

**EFFECT OF TECHNOLOGY ADOPTION ON
PERFORMANCE OF YOUTH LED MICRO AND
SMALL ENTERPRISES (MSES)**

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DECLARATION.

This thesis is my original work and has not been presented for a degree in any other university.

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DEDICATION

To my beloved wife Loise and our ever cherishing son, Brian.

To dedicated lecturers and colleagues who offered encouragements and suggestions to make this work the most comprehensive and most useful in supporting youth led MSEs.

And to GOD the almighty for his care and unwavering love, always.

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Finally, I wish to record my special appreciation to my classmates for their helpful comments and constructive critics, and my family who gave me moral support through out the exercise. To you all, may God bless you abundantly.

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LIST OF ABBREVIATIONS AND ACRONYMS

G O K	Government of Kenya
I L O	International Labour Organization.
I S P	Informal Sector Program
K I E	Kenya Industrial Estates
M F I	Micro Financing Institutions
MRRTTT	Ministry of Research, Technical Training and Technology
MSEs	Micro and Small Enterprises
S M E	Small and Medium Enterprises
SPSS	Statistical Package for Social Sciences
S S E	Small Sector Enterprises
UNIDO	United Nations Industrial Development Organisation
UNDP	United Nations Development Program
U S A	United States of America.

ABSTRACT

Despite the great role that micro and small enterprise (MSE) sector play in wealth generation, employment creation and poverty reduction and the Government's effort to promote the sector, the MSE operators seem to be lagging behind in technology adoption. This study aimed at finding out the effect of technology adoption on youth led MSE performance. A descriptive research design was used to carry out the study. Stratified random sampling technique was employed to select a sample of 119 out of the target population of 396. A questionnaire was the main instrument for collecting both quantitative and qualitative data. Quantitative data was analyzed using SPSS software.

From the study, it was revealed that those enterprises which used the four forms of technology adoption experienced improved enterprise performance. However the study found that use of appropriate technology was found not doing much to enhance youth led MSE performance due to insufficient finances and irrelevant skills; that quality improvement techniques are not being made use of due to lack of relevant skills and inefficient machines; that conformance to legal requirements is a major handicap to youth led MSEs due to too high license fee; that financial resource management has weak effect on MSEs due to insufficient funds and that ability to secure appropriate business location is hindered by too high rents charged. The study is important as it will give direction on areas to prioritize the expenditure of the donors and policy makers so as to effectively promote youth led MSE's development.

CHAPTER ONE

1.0 INTRODUCTION

1.1 Background Information

Change is witnessed in every facet of life. In the wake of industrial revolution came in technological innovations and today, it is the scene of information explosion. The world has shrunk in size to a global village. Quality has become the buzzword for survival.

The foregoing is a research project conducted in Makueni County and whose aim was to find out the effect of technology adoption on performance of youth led micro and small enterprises (MSEs). Technology has been identified as an enabler of economic growth as well as a means through which SMEs can gain competitiveness through creativity and innovativeness (Moyi & Njiraini, 2005)).

Makueni County

Makueni County, formally Makueni district is one of the counties that form Eastern Province and one among the four that comprise the Ukambani Region. It is one of the counties found in the arid and semi-arid lands (ASALs) of Kenya. According to the National Vision and Strategy 2005-2015, the ASALs occupy more than 80 percent of the Kenyan land and are home to over 10 million people (GOK, 2004). Despite their high development potential, the ASALs have the lowest development indicators and highest poverty incidence amongst all areas in Kenya. More than 60 percent of ASAL

inhabitants, for instance, live in conditions of abject poverty subsisting on less than one US dollar per day (GOK, 2004). Reinforcing this endemic poverty is a cycle involving environmental degradation, insecurity, climatic shocks, diseases and general despondency. Many development partners have developed interests to come on board to save the situation, especially in the projects geared towards alleviating youth unemployment issues as this is the age bracket badly hit by poverty, unemployment and lack of livelihood (GOK, 2006). As a result, this group engages in vices like crime, prostitution, forced marriages and unwanted pregnancies among others. Findings from this research study therefore come handy to provide backup facts about the situation.

The Kenyan Youth

A Kenyan Youth has been defined as one aged between 15 – 30 years (GOK, 2006). According to the Ministry of Youth Affairs (GOK, 2012 retrieved on 20th Nov.2012 from <http://www.youthaffairs.go.ke>), the youth in Kenya number 10.8 million. They account for about 32% of the population and form 60% of the total labour force. However, many of them have not been absorbed in the job market owing to the country's high unemployment level (GOK, 2006). Youth are innovative, enthusiastic, vibrant and optimistic. If given a chance, they are capable of transferring their acquired technologies into business enterprises and drive Kenya towards achieving its vision 2030.

Micro and Small Enterprises (MSES)

The Kenya's Economic Recovery Action Plan of 2003-2007 enshrined in the Economic Recovery Strategy for Wealth and Employment Creation blue print recognizes the great role that MSE sector play in wealth generation, employment creation and poverty reduction (GOK, 2003). The strategy paper goes on to state that the sector contributes about 18% Gross Domestic Product and plays a critical role in easing foreign exchange constraint, in penetrating new markets and in stimulating growth and development particularly in the rural areas. The sector also acts as the seed bed for entrepreneurial pursuits and complements the process of adjustment in large enterprises by bridging backward and forward linkages for products and services previously not available in the market ((Van Vuuren & Groenewald, 2007).

Technology Adoption

Technology adoption is the modification of an existing technology to meet the needs of specific types of producers or consumers, become compatible with locally available materials or local tastes and preferences or take advantage of a relative abundance of labour relative to capital (Van Dijk, 2001). Since most technology occur elsewhere (mainly through research and development) and later flows away from the centre of innovation, firms that receive technology developed elsewhere require technological capabilities for them to adopt and make effective use of the transferred technology.

Youth Led Micro and Small Enterprises

Efforts to initiate youth led MSEs were formally made through creation of policy documents such as Sessional Paper No. 2 of 1992 on Small Scale and Juakali enterprise, the 1997 – 2001 Development Plans, the National Poverty Eradication Plan of 1999 – 2015 and the Sessional Paper No. 1 of 2005 on Education Training and Research. Consequently, entrepreneurship training was made compulsory for youth undergoing training in all courses offered at tertiary institutions as well as in national universities with a hope that after the training. These youth will opt for self employment through starting own enterprises. Youth fund was subsequently launched to give youth the seed capital required to start their MSEs. Youth are also informally engaging in own MSEs as a way of earning a living throughout the country. However, due to various reasons, these MSEs are characterized with low performances and lack of growth and with majority of them being unable to witness their third birth day (GOK, 2004).

Adoption of Technology by Youth led MSEs

The purpose of technology is to improve productivity of enterprises, and enhance the quality of goods produced to help the enterprises with-stand local and international competition (ILO/UNDP, 2000). If technology is well adopted, it is expected to result to positive enterprise performance which is normally measured in terms of improved product and service quality, increased production, increased profits and enterprise sustainability. Youth are innovative, enthusiastic, vibrant and optimistic. They are also amongst the elite. They are therefore expected to be capable of transferring their

acquired technologies into business enterprises and drive Kenya towards achieving its vision 2030.

Performance of Youth led MSEs

Despite the central role of youth led MSEs in employment, industrial transformation and poverty reduction, their competitiveness and growth prospects fall below the levels required to meet challenges of increasing and changing basis for competition, shifting patterns of legislation and regulations, tumbling trade barriers and fragmentation of markets (Moyi & Njiraini, 2005). Further challenges posed by globalization and liberalization suggest that MSEs must be internally and internationally competitive to survive and grow (UNIDO, 2002). In a market – oriented environment, one way of achieving and maintaining competitiveness is by creating knowledge faster than competitors. In turn, this depends on cost advantages, innovation and the continuous improvement of products and services – all coming through the capability to generate and manage technical change (Moyi and Njiraini, 2005).

Quality

Everyone wants good quality. Indeed the worker or the executive who proclaims the need for low quality has yet to be found. Instead, managers always underscore the role of quality in their successes in the market – thus acknowledging the importance of quality as a competitive prerequisite. In Kenya, Jomo Kenyatta University of

Agriculture & Technology (JKUAT) and Strathmore Universities attribute their success to their commitment to offering quality higher education and training.

To most people, a quality product probably means how good the product looks, how sturdy it is, whether it performs many functions, how luxurious it may be, and how reliable it is. This is a subjective criteria that assesses the beauty, luxury and performance of a product. To quality professionals and enlightened managers though, quality means only one thing: conforming to specifications for the product or service as laid down by engineering and management (Oakland, 2004). This definition, widely used by Americans in manufacturing concerns, is intended to remove the subjective elements of what quality is and replace them with objective and quantifiable ways of gauging it.

Relationship between Technology and Quality in MSEs

As implied by the new growth theories (also called endogenous growth models) propagated by Ikiara et al., technology lay emphasis on technical change and accumulation of knowledge through education, on – job training, innovation and inventions as drivers of growth of enterprises and economies (Ikiara et al, 2005). MSEs need to adapt to survive. Central to this is application of technology as a way for adopting and surviving (UNIDO, 2004), and by extension, it is not possible for MSEs to grow and become competitive without technological change and accumulation of knowledge (Buainaina, 2002).

Without access to technology, MSEs lack capacity to produce efficiently, meet deadlines, upgrade products quality and evolve new products design. It is only MSEs with the capacity to initiate improvements in products, processes and production organizations that take advantage of the emerging opportunities (Moyi and Njiraini, 2005). However, as argued by UNIDO (2004), acquiring new technology and applying it to improve quality and thus get the advantage of competition and sustained productivity would require basic capacity to assimilate the technology, to manage it and to control results with it (UNIDO, 2004).

The Kenyan Perspective

In Kenya, much of existing technology is insufficient and cannot produce goods of a quality or type that enables them to break into new, expanding or more demanding markets. This is because choosing a technology requires specific skills and knowledge that MSEs just do not have (Buainain, 2004). The Kenyan's Sessional Ppapers No. 2 of 1992 and 2005 clearly summarize the problem of technology in Kenya as follows: "MSEs have restricted levels of technology, in appropriate technology and inadequate institutional capacity to support adaptation and absorption of modern technological skills. Such enterprises suffer from lack of information on existing technologies and are exposed to a weak environment that hampers coordination and transfer of technology. They have no way of gauging appropriateness of technology. In addition, there is a wide gap between the suppliers of technology and the end users of technology products."

Effective transfer of technology is therefore not taking place in the country because decisions relating to cost aspects rest with multinational corporations” (GOK, 2003).

1.2 Statement of the Problem

According to the Ministry of Youth Affairs and Sports, the youth in Kenya number about 10.8 million and account for about 32% of the population (GOK, 2012). They form 60% of the total labour force but many of them have not been absorbed in the job market owing to the country's high unemployment level (GOK, 2006; GOK, 2012).

