B103 Shop, Eastleigh, Nairobi
Ibex Outfitters, Eastleigh, Nairobi
Amana Center, Eastleigh, Nairobi
Wachuka Blouses, roy sambu
Unique Collection, Donholm, Nairobi.
Sos Shop b5 Amana, Eastleigh, Nairobi.
vision shop, Eastleigh, Nairobi.

Latest Listings
Shop b46, Eastleigh, Nairobi.
Olympic Mens Wear Shop, Eastleigh, Nairobi.
Fadle Shops, Eastleigh, Nairobi.
Mariam's Shop, Eastleigh, Nairobi.
Ufurow Taijir Shop, Eastleigh, Nairobi.
Euro and Michael Collections, Eastleigh, Nairobi.
Danson Shop 31B, Eastleigh, Nairobi.
B152, Eastleigh, Nairobi.
Cambar Shop, Eastleigh, Nairobi.
Men's and Ladies Wear, Eastleigh, Nairobi.
A73 Nguo, Eastleigh, Nairobi.
Jilyaale A23, Eastleigh, Nairobi.
Shop B31, Eastleigh, Nairobi.
Dhoosh Center, Eastleigh, Nairobi.
Beacky Enterprises, kasarani
Softcare Baby Diapers General shop, Donholm, Nairobi.
Executive Ladies Tops, Donholm, Nairobi.
Mohammed Abdi Bulle, Eastleigh, Nairobi.
Mama Bush, Eastleigh, Nairobi.
Dhideed, Eastleigh, Nairobi.
Mema boutique, nairobi
Tabor Business Wear, Eastleigh, Nairobi.
Mudees, Eastleigh, Nairobi.
Muteithia tailor, nakuru
SIR HENRYS, nairobi
Abu Dhabi, Eastleigh, Nairobi.
Deeq, Eastleigh, Nairobi.

Latest Listings
Anad Mall, Eastleigh, Nairobi.
Junnese Muya Ventures, kasarani
JASHO CLOTHING, kasarani
Mama Bravo Traders, Dagoreti, Nairobi
Stall 92b, Dagoreti, Nairobi
Sandys Clothing and Assesories, Thika
Wa Muthonis' Shop, ruiru
Kwa Kamaus Clothings, ruiru
GALA EMPORIUM, City Centre Nairobi Located close to the BAZAAR BUILDING
HOPES GARMENTS, City Centre Nairobi Located close to the BAZAAR BUILDING
Sumik designs, Ngumba Estate Nairobi Located close to the bima stationers
Alekim Enterprises, Embakasi Nairobi Located close to the Merrystart school
Mama Ian Stall, Dandora, Nairobi.
Kisasa Trends, ruiru
Mama Damaris Kiosk, ruiru
FURANA CENTRE, ruiru
Jam Street Mall, Eastleigh, Nairobi.
Trimo International Enterprises, Kitengela.
Wana Baraka, Kitengela.
Prince and Princess Wear, Kitengela.
Cliff-Track Suits, Kitengela.
Comm Sense Ltd, Plot Ten Ln Off Airport North Rd Kenya Pipeline Estate Nairobi Located close to the Pinez II Club
Mama Wairimu Clothes Stall, githurai kimbo
Kenya Clothing Collection, nairobi
Angela Kids Fittings, Kitengela.
Cloth Materials And Soda Cafe Stall 45, githurai 44
Kentex Outfitters, Kitengela.
Kalif Wears, Kitengela.

Latest Listings
Quality Mtumba Base, Dandora, Nairobi.
Alberta Jeans center, Dandora, Nairobi.
John Tops, Dandora, Nairobi.
Kizazi Mavazi, Jericho, Nairobi.
Ruth Bedcover, githurai 44
Vickie Suits & Beddings, Jericho, Nairobi.
B5 Jeans Wear, Jericho, Nairobi.
Super Batiki African Wear, Jericho, Nairobi.
Hellen's Fancy Creations, Kariobangi, Nairobi.
Nyatike Emporium, Kariobangi, Nairobi.
Malimali Store, Korogocho, Nairobi.
Yaken Enterprises, kisumu
Modern Stalls, githurai
Ester Mutumba, Korogocho, Nairobi.
Mama Cynthia Clothes Shop, Korogocho,Nairobi.
Carol's Creations, Komarock, Nairobi.
Wagi wear, Komarock, Nairobi.
Dudaline Enterprises, Komarock, Nairobi.
Richrob Enterprises, Komarock, Nairobi.
Josmi Interfashion School Wholesale and retail, Kariobangi North, Nairobi.
Smart Wear, Kariobangi, Nairobi.
Best Lady Suits, Komarock, Nairobi.
Shop Stall 358, Kariobangi, Nairobi.
Msema Ukweli Men's Wear, Kariobangi, Nairobi.
Mitumba clothes, Dandora, Nairobi.
Stall 250, Kariobangi, Nairobi.
Stall 393, Kariobangi, Nairobi.
Okoyo Overall, Kariobangi, Nairobi.
Stall 225, Kariobangi, Nairobi.
Stall 214, Kariobangi, Nairobi.