A few youth have started enterprises and most of them have been using technologies acquired from various institutions and in various ways. However, according to Van Dijk (2001), technology is a resource that can be useful if adapted by firms to improve their efficiency and factor productivity. Moyi (2005) asserts that technology is a source of competitiveness and that firms that are able to access, generate and apply technology have a competitive edge over those that cannot.

Gichira (2002) found out that technology helps MSEs achieve effectiveness of financial assistance, strengthens communication channels and helps in marketing. Likewise, Buainainn (2002) asserts that appropriate technology helps MSEs to operate in low-skill spheres with local materials and resources, and Stevenson and Onge (2005) said an empowered financial resource woman manager would increase level of viability of the

woman as an entrepreneur. Gichira (2002) concludes by defining technology capabilities as the information and skills that allow productive enterprises to utilize equipment and technology efficiently. As a result of efficiently utilization of technology, MSEs become innovative and achieve improved product consistency and reliability; better packaging technology for bulk markets; increased output to open up bulk markets and thus increased marketing independence.

The government of Kenya has done a lot to empower its youth adopt technology so as to be able to start micro and small enterprise. Among these, the government has encouraged technical Institutes and other relevant bodies to develop simple goods and production methods. It has also been disseminating information on new products and production methods to potential producers as well as revising building codes to favour architectural and engineering structures that make intensive use of products supplied by MSEs. Lastly, the government has encouraged the formation of co-operatives as a means through which MSEs would access information and support on technology, credit, input and markets (Moya & Njiraini, 2005). However, despite all this, it has been established that about 80% of the MSEs fail within their first three years due to problems related to appropriate technology (GOK, 2001). Lack of enough studies targeting youth entrepreneurs in the MSE sector to date necessitated the carrying out of this study. The study aimed at showing the effect of technology adoption on performance of youth led MSEs.

1.3 Justification

Micro and small enterprise (MSE) sector has been recognized worldwide for its role in stimulating economic growth, creating jobs, alleviating poverty and uplifting living standards, (Van Vuuren & Groenewald, 2007). The sector is an efficient producer that constitutes an important dynamic force in the economy as it requires little capital and is labour intensive. Youths in Kenya are expected to be the major players in the sector as they are energetic, ready to work, educated but idle due to high unemployment levels in the country (GOK, 2006). However, studies have shown that 80% of businesses in the MSE sector fail within their first three years after start up due to problems related to technology (GOK, 2001). Likewise, no known studies have been done on Kenyan youths relating to their technology adoption and its effect on their MSE performance. This research study is therefore aimed at investigating effect of technology adoption on performance of youth led MSEs .It was based in Makueni County.

1.4 Research questions

The following are research questions that this study aimed to answer.

1. To what extent does appropriate technology affect performance of youth led micro and small enterprises?

2. How does quality improvement techniques influence performance of youth led micro and small enterprises?
3. How does conformance to legal requirements affect performance of youth led micro and small enterprises?
4. To what extent does financial resource management affect performance of youth led micro and small enterprises?
5. How much do ability to secure good business site affect performance of youth led micro and small enterprises?

1.5 Objectives

General Objective

The overall objective of this study was to find out the effect of technology adoption on performance of youth led micro and small enterprises (MSEs)

Specific Objectives

Specific objectives were as follows.

1. To investigate how appropriate technology affects performance of youth led micro and small enterprises.
2. To analyze how quality improvement techniques influence performance of youth led micro and small enterprises.
3. To find out how conformance to legal requirements affect performance of youth led micro and small enterprises.

4. To analyze how financial resource management affects performance of youth led micro and small enterprises.
5. To find out how ability to secure good business site affects performance of youth led micro and small enterprises.

Significance of the study

To donor agencies

The findings will be of great assistance to donors as they will be able to engage suitable technology transfer mechanisms and implementers. It will also give direction on prioritizing the expenditure of the donors and policy makers in consideration to areas where the strategies should be focused so as to effectively promote youth led MSEs development

To beneficiaries

Information from this study will be useful to both potential and practicing entrepreneurs to realize their weaknesses/shortcomings and rectify them to maximize beneficial effects for their businesses.

To the government

The findings will be of great assistance to the government in its policy making process as it will improve those inhibitors to technology successes.

To future researchers and scholars

The scholars, researchers and students of entrepreneurship development will be given support information by this study to pursue further studies in the same area or elsewhere.

Assumptions of the study

The study assumed that technology has not brought much impact on the target beneficiaries and that something need be done to improve its successes. It was further assumed that the respondents to the interview would provide sincere and honest information and views.

The study further assumed that the number of entrepreneurs interviewed would be fair representation of all entrepreneurs who received technology within the years under consideration.

Definition of terms

This section deals with operational definitions whose role is to indicate the specific manner in which a term or concept is to be applied. Their use may be different in another perspective. This study used the following concepts.

Micro and small enterprises (MSEs)

A micro or small enterprise is an undertaking, which employs between 1 and 20 employees, with capital investment of not more than kshs 30 million. Operational and

administrative management lies in the hands of one to three persons who usually make major decisions.

Technology

According to Van Dijk (2001), Technology may be seen as a resource that can be useful if adapted by firms to improve their efficiency and factor productivity. This study used the same definition.

Appropriate technology

Is defined as the technology that is suitable to the needs of an MSE operating in the labour intensive, low-skill spheres and using local materials and resources (Buainainn, 2002).

1.9.4 Technology capability

Technology capability is defined as the information and skills- technical, managerial and institutional – that allow productive enterprises to utilize equipment and technology efficiently (Gichira, 2002). It is the ability to make independent technological choices to adapt and improve upon chosen techniques and product and eventually to generate new technology, endogenously (Van Dijk, 2001)

Innovative capacity

Consists of the skills, knowledge and resources that enable firms to assimilate change and create technology.

Technology adoption

Is the modification of an existing technology to meet the needs of specific types of producers or consumers, become compatible with locally available materials or local tastes and preferences or take advantage of a relative abundance of labour relative to capital (Van Dijk, 2001). Since most technology occur elsewhere (mainly through research and development) and later flows away from the centre of innovation, firms that receive technology developed elsewhere require technological capabilities for them to adopt and make effective use of the transferred technology.

Effects of technology adoption

If technology is well adopted, it is expected to result to positive enterprise performance which is normally measured in terms of improved product and service quality, increased production, increased profits and enterprise sustainability

Enterprise performance

Enterprise performance is the measure of how an enterprise is achieving both its stated as well as implied objectives. Most enterprise objectives are geared towards improved productivity, profitability and growth

Sustainability

A well performing enterprise is expected to plough back part of its profits so as to invest more in technology, expand as well as sustain itself even at times when it is experiencing low productivity

Marketability

This is the ability of a product or service to appeal to customers so as to initiate buying and sustain repeat buying. Marketability of a product is measured normally on the basis of its look, its price, place, and the methods used to promote it which should all be appealing to the customers.

Quality

Quality is often used to signify excellence of a product or service. For engineering firms quality part indicates that the part (metal) conforms to certain physical dimensional characteristics as set down in its specifications. In a hospital it may indicate some form of professionalism. This study however adopts Oakland's definition of quality as "the total composite product and service characteristics of marketing, engineering,

manufacturing and maintenance through which the product and service in use will meet the expectations by the customer” (Oakland, 2004).

Financial resources

Financial resources are money and near money items which are used to acquire assets and other resources of an enterprise. Credit facilities available to an enterprise if at appropriate terms are also included

The youth

A Kenyan Youth has been defined as one aged between 15 – 30 years. The youth in Kenya, who number about 9.1 million, account for about 32% of the population. They form 60% of the total labour force but many of them have not been absorbed in the job market owing to the country's high unemployment level (GOK, 2006).

Youth led MSEs

These are enterprises started, owned and operated by persons between the youth age bracket (15 to 30 years). They are small and are usually characterized by low capital due to inadequate sources of funds. Their major investment in technology is training

CHAPTER TWO

2.0 LITERATURE REVIEW

This chapter reviews literature relevant to the research problem. It is based on several research papers and contributions of various authors, National Development plans, Government sessional papers and other policy documents in the development of entrepreneurs and small business enterprises through technology transfer. The review gives special consideration to the extent to which technology adoption has succeeded in achieving its goals of enterprise growth and sustainability.

2.1 Development of MSEs Globally

The role and importance of small enterprise sector to economies of countries has been recognized and documented all over the world. According to Van Vuuren&Groenewald, the sector is an efficient producer that constitute an important dynamic force in the economy as it contribute significantly to a desirable expansion of output over time, stimulating economic activity, creating jobs, alleviating poverty and uplifting living standards internationally as well as in Africa (Van Vuuren&Groenewald, 2007).

Likewise, the sector has potential for enhancing job creation through establishment of industries and initiation of commercial enterprises (GOK, 2001). Equally, small and medium enterprise sector is one of the most prolific source of employment as well as the breeding ground for medium and large industries which are critical for Kenya's industrialization by the year 2020 (GOK, 2004). As a result, many governments have increased their interest in this sector with an aim of improving it. A number of strategies have been implemented to develop MSEs globally with positive results. For instance; Training was found to have positive effect on entrepreneurial activity in Nigeria and Germany respectively (Ibru, 2009; Stohmeyer, 2007). Credit and training were found to have positive effect on entrepreneurial activity in France (Brana, 2008). Credit, training and social capital were found to have positive effect on entrepreneurial activity in UK and USA respectively (Carter & Shaw, 2006; Shane, 2003).

2.1.1 Strategies for Development of MSEs in Kenya

The Kenya Government since its inception has developed strategies and promotion programmes aimed at improving the economy by promoting small and medium enterprises. These programmes are either financial or non-financial. According to Embu District Development Plan of 2002 – 2008 (GOK, 2002) and other government policy papers (GOK, 2006, 2007, GOK, 2009), the Kenyan government has done the following to promote the MSE sector. First, it has issued new regulations on tendering so that all government agencies will be compelled to give preferential treatment to bids for MSEs. Specifically, all district tender boards should give at least 10% of their tenders to MSEs

in the district (GOK, 2007). Secondly, the government has encouraged technical institutes and other relevant bodies to develop simple goods and production methods. Third, the government has been disseminating information on new products and production methods to potential producers. Fourth, the government has revised building codes to favour architectural and engineering structures that make intensive use of products supplied by MSEs; Fifth, the government has established youth fund (GOK, 2006) and women fund (GOK,2007) to provide seed capital for youth and women enterprises respectively. The Kenyan government has also established industrial parks for MSES who previously traded in open air markets, one at Muthurwa market in Nairobi and many others in major towns of the country. Lastly, the government has encouraged the formation of co-operatives as a means through which MSEs would access information and support on technology, credit, input and markets (Moya and Njiraini, 2005).

Likewise, there have been interventions from the private sector to strengthen the voices of women in as far as women entrepreneurship is concerned. Among interventions accorded to women entrepreneurs include improvement of their living conditions through savings mobilization, credit, training provision and information dissemination. According to Embu District Development plan of 2008-2012, other interventions include provision of financial services, promotion of entrepreneurship and management skills, dissemination of information relevant to uplifting women's socio-economic status, and building capacity of women groups to effectively manage revolving funds

(GOK, 2008). Among development partners in this respect are Kenya Women Finance Trust (KWFT), Faulu (K), Women Economic Empowerment Consort (WEEC) and Business Initiative and Management Services (BIMAS).

The survival and growth theories, also called endogenous growth models lay emphasis on technological change and accumulation of knowledge (education, on-job training, innovation and inventions) as drivers of adoption, survival and growth amongst enterprises and economies (Ikiara et al. and UNIDO, 2004; and Buainain, 2002). Many government efforts at enhancing technology transfers have however been piece meal, only partially implemented and many have actually impeded the growth of the sector and the Kenyan economic development in general (GOK, 2004). Though given much attention only in the late 1980's, skills development programmes are not new in the Kenyan history and can be traced back to about 1925. This is when the colonial office issued its first statement on education policy. The policy stated that education should lender the individual more efficient and promote advancement of the community as a whole.

Just like training, finance and business premises, technology is often seen as an important factor that influences productivity and competitiveness of MSEs. However it is not always accessible to them. Consequently, MSEs lack capability to produce efficiently, meet deadlines, upgrade product quality and evolve new product design (UNIDO, 2004).

2.2 Importance of Youth Led Micro and Small Enterprises

The role and importance of youth led micro and small enterprises in Kenya cannot be over emphasized. With the ever increasing influx of school drop outs and unemployed college and university graduates, and without a commensurate increase in the jobs, youths are likely to pose challenges to the economy. The youth age form a critical transition from childhood to young adult and ultimately to full adulthood. Youths are generally delicate and challenging. They are dependent on support and guidance from their family, community, school and society. A mismatch however exist between the aspirations of the youth and the employment opportunities available (GOK, 2006). This therefore calls for a deliberate action of promoting youth owned enterprises which can act as an alternative to formal employment amongst the youth. With this, youths will apply their acquired technologies to start and manage own enterprises, earn a living, and assist in improving the Kenyan economy.

Efforts to initiate youth owned micro and small enterprises have been made through creation of many policy documents. However, the sessional paper No. 1 of 2005 on education Training and Research policy frame work recommended that development of human capital through education and training, promotion of technical and Vocational training as well as teaching of sciences and Information Technology is important to trigger the country's economic growth. All these have strengthened the realization that the youths are engines of economic development in Kenya. (GOK, 2007).

Industrialization of the economy is the key to the socio-economic development of Kenya. Industrialization calls for a human resource base comprising a predominantly literate and educated population and a sufficiently large workforce with relevant skills, attitude and values. According to the projection of the 2002 to 2008 National Development plan, Kenya's population of 30 million, with an annual growth rate of about 2.4%, is expected to rise to 37 million by the year 2010. Over 50% of this population is composed of dependent youth aged below 15 years.

It is estimated in the development plan of 2002-2008 that 59% of Kenya's population is under 20years old. (GOK, 2002). There is thus a rapidly growing population of the youth that not only exerts pressure on employment but also poses a serious socio-economic problem to policy makers. To solve this looming problem and enable Kenya to become a newly industrialized country (Nic) by the year 2020 as envisaged in the sessional paper No. 2 of 1996 on Industrial Transformation and Development, it requires a very invigorated injection of fresh skills and entrepreneurship. This will in turn promote and develop programmes for enhancing employment creation for the youth as well as provide investors with an abundant qualified labour force resulting in accelerated economic growth.

Kenya's population is just under 32 million. GDP in 2005 was reported to be Kshs 850.1 billion resulting in a GDP per capita of Kshs. 26,996. The economy has been

deteriorating over the past two decades, with low economic and employment growth and a decline in productivity. The percentage of people living below the poverty line has increased steadily since 1990 and is estimated at 56 per cent in 2005. Two thirds of Kenyans live in rural areas and 75 to 80 per cent of employment is in the agricultural sector (GOK.2003).

Kenya's liberalization efforts began in earnest in 1994 following its move to a multi-party system. However, because of government downsizing and the retrenchment of many large private sector and foreign-owned firms, formal sector employment has been decreasing. Lack of employment alternatives has thrust a growing number of people into self-employment activities to ensure a livelihood. Throughout the 1990s the growth rate of the informal economy considerably outpaced that of the formal sector. From 1999-2004, the MSE sector was responsible for generating 675,000 jobs annually. Struggling to thrust the country into a state of economic recovery, the new government has stated its commitment to "integrating the MSE sector into the national economic grid", causing the government to take a serious look at the potential of the informal and micro and small enterprise (MSE) sectors for driving employment and economic growth (GOK,2005).

Thus the Economic Recovery Strategy for wealth and employment Creation acknowledges the role of the MSE sector in generating growth, creating jobs and reducing poverty (GOK, 2003). The paper expects over 88% of the 500,000 jobs

promised to Kenyan citizens by the “Narc” Government at inception in 2002 to be created by the sector. According to the paper, the sector contributes about 18% of GDP and plays a critical role in easing foreign exchange constraints, in penetrating new markets and in stimulating growth and development in rural areas.

2.3 Employment Trend in MSE Sector in Kenya

The employment trend of the small enterprise sector in Kenya between the years 2000 and 2003 is noticeable. In 2003, total employment was estimated at 6.4 million persons. This growth in employment was almost entirely attributable to the increase in employment in the small firms whose growth rose from 3.3 million in 2000 to 4.6 million in 2003 (GOK, 2004). Tables 2.1 and 2.2 give a summary of employment trends in Kenya between the years 2000 to 2003.

Table 2.1 Contributions of MSEs to Employment Creation (GOK, 2004)

SECTOR	2000	2001	2002	2003
Public Sector	1743200	1753800	1760700	1742500
Small and Medium Enterprises	3353500	3738000	4150900	4624400
Total	5096700	5492600	5911600	6366900

If the target to industrialization by the year 2020 is to be achieved, then the GOK will have to aid and encourage MSEs to play a major role in providing the additional jobs. MSEs in the manufacturing sector offer considerable attraction to people willing to

invest money, time and effort in building a business. Such enterprises promise bigger returns on investments especially in terms of employment creation and boosting the incomes of Jua Kali entrepreneurs and their workers

Table 2.2 Contributions of MSEs to Employment per Sector (GOK, 2004)

SECTOR	2000	2001	2002	2003
Manufacturing Sector	779 900	861 800	934 200	1 029 800
Construction Sector	109 500	125 900	133 200	139 500
Services Sector	1 924 400	2 145 600	2405 200	2 691 400
Transport & Communication	95 900	106 800	120 600	135 600
Community & Social Sector	291 700	329 100	369 500	418 200
Others	152 100	169 600	188 200	210 000
TOTAL	3 353 500	3 738 800	4150 500	4 624 500

2.4 Technology Adoption by Youth Led MSEs

According to the Ministry of State for Youth Affairs, youths are persons aged 15 to 35 years. These (youths) have considerable potential to contribute to the development of the nation. They form the largest segment of the Kenyan population. They contribute two thirds of the economically active population and account for 61% of the unemployed (GOK 2007). The Kenya demographic and Health survey of 2003 reported that young people are much more likely to be employed if they have completed their education (GOK/UNDP, 2003).

Majority of the Kenyan youth have formal education but no training. Primary and secondary school graduates account for 82% of the unemployed and university graduates for 1.4%. 92% of these have no job training other than formal schooling. (GOK, 2007).

Technology has been looked at “as a resource that can be useful if adapted by firms to improve their efficiency and factor productivity” (Van Dijk, 2001). When applied to micro and small enterprises, technology has proved to be the engine of economic growth amongst “Asian Tigers”. Firms are able to assimilate and adopt technology by developing technical capabilities which are the information and skills (technical, managerial and Institutional) that allow productive enterprises to utilize equipment and technology efficiently (Gichira, 2002). Thus accumulation of human capital in the form of technological capabilities far outweighs physical capital accumulation.

Studies undertaken in African countries reveal that Africa exhibits much more inter firm technological heterogeneity than other developing regions {Biggs, Shah and Srivastova (1995) as quoted by Gichira (2002)}. They also reveal a weak learning environment which is attributed to lack of import and export competition. Thus, the most important investment in new technology that MSEs in Africa can adopt is importation of new technology in form of franchising, sub contracting and licensing.

Skills upgrading not only enhances employee technical and managerial skills but also increases MSEs ability to adopt new technologies. When incorporated in the introduction of new technology, skills upgrading has been shown to have a crucial impact on productivity as it involves experimentation, modification and adaptation to the enterprises (Gichira, 2002). Unfortunately amongst African MSEs, there are more unskilled workers which reduce over-all incentives for enterprise based training. On impact of training and investment in technology by firms on productivity, Carter & Shaw (2006); and Shane (2003) observes that both training and technology investments have a positive impact on firm value added.

Wanjohi & Mugure (2008) also concurs with Gichira (2002) that firm size and firm age are the major determinants of investment in training and technology; with old and large firms investing more. The two papers conclude that accumulation of human capital increases firm's productivity through worker training and investment in technology.

2.5 Technology Adoption and Youth Led MSE Performance

The Kenyan Government since its inception has developed strategies and promotion programmes aimed at improving the economy by promoting small and medium enterprises. Among key priorities in the Embu district development plan for the period 2002-2008 is enhancement of skills and entrepreneurship training through sensitization of indigenous entrepreneurs in processing, management and marketing (GOK, 2001).

To counteract the many challenges posed by globalization, increasing competition, shifting patterns of legislation and regulations, tumbling trade barriers and fragmentation of markets, UNIDO (2004) suggests that MSEs must be internally and internationally competitive to survive and grow. One way of achieving and maintaining competitiveness in a market oriented environment is to be able to create, distribute and exploit knowledge faster than competitors. In turn, this depends on cost advantages, innovation and the continuous improvement of products and services (Gichira,2002).

2.6 Theoretical Performance

The survival and growth theories, also called endogenous growth models lay emphasis on technological change and accumulation of knowledge (education, on-job training, innovation and inventions) as drivers of adoption, survival and growth amongst enterprises and economies (Ikiara et al. and UNIDO, 2004; and Buainain, 2002). Skills training are a major non-financial promotion programmes which seems quite effective in promoting success to small enterprises. The Kenyan Government has seen it so and therefore highlighted it in most of its policy documents. Implementers of the programmes are Non-Government Organizations, private Consultants, Banks, and government Institutions like Kenya Industrial Estates and Ministry of Research Technical Training and Technology among others. However, many government efforts at enhancing technology transfers have been piece meal, only partially implemented and many have actually impeded the growth of the sector and the Kenyan economic development in general (GOK, 2004).