Latest Listings
Shop Stall 254, Kariobangi, Nairobi.
Njeru Bata Stockist, Kariobangi, Nairobi.
Stall 90, Kariobangi, Nairobi.
Stall 88, Kariobangi, Nairobi.
Nyaga Olono Outfitters, Kariobangi, Nairobi.
Stall 126, Kariobangi, Nairobi.
Botri Enterprises, Kariobangi, Nairobi.
Subukia Ladies Wear, Kariobangi, Nairobi.
Stall 545, Kariobangi, Nairobi.
Garments Clothing Shop, Dandora, Nairobi.
Bondo Outfitters, Dandora, Nairobi.
Best Wear Baby Store, Kariobangi, Nairobi.
Betty Fashions, Nairobi
Betty Fashion Shop, Nairobi
Westbury's Corner, Tom Mboya Street. Nairobi
Vicky's Wear, Tom Mboya Street. Nairobi
Texline Collection, Tom Mboya Street. Nairobi
Sky Collection, Simla House. Tom Mboya Street. Nairobi
Shoppers Wear, Tom Mboya Street. Nairobi
Prisco, Tom Mboya Street. Nairobi
Paradise Collections, Tom Mboya Street. Nairobi
Nebula Emporium, Tom Mboya Street. Nairobi
Kings Wear, Tom Mboya Street. Nairobi
Hirani Wears, Tom Mboya Street. Nairobi
Handa's Fashions, Tom Mboya Street. Nairobi
Diplomat Collections, Old Nation Building. Tom Mboya Street. Nairobi
Stall 77, Kariobangi, Nairobi.
Elegant Outfits, Nairobi
Umoja Selections, Kariobangi, Nairobi.
Alitex Dress makings, nairobi

Latest Listings
Promise Dress making, nairobi
Mama Mambo Dress Making, nairobi
Osieppe Outfitters, Kahawa, Nairobi
Jakari Clothing, City Spuare, Nairobi.
Jane Liette Clothing, City Spuare, Nairobi.
Tofat Sophistication, Dandora, Nairobi.
Homeland T-shirt Shop, Dandora, Nairobi.
Hongkong Shirts, Dandora, Nairobi.
Pants Enterprises, Dandora, Nairobi.
Beadwear ltd, City Square, Nairobi.
Slimmer Figure Wear, City Square, Nairobi.
Paul's latest trends, City Square, Nairobi.
Sleek Stall, City Square, Nairobi.
John's Stall for ladies' Collection, City Square, Nairobi.
Bunny Collection, Buruburu, Nairobi.
Branded collection, Buruburu, Nairobi.
Mama Wairimu clothes stall, Nairobi
Kigwe Wear, Buruburu, Nairobi.
Linen Shop, Buruburu, Nairobi.
Mama Wairimu Dresses, Nairobi
Today's men's wear, Buruburu, Nairobi.
Shontelle Collections, Buruburu, Nairobi.
Sparkles, Buruburu phase 1, Nairobi.
Mwaura collection, Buruburu phase 1, Nairobi.
Uihinju self selection, Buruburu phase 1, Nairobi.
Blessed Enterprises, Buruburu Phase 1, Nairobi.
Wokashares Collections, Nairobi
Mashallah Cloth, Nairobi
Enkarasha Fashion, Armstrong House Ground floor. Kenyatta Avenue. Nairobi
Jery outfitters, Nairobi

Latest Listings
Nekunda kids tops and trousers, Nairobi
Alice's Kid's Clothes, Nairobi
Lucy Kid's, Nairobi
Beautiful Things, eldoret
Eza Stall, Buruburu, Nairobi.
Gerald Sunbeam , Nairobi
Sunbeam Menswear City Centre, Nairobi
Judith Kajuju Stall, Buruburu, Nairobi.
Eunice Mugure Stall, Buruburu, Nairobi.
Fridah Makena stall, Buruburu, Nairobi.
Grace Muthoni Stall, Buruburu, Nairobi.
Essential Exotic Lingerie, Buruburu, Nairobi.
Ablaal Shop, Nairobi
Ramadhan Shop, Nairobi
Akram Fashion, Nairobi
Sabrin Collection, Nairobi
K.M.D Fashions, Nairobi
Islam Designs, Nairobi
Hamid Shop, Nairobi
Al-amin, Nairobi
Mohaa Shop, Nairobi
Arab Fashion, Nairobi
Rithway Fashion, Nairobi
Gadawo Shop, Nairobi
Mashalah Leso Shop, Nairobi
Bin Haji Alia, Nairobi
Muslin Shop, Nairobi
pemah tailoring & dress making, nairobi
Meddies Wear, Umoja 1, Nairobi.
Vibes spicy collections, Thika