Just like training, finance and business premises, technology is often seen as an important factor that influences productivity and competitiveness of MSEs. However it is not always accessible to them. Consequently, MSEs lack capability to produce efficiently, meet deadlines, upgrade product quality and evolve new product design (UNIDO, 2004). In relation to this, it has been observed that about 80% of businesses fail during their first three years of the start-up stage due to problems related to technology (GOK, 2001).

This research study is therefore aimed at revealing effect of technology on quality amongst youth led MSEs and any inhibitors to their success so as to give recommendations to relevant authorities on how to overcome some of them if not all. It is based in Makueni County.

2.7 Youth Enterprise Development Fund

Youth Enterprise Development Fund was conceived by the Government in June 2006 as a strategic move towards arresting unemployment which is virtually a youth problem (GOK, 2006). According to the Ministry of Youth Affairs circular (GOK,2007), the fund had the objectives to provide loans to existing Micro-finance Institutions (MFIs), registered non-governmental organizations (NGOs) involved in Micro-financing, and savings and credit co-operative organizations (SACCOS) for on-lending to youth enterprises; to attract and facilitate investment in micro, small and medium enterprises, oriented commercial infrastructure such as business or industrial parks and markets or

business incubators that will be beneficial to youth enterprises. Its aim was to support youth oriented micro, small and medium enterprises to develop linkages with large enterprises, to facilitate marketing of products and services of youth enterprises in both domestic and international markets and, to facilitate employment of youth in the international labour market. (GOK, 2006).

While allocating the youth fund, the government recognized the fact that skills acquisition is necessary but not sufficient to improve MSEs' performance through technology adoption. Youth enterprise development fund has been in operation for two years. Unfortunately the group component is inadequate and does not assist individual entrepreneurs. Individual component of the youth fund through micro financing institutions is feared due to the bad effects associated with failure to pay bank loans.

2.8 Summary and Research Gap

From the above, it is clear that small enterprise sector is recognized as having potential to enhance job creation through establishment of industries and initiation of commercial enterprises (GOK, 2001). It is also clear that much has been done to promote programmes aimed at improving the Kenyan economy through promotion of MSEs (GOK, 2006, 2007, GOK, 2009).

Youths have not been left behind. They have been recognized as the engines of economic development in Kenya (GOK, 2007). Much has been done to empower

youth's technological capabilities. Among these, the Kenya's sessional paper no. 1 of 2005 On Education, Training and Research recommended the development of human capital through education and training, promotion of technical and vocational training as well as teaching of science and information technology as important ingredients to trigger the country's economic growth.

Industrialization of the economy is the key to the socio-economic development of Kenya. Industrialization calls for a human resource base comprising a predominantly literate and educated population and a sufficiently large workforce with relevant skills; attitude and values. Kenyan youth form this caliber of people.

Technology has been looked at "as a resource that can be useful if adapted by firms to improve their efficiency and factor productivity" (Van Dijk, 2001). When applied to micro and small enterprises, technology has proved to be the engine of economic growth amongst "Asian Tigers". Firms are able to assimilate and adopt technology by developing technical capabilities which are the information and skills (technical, managerial and Institutional) that allow productive enterprises to utilize equipment and technology efficiently (Gichira, 2002). Thus accumulation of human capital in the form of technological capabilities far outweigh physical capital accumulation.

Skills upgrading not only enhances employee technical and managerial skills but also increases MSE's ability to adopt new technologies. When incorporated in the

introduction of new technology, skills upgrading has been shown to have a crucial impact on productivity as it involves experimentation, modification and adaptation to the enterprises (Gichira, 2002). The current youth fund was started on the government's realisation that skills acquisition is necessary but not sufficient to improve MSEs' performance through technology adoption, thus capital is also essential to finance investments in technology. Unfortunately the group component of the fund is not enough and neither does it assist individual entrepreneurs. Individual component of the youth fund through micro financing institutions on the other hand is feared due to the bad effects associated with failure to re-pay bank loans.

Thus, youths are expected to be the major players in the small enterprise sector. However, due to lack of adequate capital and other reasons, studies show that 80% of these businesses fail within their first three years after start up due to problems related to technology (GOK, 2001). There exists no studies to explain this scenario and neither are there explanations as to why there is mass unemployment amongst the youth resulting to hopelessness, drug abuse and other social vices.

In conclusion no known studies have been done on Kenyan youths relating to their technology adoption and its effect on MSE performance. This research study is therefore aimed at investigating effect of technology adoption on performance of youth led MSEs .It was based in Makueni County.

2.9 Conceptual Frame Work

Conceptual frame work shows effect of Independent variables (forms of technology) on dependent variable (Performance of youth led MSE). If conditions are favorable, it is expected that youths will adopt their acquired technology to improve productivity of their MSEs, enhance quality of goods produced to help their enterprises with-stand local and international competition (ILO/UNDP, 2000).

Technology adoption takes the following forms; appropriateness of technology in use, effective use of quality improvement techniques, conformance to legal requirement, financial resource management and appropriate physical location of business. Figure 2.1 shows this relationship.

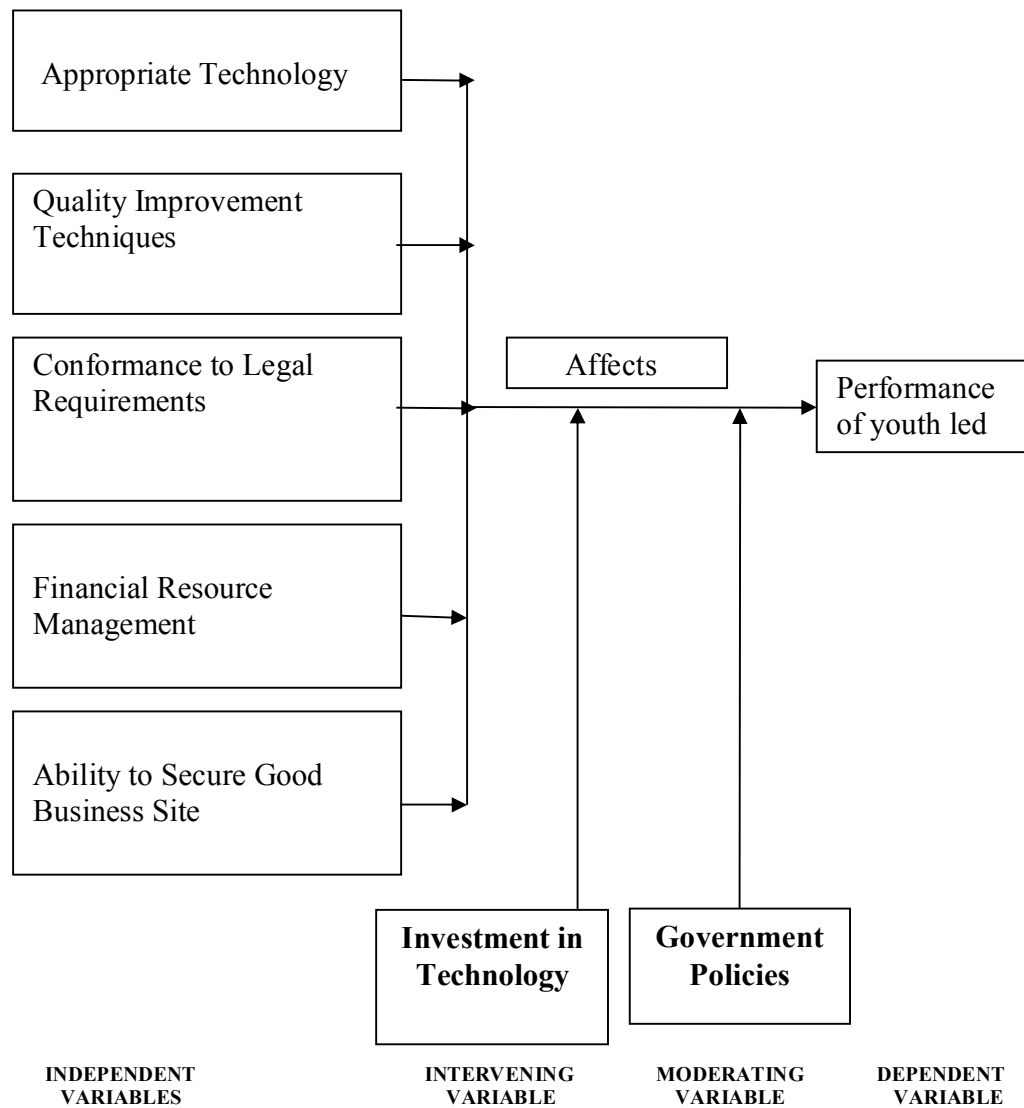


Fig. 2.1. Conceptual framework.

Figure 2.1 illustrates the relationship between forms of technology adoption and performance of MSEs (the dependent variable). The study conceptualized that technology adoption would form independent variables and their effects was expected to impact positively on the performance of MSEs. These are explained as follows.

2.9.1 Intervening Variable

(Investment in Technology)

Youth led MSEs investment in technology occurs in any of the following four major forms; Training, Purchase of equipment, Franchising or Sub contracting (Gichira, et al.,2002). These forms of investment in technology subsequently influence the technology adoption forms (effective use of appropriate technology, quality improvement techniques, conformance to legal requirements, business resource management and ability to secure appropriate business site). Thus, for the MSE to benefit effectfully from the technology adoption, it must invest in all (or most) of the technology investment forms. However, ability to invest in these forms depends on the financial resources that the enterprise has and which are greatly influenced by conducive environment provided by the government policies (which become the moderating variable).

2.9.2 Moderating variable

(Government policy)

Government creates favorable or unfavorable situations for investment. In relation to youth led MSEs, the government has provided youth fund and women fund amongst others and is constantly influencing the interest rates and other conditions necessary for acquiring investment capital. It is also constructing industrial parks, roads and other infrastructure necessary to boost investments amongst the youth.

2.9.3 Independent variables

2.9.3.1 Appropriate Technology

Appropriate technology has been defined as the technology that is suitable to the needs of an MSE operating in the labour intensive, low-skill spheres and using local materials and resources (Buainainn, 2002). The goal of Appropriate Technology is to increase performance of an enterprise without condescension, complication, or environmental damage (Listverse, 2012). Typical Appropriate Technology inventions are more labor intensive, require fewer resources, and use low cost or readily available materials wherever possible. Special attention is paid to the social, cultural, and ethical aspects of the communities the technology is intended for (Listverse, 2012). According to the National Centre for Appropriate technology, adequately implemented Appropriate Technology has resulted to energy conservation, efficiency improvement and cost saving while directly impacting on climate change (NCAT, 2012). Areas of application of appropriate technology includes commercial, residential as well as in farm related enterprises.