Latest Listings
Dubai Boutique, nairobi
Be Smarter Boutique, nairobi
Coner Enterprise, nairobi
Material Mueni Boutique, nairobi
Orlando Fashions &Designs, mombasa
JUNCTION FASHION CENTER, mombasa
King's Collection, Umoja 1, Nairobi.
Mama Vicky Outfitters, Umoja 3, Nairobi.
Garissa ndogo, Kayole, Nairobi.
Gym Wear and You, Market stall centre opp City Market
Joyfriends Dressmaking, Kayole, Nairobi.
Barnice Clothings, , Kayole, Nairobi.
Unique Ladies wear, nairobi
ladies choice fashions, Kahawa-west,Nairobi.
Osmans tailoring shop, Kikuyu
Gyan Clothing., Kahawa-Nairobi
Polytex clothing., kahawa-nairobi
Gosado Bestwear Tailoring Shop, kisumu
Don Luis Enrique Clothline & Designs, Nairobi
Casty's Dress Making, Nyeri
Fudi wa nguo, Eldoret
Klad House, Nairobi, Kenya
Exodus fashion shop, ELDORET
Zekharia Drapers Ltd, Nakuru
For You Clothing Ltd, Nakuru
Yetu Garments, Nakuru
Totex Ltd, Eldoret
Tajoni Emporium, Bungoma
Shanir Wool Shop Ltd, Eldoret
Saibaba Clothing Ltd, Eldoret

Latest Listings
Pop-In General Stores, Nyeri
Nkubu Boma Stores, Meru
New Look Stores, Eldoret
Mothers Clothing Store, Thika
Milimani Drapers, Kakamega
Maya Emporium Ltd, Nakuru
Lobo Pedro Damiano, Meru
Leena Fancy Wear Ltd, Eldoret
Kiromum Kenya Clothing Store, Meru
Kinstar Collections, Eldoret
Kiddys Arcade, Nakuru
Kariuki, Andrew G, Narok
Jita Enterprises, Mumias
Jao Mumias Garment, Mumias
J N G Enterprises, Thika
H M Endo Varieties Ltd, Eldoret
H L Sogha and Company Ltd, Kericho
Gulabchand J Dodhia, Eldoret
Frame Wholesalers and Retail, Thika
Elgon Drapers Ltd, Kitale
Deepans Ltd, Nyeri
Chandni Emprium Ltd, Eldoret
Cave Emporium, Eldoret
A-One Connection, Meru
Aldai Fashions Shop, Kapsabet
A to Z Ltd, Kisumu
Topfit Drapers, Mombasa
Zaverchand Punja, Mombasa
Titi Superwear Ltd, Mombasa

Latest Listings
Tilu, Bilu, Mombasa
Sunmatt Ltd, Mombasa
Stylo Drapers and Outfitters, Mombasa
Spot-In, Mombasa
Ranias, Mombasa
Pennyways, Mombasa
Nyali Fancy Store, Mombasa
No Maneno Bazaar, Mombasa
Mwembe Tayari Traders, Mombasa
Mini Pride, Mombasa
Lightways, Mombasa
Lightex Ltd, Mombasa
Khanga Corner, Mombasa
Hitex Emporium, Mombasa
Ghazal Fashion Store, Mombasa
Depson's, Mombasa
Dawida General Store, Voi
Coast Drapers and Curios Ltd, Mombasa
Butterfly Ltd, Mombasa
Big Daddy Enterprises, Mombasa
Aniverali, A Khanbhai, Mombasa
Al Reza Traders, Mombasa
Akberali Esmailjee and Sons, Mombasa
Ahmed Emporium, Mombasa
Y-Fashions Limited, Nairobi
Wonderland Fashions, Nairobi
Westbury's Corner, Nairobi
Virchand Meghji and Company, Nairobi
Vicky's Wear, Nairobi
Variety Silk House, Nairobi