2.9.3.2 Quality Improvement Techniques

To most people, a quality product probably means how good the product looks, how sturdy it is, whether it performs many functions, how luxurious it may be, and how reliable it is. This is a subjective criterion that assesses the beauty, luxury and performance of a product. To quality professionals and enlightened managers though, quality means only one thing: conforming to specifications for the product or service as

laid down by engineering and management (Oakland, 2004). This definition, widely used by Americans in manufacturing concerns, is intended to remove the subjective elements about what quality is and replace them with objective and quantifiable ways of gauging it.

According to Oakland (2004), there exists in each department, each office, even household, a series of suppliers and customers concerned with quality maintenance. All these form a series of quality chain which is very important throughout and beyond all organizations, whether they are manufacturing concerns, banks, retail shops, universities, hospitals or hotels. This chain may however be broken at any point by one person or one piece of equipment not meeting the requirements of the customer, internal or external. Quality has to be managed by all and involves everyone in the process and must be applied throughout the organization. Failure to meet the requirements in any part of a quality chain have a way of multiplying; and failure in one part of the system creates problems elsewhere, leading to yet more failure, more problems and so on (Oakland, 2004).

The priority of quality is the continual examination of the requirements and our ability to meet them. This alone will lead to a “continuing improvement” philosophy (Summers, 2006). The benefits of making sure the requirements are met at every stage, every time are truly enormous in terms of increased competitiveness and market share, reduced costs, improved productivity and delivery performance, and the elimination of wastes.

No matter where it is implemented, a good management system will improve process control, reduce wastage, lower costs, increase market share (or funding), facilitate training and involve staff

Re-engineering

The reputation enjoyed by any organization is built by quality, reliability, delivery and price, with quality being the most important of these competitive attributes. Organizational excellence requires not only commitment but also a competence in the mechanics of process management. An effective process management involves integration of business strategies through an understanding of the core business processes. This leads through process analysis and to self assessment opportunities for the organization. The identified process must then be prioritized into those that require continuous improvement, those which require re-engineering and those which lead to a complete re-think or visioning of the business (Evans & Lindsay, 2008)

Re-engineering defined

According to Evans & Lindsay (2008), Re-engineering is “the fundamental rethinking and radical redesign of business processes to achieve dramatic improvements in critical, contemporary measures of performance, such as cost, quality, service and speed.”. Thus re-engineering involves organizations needing to completely re-think how and why they do what they do in order to cope with the ever-changing world. Re-engineering is synonymous to re-designing or inventing. It involves processes being subjected to

continuous improvement until we have dealt with the very poorly performing processes that do need radical review.

Needs for process re-engineering

Technology, Political, financial and cultural changes have brought about changes in customer demands and competitors invading organizational markets. To cope up with these changes, organizations have to work not harder but smarter.

Benefits of re-engineering

Re-engineering challenges managers to rethink their traditional methods of doing work and to commit to customer – focused processes. If properly used, re-engineering results to better customer relations, reductions in cycle time to market and increased productivity, fewer defects/errors and increased profitability.

Re – engineering process

Re-engineering process is not intended to preserve the status quo, but to fundamentally and radically change what is done. It is dynamic. It involves focusing on the results. It takes the form of seven phases as;

Discover; This involves identifying a problem or un- acceptable outcome, followed by determining the desired outcome. Discovering requires assessment of business need; the processes involved, its scope, process customers and their requirements and how to measure its effectiveness.

Establish redesign team; This will comprise senior managers, steering committee, process owners, team leaders and redesign team members among others. Redesign team should have between 5 and 10 members; both insiders and outsiders. Insiders help gain credibility with co-workers. Outsiders bring objectivity and can ask searching questions necessary for creative aspects of the redesign.

Analyse and Document processes; This is done through process mapping and flow charting. It provides a baseline for measuring, analyzing, testing and improving. It allows people to weigh the value each task adds to the total process; to rank and select areas for greater improvements and to spot unnecessary work and points of unclear responsibility.

Innovate and Rebuild; Teams rethink and redesign the new processes, using the same process mapping technique and involving all stakeholders. Approval by the entire action plan commits the organization to implementing the changes and following them through.

Re-organize and retrain; This includes piloting the changes and validating their effectiveness. Training and retraining for the new technology and roles play a vital part in successful implementation.

Measure performance; It is necessary to develop standards for measuring performance of the new process, sub processes, activities and tasks; and

Continuous redesign and improvement; In rapidly changing competitive business environment, it is becoming more likely that companies will re-engineer one process after another. Once a process has been re-designed, continuous improvement of the new processes by the team of people working in the process should become the norm.

Bench marking

Bench marking is a method of measuring your organization against the recognized best performers in a certain industry, organization, function, system, or process. (Morling&Tanner, 2000). The purpose of bench marking is to provide a target for improving the performance of your organization. The benchmark targets improvement of the process outputs or the performance of the actual process.

According to Oakland (2004), Benchmarking focuses on customer-driven project management improvement efforts by emphasizing desired outcomes. It also nurtures wholesome competition by creating the desire to be the best. Bench marking provides a common focus to hold the organization together by measuring areas and analyzing these areas against the best. This targeting of the best reinforces continuous improvement by keeping everyone centered on a long term objective. The leaders are considered “world class”. The organization starts with its current performance. This is the baseline. Through the implementation of continuous improvement, the organization moves toward improvement. As the organization institutionalizes continuous improvement, it progresses to competitive, best in class, and world class. With the help of Bench marking, this continuous improvement can be planned and implemented to meet the organization’s specific objectives.

Evans (2008) identifies four methods of bench marking as; Internal, competitive, functional and Generic. In each case, the type of Bench marking selected depends on the

measures needed and the methods used to collect the data. Internal bench marking looks inside the organization for similar processes and units that seem to do better.

According to Oakland (2004), Competitive bench marking looks at competitors and examines their processes. This type of bench marking seeks other institutions that are performing better than the customer – driven project management organization. When these processes are found, the competitor’s performance is compared with that of the customer – driven project management organization. Functional bench marking looks at any outside or inside activity that is functionally exact to the process under review. Generic bench marking looks at any outside or inside activity that is generically the same as the one under review.

Benefits of Bench marking includes creating a better understanding of the current position, heightening sensitivity to changing customer needs, encouraging innovation, developing realistic stretch goals and establishing realistic action plans. In bench-marking, the following steps are adopted: Understand your organization, Select critical areas for bench marking, Determine where to get bench mark information, Collect and analyze data, Select target bench marks, Determine your performance, Set desired outcomes and Use improvement methodology to achieve desired performance.

How Benchmarking works

According to Oakland(2004), benchmarking changes the perspectives of executives and managers, compares business practices with those of world class organizations,

challenges current practices and processes and creates improved goals and practices for the organization. As a managed process of change, bench marking uses a disciplined structured approach to identify what needs to change, how it can be changed and the benefits of the change. It also creates the desire for change in the first place.

The five main stages of bench marking are;

Plan; Select departments or process groups for bench marking and identify best competitor perhaps using customer feedback or industry observers. Identify bench marks – key performance indicators which will be used in the study. Bring together the appropriate team to be involved. Decide information and data collection methodology. (Do not forget desk research). Prepare for any visits and interact with target organizations. Use data collection methodology.

Analyse; Compare the organization and its competitors using the bench mark data. Catalogue the information and create a “competence centre” which monitors capabilities. Understand the “enabling process” as well as the performance measures.

Develop; Set new performance level objectives/standards. Develop action plans to achieve goals and integrate into the organization including re-design of any process identified as candidates.

Improve; Implement specific actions and integrate them into the business processes; and

Review; Monitor the results and improvements. Review the bench marks and the ongoing relationship with the target organization.

2.9.3.3 Conformance to Legal Requirements

According to a recent World Bank survey done in Haiti, over 60 percent of women perceived taxes and customs as constraints to their business growth, compared to only 40 percent of men (UNCDF/UNDP, 2003). This negative perception makes women less likely to register their businesses, and it deprives the government of tax revenue. Gichira, Amondi, njoroge and Kabugua (2002) argues that MSEs in Kenya do not perform well because of too much harassment from local authorities for failure to adhere to legal regulations. Among the acts whose requirements that MSEs are unable to fulfill include security and encryption, copyright and intellectual property rights, payment regulations, cross border commerce taxation, tariffs, and duties, fraud and other commercial crimes, legal framework contracts, jurisdiction and applicable law, liability for content and privacy (Gichira et al, 2002). However, among the additional rules that need to be adapted are laws on removal paper-based obstacles, (Gichira et al, 2002)

Stevenson and Onge (2005) on the other hand laments that a burdensome and costly regulatory environment, unfavorable tax regime, inefficient legal and judicial system, and insecurity of tenure are among the major constraints in the MSE sector in Kenya. From these discussions, it may be construed that MSEs find it hard to satisfy legal requirements as they are beyond their reach. This constraints MSE's businesses and leaves very little room for positive comparison between business performance and conformance to legal requirements.

2.9.3.4 Financial Resource Management

For technology adoption to take place, Resources need to be availed at the right time, place and amount that they are needed. These resources are acquired through finances which is a major constraint amongst most youth led MSEs (Stevenson & Onge, 2005). According to Gichira (2002), Acquisition of financial resources by MSEs can be looked at under two main categories as (a) Lack of tangible security which can be used as collateral. This is normally complicated by existence of inappropriate legal framework that does not recognize innovative strategies for lending to MSEs and (b) Limited access to formal finances due to unemployment, low GDP and insufficient capacity from the government to deliver financial services to youth led MSEs; save for the youth enterprise development fund.

The measure of survival and success of youth led MSEs– solvency, net income, growth in assets, employment creation and others are all measured in monetary terms and rests around the firm’s financial management. Thus, an increase in the range of external sources of funds calls for greater skills in the application of value judgment. This should be diligently applied on selection of the best choice of either one single source or a combination of several sources; that is a “package” deal.

Financial management has therefore the dual function; that of maximizing utilization of funds employed by the firm and minimizing the burdens imposed by recourse to external sources (Charter & Shaw,2006). Thus the central feature of financial management is its formulation of the firm’s strategy. This is seen in the way the firm determines the most

effective use of funds currently at its disposal. The firm's financial capability is also used in selecting the most favorable sources of additional funds that the enterprise will need in the foreseeable future

2.9.3.5 Ability to Secure Good Business Site

Land

Most of land related problems of MSEs revolves around ownership title deeds and invasions by private developers (GOK, 2005). Lack of suitable land allocated to MSEs is a major drawback to their growth and competitiveness. However over the years, the government has tried to allocate some land to upcoming MSEs through its agents. These agents include local and provincial administration for Jua Kali sheds, KIE sheds and others (GOK, 2002). However such land gets "grabbed" by private developers due to absence of land title deeds.

Roads and other Infrastructure

Shortage of serviced sheds and other MSE stands further undermines the quantity and quality of MSE products. In-accessibility to land and lack of property rights hamper access to infrastructure and utilities by the MSEs. Of particular importance amongst hindrances to MSEs infrastructural facilities is access to water, electricity, bank, post office and other infrastructural facilities as these constrains MSEs technological adoption capabilities, thereby adversely affecting their performance and competitiveness of their products and services.