Latest Listings
Umoja Selections, Nairobi
Tropical Craft, Nairobi
Trios Centre, Nairobi
Top Mode Limited, Nairobi
The Lawrence's, Nairobi
Texnile Collection, Nairobi
Ten Out of Ten Limited, Nairobi
Tana Apparels Limited, Nairobi
Tags Limited, Nairobi
Suntex Family Wear Limited, Nairobi
Sunmatt Limited, Nairobi
Starx Kenya Ladhies, Nairobi
Sky Collection, Nairobi
Sir Henry's Limited, Nairobi
Simnik Enterprises Limited, Nairobi
Shoppers Wear, Nairobi
Seemato, Nairobi
Season Sundries, Nairobi
Saree Palace Limited, Nairobi
Sandip Garments, Nairobi
Roopmilan, Nairobi
Rascan Company Limited, Nairobi
Quality Garments Limited, Nairobi
Punit's , Nairobi
Prisco, Nairobi
Pramukh Stores, Nairobi
Patesan Enterprises, Nairobi
Parson Fashions Limited, Nairobi
Paradise Collections, Nairobi
Orbit Wear Limited, Nairobi

Latest Listings
One 2 One (K) Limited, Nairobi
Nobile Textile Industries Limited, Nairobi
Njumbi Clothing Company, Nairobi
Njiiris Emporium Limited, Nairobi
Nina Marie Limited, Nairobi
Nilco Garments Limited, Nairobi
Ngara Woolways, Nairobi
Nebula Emporuim, Nairobi
Meera Smart Wear, Nairobi
Market Fancy Emporium Limited, Nairobi
Mano Styles Limited, Nairobi
Manix Limited, Westlands, Nairobi
Manix Limited, Muindi Mbingu Street, Nairobi
Manix Limited, Nairobi
Mandera Africa Wear Limited, Nairobi
Lucky Wear, Nairobi
Little Red Limited, Yaya Centre, Nairobi
Little Red Limited, Nairobi
Lewin's, Nairobi
Leroys Maternity Wear, Nairobi
Lenox House of Fashions, Nairobi
Leisure Wear Limited, Nairobi
Laxmichand Keshavji and Sons (K) Limited, Nairobi
Lasha Fashions Limited, Nairobi
Lalji Makan Limited, Nairobi
Kings Wear, Nairobi
Kings Collection, Nairobi
Kim OH Limited, Nairobi
Kikoy Company limited, The, Ngong Road, Nairobi
Kikoy Company limited, The, Wilson Airport,

Latest Listings
Ketan Emporium, Nairobi
Kantan Emporium, Nairobi
Kaza Limited, Nairobi
Kantilal Emporium Limited, Nairobi
Kagwanja Emporium, Nairobi
Julmoth Fashions, Nairobi
Jozis Limited, Nairobi
Jaroch Fashions, Nairobi
J R Patel and Others, Nairobi
Ideal Mens Wear, Nairobi
Hopes Garments , Nairobi
Home Stores 1975 Limited, Nairobi
Hongera Clothing, Nairobi
Hirani Wears, Nairobi
Hillcrest Clothing Company Investment, Nairobi
Hekindu Investment, Nairobi
Handa's Fashions, Nairobi
Greevez Limited, Nairobi
Galaxy Drapers, Nairobi
Fisatex (Kenya) Limited, Nairobi
Fashion Spot, Nairobi
Fashion Plaza Limited, Nairobi
Family Corner Limited, Nairobi
Everpiece Investments Limited, Nairobi
Eva Styles Limited, Nairobi
Eswand Fashions, Nairobi
Ervin's Limited, Nairobi
Equity Limited, Nairobi
Ennumi Limited, Nairobi
Enkarasha Fashion, Nairobi

Latest Listings
Express Fashions Limited, Nairobi
Emanya Clothing, Nairobi
Duhla Enterprises, Nairobi
Duke Emporium Limited, Nairobi
Dubai Fashion, Nairobi
Diplomat Collections, Nairobi
Deeson , Nairobi
Deacons Kenya Limited, Nairobi
Cresto Wear, Nairobi
Cotton On Limited, Nairobi
Cora and Company, Nairobi
Colpro Limited, Nairobi
Collection Designs, Nairobi
C K Fashions, Nairobi
City Wear Limited, Nairobi
City Centre Wear, Nairobi
Chartwear Limited, Nairobi
Charity Nyaga Stores, Nairobi
Central Fancy Wear, Nairobi
Central Clothing Company Limited, Nairobi
Casuals Limited, Nairobi
Bronx Limited, Nairobi
Brand X Limited, Nairobi
Boutique and Gifts Limited, Nairobi
Bitex Limited, Nairobi
Bally Limited, Nairobi
Avilas Men's Wear, Nairobi
Avanti Fashions Limited, Nairobi
Anupi Fashions Limited, Nairobi
Akshar Clothing Company, Nairobi