2.9.3.6 Performance of Youth led MSE

This time round, most firms have to rise up to the challenges of operating in a very dynamic, technological, competitive and volatile environment. It is only those firms that will embrace quality as their core business which will survive the onslaught that competition brings with it.

There are many new market entrants with 'bigger stick' which will give existing firms a good run for their money. Successful business operation depends on the ability to complete; and the ability to compete depends largely on the quality of the product. This will, therefore require that an entrepreneurial organization works towards product/service improvement on a continuous basis. This will, in turn, call for managerial talent that is capable of harnessing organizational resources – human, material, physical and informational resources- efficiently and effectively toward meeting the organizations objectives and goals. Most organizations objectives are to make profit; which is partly realized through the provision of competitive and quality products/services.

There is a growing realization that high quality goods and services can give an organization a considerable competitive edge. Good quality reduces the cost of rework, scrap, and returns and, most importantly, generates satisfied customers. The entrepreneur may opt to employ a flat organizational structure with informal networks throughout (Hisrich, 2005) to facilitate an effective control system.

Management is essential for business; as leadership is, as entrepreneurship is (Turner, 2002). In small enterprises, the owner is the manager of the business whereas in large enterprises, management and ownership are divorced from each other. Most large business organizations are operated by professional managers who may or may not own part of the business. It is the risk of management to operate the business at a profit and to provide each of the three major interest groups – consumer, worker, owner – with fair return that distinguishes a successful entrepreneur from the others. The consumer must be given a good product/service for his money, the worker must have a fair wage for his labour and skills; the owner must receive a fair return on his investment. Management must, therefore, reconcile these divergent interests as successfully as possible. For an entrepreneur to turn his business into an entrepreneurial organization that is competitive and has a mark of quality, he has to utilize his entrepreneurial knowledge and execute his managerial functions effectively.

Sustainability

For a competitive MSE to thrive, an enabling legal environment is imperative (Gichira et al.,2002). Despite a significant achievement in legal reforms within the government sector; a number of existing laws and regulations still remain cumbersome. These include by-laws applied by many local authorities which are not standardized and appear, in most cases punitive to technological adoption by youth led MSES; a lot of Bureaucratic and lengthy process of transacting business

with government agencies adversely impacts on the operations of the MSES; the single business permit (SBP) system launched in 1999 and which became operational recently and whose fees are too prohibitive; Centralization of business names registration in Nairobi which poses problems for MSES located in rural areas; and Similarly, requirements for MSES to give their physical address which poses a serious problem to those without permanent physical location. All these results to high cost, thus forcing many entrepreneurs to stay without registration.

Most MSES consistently encounter harassment from local authorities and Government Officers over attempts to operate on un- used lands, and the daily license fees are normally too exorbitant for the MSES to afford. When there is court dispute, the judicial system is normally complex, expensive and time consuming and sometimes unfair. It also makes sub-contracting, franchising and other business arrangements impossible amongst MSES. Finally majority of MSES have no legal title deeds for the site on which they operate and they can therefore not invest in their work sites. Absence of security of tenure denies them access to credit. Policies regulating the provision of power, roads and water, coupled with difficult building standards compound their insecurity (Stevenson& Onge, 2005).

In his paper on approaches to industrialization strategic planning in Kenya; Lt Gen (Rtd) John Koech observed that for the government to be able to realize its vision 2030; there is need to shift the government's focus from agro-based to Techno &

knowledge based economy, streamline and rationalize the generation, acquisition and utilization of Technology, embrace Research and development for economic development, harmonies National Industrial research programmes, and linkages, increase R & D funding from 0.3 to 2% of GDP and empower the Ministry of Trade and Industry to drive the Industrialization process, with KIRDI as a key player (Koech, 2009)

Marketability

According to sessional paper No. 2 of 2005 on Development of MSE for wealth and employment creation for poverty reduction; MSEs have inadequate access to physical infrastructure (GOK, 2005). Among the constraining factors is Land tenure in Kenya which is so unfavorable to upcoming MSEs (GOK, 2005).

The Kenya's economic Recovery Strategy paper of 2003 identifies poor infrastructure as a critical factor that constrains profitable business in Kenya (GOK, 2003). The poor state of the country's road network, lack of electricity in rural areas and other ingredients of physical infrastructure all contribute towards unfavorable business environment (Deakins et al, 2003). Poor state of country's road network, for example, adds cost of producing and marketing of goods and services, thereby rendering the MSEs goods and services less competitive than imported substitutes. Other infrastructural problems include inaccessibility to land, electricity and other utilities.

CHAPTER THREE

3.0 MATERIALS AND METHODS

This chapter dealt with methodology to be applied in collecting data. It outlines the study area, target population, type of data and how research instruments were to be developed and administered. It was governed by the topic of the study.

3.1 Study area

The research study was conducted in Makueni County which was formerly Makueni District. The County is one of the four that comprise the Ukambani Region and one of the counties found in the Arid and semi arid lands (ASALs) According to the National Vision and Strategy 2005-2015, the ASALs have the lowest development indicators and highest poverty incidence amongst all areas in Kenya. Many development partners have developed interests to come on board to save the situation, especially in the projects geared towards alleviating youth unemployment issues as this is the age bracket badly hit by poverty, unemployment and lack of livelihood (GOK, 2006). As a result, this group engages in vices like crime, prostitution, forced marriages and unwanted pregnancies among others

3.2 Study design

The study used both qualitative and quantitative research designs. Qualitative research design utilized in depth observations and had been used successfully by other researchers to design and communicate their findings (Mugenda &Mugenda, 2003). Among those

who have successfully used the design are Stevenson & Onge (2005) and UNIDO (2004). Quantitative research design helped in revealing the direction and strengths of the variables while qualitative design showed the main themes. The design was descriptive in nature. As Gall and Borg (1989) noted, “Descriptive studies by nature emphasis interpretation.”

3.3 Study population

The target population for this study was youth led MSEs in Makueni County who received any form of technology between 2000 and 2007. The list was computed from information with ministry of trade and industry, ministry of youth affairs and other relevant ministries.

3.4 Inclusion Criteria

To be included among the respondents, one must have been in the youth age bracket of 15 to 30 years, must have received any form of technology between years 2000 and 2007 and must be owning or operating a micro or a small enterprise which must be within the administrative boundaries of the county and be in the MSE sector

3.5 Exclusion Criteria

The study excluded all businesses not owned by youth, those not in the MSE sector and those found outside the administrative boundaries of Makueni County. The study findings may therefore be different from those found in the excluded population

3.6 Sample size determination

Information concerning the target population was obtained from ministry of trade and industry, ministry of youth affairs and other relevant ministries. The total number of all MSEs in the district was estimated at 1320. Assuming those led by youths were 30 % (as youths are 32% of total households (GOK, 2006)), our target population became 396.

Due to time and resource limitation, it was not possible to interview all the 396 entrepreneurs. A representative sample was therefore chosen which would as well give the same information which can be obtained from the entire population.

3.7 Sampling

Systematic random sampling technique was used to get a study sample of 119 out of a possible 396 youth led SMES in Makueni District (30% as recommended by Mugenda, A., 2008). Stratified random sampling technique gives all target population within a stratum an equal chance of being selected. It was an appropriate sampling technique as it is objective and the results could be representative and generalized. The technique makes it probable that the sample is approximately the same as the population on the variables to be studied (Mugenda, A., 2008).

A table of random numbers was applied on a sampling frame with the three sub-sectors of MSEs undertaken in Makueni County to draw samples using this approach. The study was expected to generate descriptive Information. Table 3.1 shows how the three sub sectors were stratified.

Table 3.1: Sample Sizes According to Sub Sectors

Sub sector	SMES (N)	Sample Size (n)
Manufacturers	48	14
Repairs and services	142	43
Traders and middlemen	206	62
TOTALS	396	119

3.8 Study procedure

Qualitative data was administered by the researcher to interviewees on one-to-one basis. This was mainly to check and confirm the answers received using quantitative questions as well as reveal other major themes not captured using quantitative questions. The rationale behind use of semi-structured questions on a one to one basis was to make it possible for the researcher to administer the interview himself, reframe the questions where necessary and make necessary explanations to suit the level of interviewee. At the same time, the researcher was able to make observations to match with the entrepreneur's responses.

3.9 Data Collection

Data collection commenced in December, 2008. The researcher visited respective ministries and resource centers in Makueni district and chiefs of specific areas from where the sample was drawn. He explained the purpose of his research so as to get help on identification of suitable interviewees. After introductory visits, the researcher arranged for convenient time for interviews with selected interviewees.

One instrument per interviewee was used to collect the data. This instrument had three parts. Part one and two, made of a predominantly 5-point likert type scale was used to collect quantitative data in order to measure direction and strength of the responses. Part three, made of semi- structured questions collected qualitative data. Data collection and instrumentation was administered and recorded by the researcher himself. Simple straightforward questions on personal data, business information and technology were included. Questions were designed in such a way as to get general answers on personal data which led to more specific questions on technology.

Validity and Reliability of the Instruments

According to Saunders, Lewis & Thornhill (2007), validity is the extent to which research findings are really about what they profess to be about. Reliability on the other hand is the extent to which data collection technique will yield consistent findings, similar observations would be made or conclusions reached by other researchers or there

is transparency in how sense was made from the raw data (Saunders et al., 2007). In order to ensure reliability, the researcher used Mitchell (1996) internal consistency test cited by Saunders et al. (2007) where responses to qualitative questions were correlated to those of the quantitative questions in the same questionnaire. Therefore, the questionnaire was designed in such a way that most of the quantitative questions were reframed to capture qualitative data as it also ensured consistency of the responses across all the questions.

Internal validity consists of content validity where the measuring instrument is to provide adequate coverage of the investigative questions, criterion-related validity where the instrument should make accurate predictions of expected information and construct validity where the instrument measures the presence of those constructs that is intended to be measured. To enhance content validity, the questionnaires had at least five questions intended to measure each variable in the conceptual framework. For criterion related validity, the questionnaires were composed of carefully constructed questions with the guidance of my supervisors and to be scrutinized by a group of my classmates to ensure it accurately predicts and thus captures expected information and data.

Pilot Test

To ensure construct validity of the research instrument, a pilot test was conducted on five youth led MSES in Makueni County. Responses from these interviewees were used to

address any ambiguity and clarify vague sentences. The pilot test also guaranteed reliability of the study.

3. 10 Data Analysis

Qualitative data was manually analyzed using the researcher's insight and research skills to bring out the main themes. The emerging themes were then operationalised for content analysis and to make meanings and importance of the study. The basis of thematic approach emphasizes the clustering and presentation of material information found across all responses. Necessary explanations based on the findings followed after which conclusions and recommendations were summed up. This was based on the findings of the study.

Responses to quantitative questions were electronically analyzed to reveal relationship between the dependent and independent variables. Excel computer spreadsheet, data management and statistical analysis software packages like statistical package for social sciences (SPSS) were used in this case.

Specifically,

Parts 1 and 2 (personal and business information) were analyzed using descriptive statistics. From this, measures of central tendencies like percentages, frequencies, mean, mode, median and standard deviation were generated.

Part 3 A to H (information on technology) was analyzed using the person's correlation matrix. From the correlation index, it was possible to gauge whether there exists any relationship between business performance and each of the technology adoption forms, and the strength and direction of this relationship at different levels of significance.

3.11 Ethical considerations

The study recognized the importance of upholding professional ethics in the process of research instrument administration as well as in the analysis and reporting process. To this end, the researcher personally briefed respondents of the use and importance of the study before commencement. He also guaranteed respondents that their responses would be kept confidential which ensured that the respondents gave their information voluntarily and without coercion. Finally, the researcher was in contact with the respondents throughout the study exercise, assuring them at all times and thus gaining their confidence.

CHAPTER FOUR

4.0 RESULTS

In this chapter, data collected is presented and analyzed according to the purpose of the study, whose aim was to establish effect of technology adoption forms on performance of youth led MSEs. The study focused on youth led MSEs in Makueni County. Discussions of the findings were also done in this chapter as Gall and Borg (1989) noted “descriptive studies by nature emphasizes interpretation”

Response Rate

The research proposal expected to collect data from a target population of 119 eligible respondents. However some entrepreneurs had gone out of businesses. Others were too busy to fill in the questionnaires and a few others were totally not available for the interview. The number of respondents who were finally interviewed was therefore 103 out of the sampled 119.

According to Neuman (2000), active response rate is calculated as follows:

$$na = \frac{\text{Total response}}{\text{Total No. of sample-}\{in\}eligible+ un\ reachable}$$

In our project, active response rate becomes

$$\frac{103 * 100}{119 - 4} = 89.6, \text{ say } 90\%$$

Willimack (2002) suggested that response rate for North America ranges between 50% and 65%. while. Neuman (2000) recommended 10% to 50% for postal surveys and 90% for face to face as reasonable. Our survey, being a researcher administered takes cognizance of all the above scholars' recommendations.

Data Analysis

This section presents graphical analysis as well as descriptive statistics of the variables used in the study and which conforms to Gall and Borg (1989) observations that “descriptive studies by nature emphasis interpretation”. Data was collected using a predominantly 5 point likert type scale. The choices were coded and so also were the questions to facilitate analysis. Data was organized under Family background, Business information, Relationship between technology adoption forms and MSE performance and other Technology issues of importance to MSEs.

4.1 Family Background

From the findings, majority of entrepreneurs were aged 21 to 25 years (38.8%), single (52.4%) and with zero to one child (71.8%). They had trade test professional qualification (45.6%) and 3 to 4 years of working experience (39%). These findings agree very well with our expectations that youths are either single or have just gone into family life. They have therefore very little or no resources; an assertion shared by the Ministry of youth affairs and sports in their draft strategic plan (GOK, 2006).

4.2 Business Information

4.2.1 Legal Form

The overall data on business profile indicates that 90.3% of entrepreneurs had a sole proprietorship form of business, 6.8% were in partnership, 1% was in companies and only 1.9% was in other types of business forms which included co-operative societies. Of all businesses, 31% were one to two years old in operation, 45.7% were three to four years, 17% were 5 to 6 years, 5% were 7 to 8 years and only 1.3% were over 8 years old in operation, These findings compare well with the national MSE baseline survey of 2004 which revealed that close to two thirds of all enterprises were in trade sector and that only 13 and 15 per cent respectively were involved in manufacturing and services (GOK, 2004). Trade sector mainly employs sole proprietorship form of businesses with few resources while manufacturing sector requires companies with many resources and large wealth of business experience. This implies that most entrepreneurs are young in the business. They have few resources, limited business networks and are also not well experienced to engage in large businesses like companies. Table 4.1 shows information on MSE legal forms.

Table 4.1 Information on MSE's Legal Forms

Legal form	Percent
Sole proprietor	90.3
Partnership	6.8
Ltd company	1.0
Others	1.9
Total	100.0

4.2.2 Business Activity

The study revealed that 11.7 % of all businesses are in the manufacturing sector, 47.6% in the service sector, 37.9% in the trade sector and only 2.9 % in others. These findings corroborate well with the Kenya national Micro and Small Enterprise baseline survey of 2004 which revealed that about two thirds of all enterprises were in trade sector and that only 13 and 15 per cent respectively were involved in manufacturing and services (GOK, 2004).

The results also compare fairly well with Gichira (2002) that MSES in Kenya have not invested much since they are young and small “firm size and age are major determinants of investment in technology; with old and large firms investing more”. This implies that these businesses are not able to benefit much from economies of scale. Table 4.2 shows entrepreneurs’ business activities

Table 4.2 Information on MSE’s Business Activity

Options	Percent
Production/ manufacturing	11.7
Service	47.6
Trade	37.9
Others	2.9
Total	100.0

4.2.3 Major Investment in Technology

The study revealed that 54% of all businesses had training as their major investment in technology, 28% in equipment, 16% in franchise and 2% on others. These findings tend to strengthen Ikiara's and UNIDO's assertion that education and on job training are drivers of adoption, survival and growth amongst enterprises and economies (Ikiara et al, 2005; UNIDO, 2004). Figures 4.1 show entrepreneurs' major investment in technology.

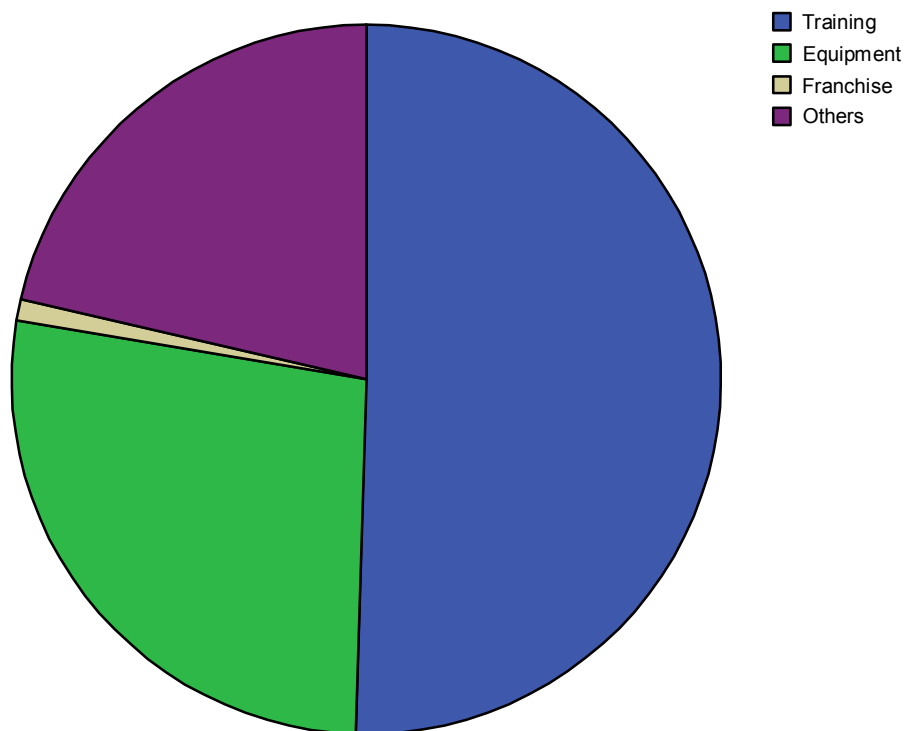


Fig 4.1 Major Investment in Technology and their frequencies

4.3 Variables on Pearson's Correlations Matrix

When independent variables are plotted against dependent variable on a Pearson's correlation matrix, they give an indication of how the two variables are related to each other through a combined mean correlation coefficient. A correlation coefficient of +1.00 implies that the variables are positively correlated; a situation which in our case would imply that technology is being adopted by youth led MSEs and is very well enhancing the MSE performance and thus giving them competitive advantage in the market. A correlation coefficient of -1.00 on the other hand would imply that the variables are negatively correlated and in our case, it would imply that technology is hindering youth led MSEs from performing and thus rendering them weak in their competitiveness.

4.3.1 Effect of Technology on MSE Product Quality Improvement

When the results of effect of technology adoption forms on MSE product quality improvement were plotted on the Pearson's correlation matrix, it is only conformance to legal requirements and financial resource management whose over all mean absolute correlation index was significant at the 0.01 level (2tailed test). This shows that use of appropriate technology, quality improvement techniques and ability to secure good business site were not significant and thus not helping much in MSE sustainability. These results disagree with Gichira et al. (2002) who stated that as a result of efficiently utilization of technology, MSEs become innovative and achieve improved product

consistency and reliability; better packaging technology for bulk markets; increased output to open up bulk markets and thus increased marketing independence. These results mean that technology is very crucial in improving MSEs product marketability, sales and market share. However, youth led MSEs are not benefiting much possibly because they have not invested adequately in the technology. Table 4.3 shows these results.

Table 4.3 Effect of Technology on MSE Product Quality Improvement

INDEPENDENT VARIABLES	Use of appropriate technology	use of quality improvement techniques	conformance to legal requirements	financial resource management	ability to secure good business site
Improving Product Reliability	-.055	.253(*)	.373(**)	.246(*)	.309(**)
Better Packaging	.221(*)	.084	.243(*)	-.133	.001
Greater Self Sufficiency in supplies	-.004	.144	.391(**)	.187	.109
Increased Market Independency	.002	.131	.543(**)	.175	.285(**)
Development of Skills	.197(*)	.158	.289(**)	.319(**)	.031
Increased Output	-.070	.114	.156	.480(**)	.152
Mean absolute correlation coeff	0.092	0.147	0.333(**)	0.257(**)	0.148
standard deviation	0.095	0.0578	0.134	0.127	0.128

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

List wise N=103

4.3.2 Effect of Technology Adoption Forms on MSE Product Marketability, Sales and Market Share

When asked the extent to which technology is addressing problems of lack of market, most respondents (38%) indicated fairly well, 29% of respondents said technology was of much help in addressing their marketing problems, 27% said it was not of much help while 6% were of the opinion that technology was either not of help or were non committal. These results concur very well with Gichira (2002) who defined technology capabilities as information and skills that allow productive enterprises to utilize equipment and technology efficiently. As a result of efficiently utilization of technology, MSEs become innovative and achieve improved product consistency and reliability; better packaging technology for bulk markets; increased output to open up bulk markets and thus increased marketing independence. The results mean that technology is very crucial in improving MSE's product marketability, sales and market share. Figure 4.2 represents respondents' views on how technology helps them solve problems of market.

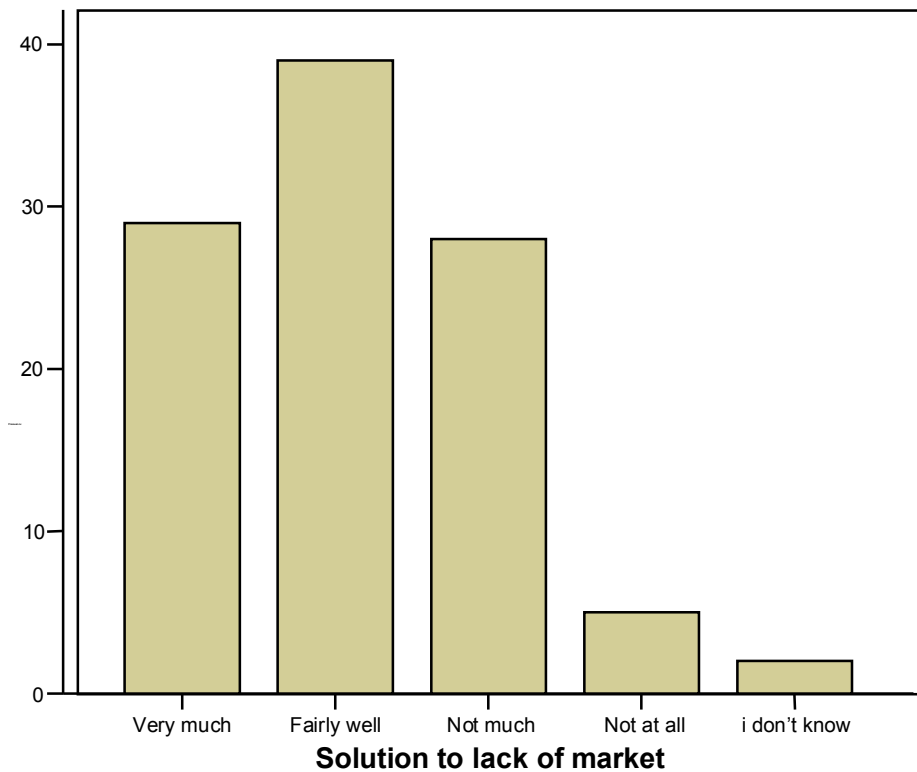


Fig. 4.2 How Technology Helps MSEs Solve Problems of market

When the results of effect of technology adoption forms on MSE product marketability, sales and market share were plotted on the pearson’s correlation matrix, use of quality improvement techniques and financial resource management were found to have an overall mean absolute correlation index significant at the 0.01 level (2tailed test) while conformance to legal requirements had a correlation coefficient significant at 0.05 level (2 tailed test). This shows that use of appropriate technology, and ability to secure good

business sites were not significant and thus not helping much in MSE ability to solve market related problems. These results are in line with Gichira (2002) assertion that through technology, MSEs become innovative and achieve improved product consistency and reliability; better packaging technology for bulk markets; increased output to open up bulk markets and thus increased marketing independence. The results mean that technology adoption was fairly effective in improving MSE's product marketability, sales and market share. Table 4.4 shows these results.

Table 4.4 Effect of Technology on MSE Product Marketability, Sales and Market Share

INDEPENDENT VARIABLE \ DEPENDENT VARIABLE	Use of appropriate technology	use of quality improvement techniques	conformance to legal requirements	financial resource management	ability to secure good business site
Solution to lack of market coping with competition	-.095	.287(**)	.174	.213(*)	.203(*)
Product innovation and difference	-.166	.215(*)	.283(**)	.296(**)	.304(**)
Mean absolute correlation coeff	0.124	0.266(**)	0.203(*)	0.257(**)	0.180
standard deviation	0.037	0.045	0.071	0.042	0.137

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

List wise N=103

4.3.3 Effect of Technology on MSE Financial Resources Management

Respondents' views on financial management had 38.8% saying that technology helps them identify refinancing needs and secure financial resources quiet well. 47.8% said technology helps them fairly well, 13.6% said technology does not help them much while

only 3.9% said that technology does not help them at all. These results are similar to Biggs et al (1995) and Gichira (2002). According to Gichira (2002), technology helps MSEs achieve effectiveness of financial assistance and strengthens communication channels. Buainainn (2002) states that appropriate technology help MSEs to operate in low-skill spheres with local materials and resources. This implies that through technology, MSEs are able to conserve their meager profits. Equally, Biggs et al. (1995) states that high technology firms which have invested in research and development, foreign technical licenses and technical assistance contracts have higher productivity than lower technology firms. He proceeds to say that investment in technology add about 25% to value added (Biggs, 1995). These findings show that technology is of great importance in enhancing MSE's financial management. Entrepreneurs' views on importance of technology in identifying needs and Securing Financial resources is represented in table 4.5

Table 4.5: Financial Resources Management

Options	Percent
Very much	38.8
Fairly well	42.7
Not much	13.6
Not at all	3.9
Total	100.0

When the results of effect of technology adoption forms on MSE financial management were plotted on the Pearson's correlation matrix, conformance to legal requirements and financial resource management were found to have an overall mean absolute correlation index significant at the 0.01 level (2-tailed test) while use of quality improvement techniques and ability to secure good business site had an overall correlation coefficient significant at 0.05 level (2-tailed test). This shows that it is only use of appropriate technology which was not significant and thus not helping much in MSE financial management. These results conform well to Gichira (2002), in that technology helps MSEs achieve effectiveness of financial assistance and strengthens communication channels; and Stevenson and Onge (2005) who asserted that an empowered financial resource woman manager would increase level of viability of the woman as an entrepreneur. However, the results disagree with Buainainn (2002) who states that appropriate technology help SMEs to operate in low-skill spheres with local materials and resources. This implies that through technology, MSEs are able to conserve their meager profits; but as indicated by results which are strengthened by Buainainn (2002) assertion, youth led MSEs are not benefitting much from appropriate technology possibly because they have not invested in the technology. Table 4.6 shows these results.

Table 4.6: Effect of Technology on MSE Financial Management

DEPENDENT VARIABLE \ INDEPENDENT VARIABLE	Use of appropriate technology	use of quality improvement techniques	conformance to legal requirements	financial resource management	ability to secure good business site
Identifying Refinancing Needs	-.091	.193	.181	.331(**)	.169
Securing Sources of B. Finance	.107	.297(**)	.362(**)	.380(**)	.056
Business Risk Minimisation	-.174	.254(*)	.458(**)	.243(*)	.327(**)
<u>Uncertainty Avoidance</u>	<u>-.055</u>	<u>.223(*)</u>	<u>.485(**)</u>	<u>.209(*)</u>	<u>.277(**)</u>
Mean absolute correlation coeff	<u>0.107</u>	<u>0.242(*)</u>	<u>0.372(**)</u>	<u>0.291(**)</u>	<u>0.207(*)</u>
standard deviation	0.050	0.044	0.138	0.079	0.120

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

List wise N=103

4.3.4 Effect of Technology Adoption on MSE Performance

When the results of effect of technology adoption forms are plotted against MSE performance on the pearson’s correlation matrix, it is only conformance to legal requirements and financial resource management which had an absolute correlation index significant at the 0.05 level (2 tailed test). This shows that use of appropriate technology, quality improvement techniques and ability to secure good business site were not significant and thus not helping much in MSE sustainability. This implies that technology adoption had very little effect on performance of youth led MSEs; a position shared by the Government of Kenya’s assertion that “MSEs have very restricted levels of technology, inappropriate technology and inadequate institutional capacity to support adaptation and absorption of modern technological skills. Such enterprises suffer from lack of information on existing technologies and are exposed to a weak environment that

hampers coordination and transfer of technology. They have no way of gauging appropriateness of technology“(GOK, 2003). Table 4. 7 represents this effect of technology adoption on performance ofMSEs.

Table 4.7 Effect of Technology Adoption on MSE Performance

INDEPENDENT VARIABLE	Use of appropriate technology	use of quality improvement techniques	conformance to legal requirements	financial resource management	ability to secure good business site
Faster Production	.065	.217(*)	-.058	.152	.279(**)
Saving on Labour Cost	.015	.093	.056	.315(**)	.123
Saving on Time	-.013	.193	.230(*)	.293(**)	.194
Substitute for Cheaper Material	-.215(*)	.043	.416(**)	.135	.144
Increase Production Efficiency	-.209(*)	.209(*)	.158	.155	.254(**)
Reduced Operation Costs	-.251(*)	.231(*)	.380(**)	.426(**)	.177
<u>Reduced working Capital Required</u>	<u>-.133</u>	<u>.073</u>	<u>.234(*)</u>	<u>.213(*)</u>	<u>.061</u>
Mean absolute correlation coeff	0.129	0.151	0.203(*)	0.241(*)	0.176
standard deviation	0.171	0.080	0.184	0.108	0.066

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

List wise N=103

4.3.5 Effect of technology adoption forms on MSE sustainability

When the results of effect of technology adoption forms on MSE sustainability were plotted on the pearson’s correlation matrix, it is only conformance to legal requirements whose overall mean absolute correlation index was significant at the 0.01 level (2tailed test) and financial resource management where correlation coefficient was significant at 0.05 level (2 tailed test). This shows that use of appropriate technology, quality

improvement techniques and ability to secure good business site were not significant and thus not helping much in MSE sustainability, These results are further validated by findings of Biggs et al (1995) and Gichira (2002) that firms in Africa have not invested much since they are young and small and that most of their investment in technology is in training. This implies that these businesses are not able to reap much from emerging technologies as they have invested in only one form, training. Table 4.8 shows this relationship

Table 4.8; Effect of Technology on MSE Sustainability

INDEPENDENT VARIABLE \ DEPENDENT VARIABLE	Use of appropriate technology	use of quality improvement techniques	conformance to legal requirements	financial resource management	ability to secure good business site
Solution for customer complaints	-.072	.278(**)	.272(**)	.121	.244(*)
Customer retention	-.248(*)	.014	.241(*)	.216(*)	.285(**)
Reclaim lost customers	-.226(*)	.256(**)	.506(**)	.172	.298(**)
Culculate profits and losses	.112	.002	.148	.300(**)	.027
Business record Keeping	.283(**)	.301(**)	.177	.384(**)	.008
Mean absolute correlation coeff	0.1882	0.1702	0.2688(**)	0.2386(*)	0.1724
standard deviation	0.091	0.149	0.141	0.104	0.143

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

List wise N=103

4.3.6 Challenges in Using Components of Technology Adoption

When responding to challenges they face, sixty eight per cent of respondents felt that the major challenge they face is inadequate financial resources.13% indicated that lack of relevant skills constitute their number one challenge; 11% lamented that frequent

machine break downs are their major handicaps and 8% talked of inefficient and slow machines. These findings are similar to Moyi (2005) who observes that Kenya's productive and investment capability is constrained by factors such as high cost of equipment and machine components and Gichira (2002) who concludes that widening gap between the technological capabilities employed by African firms and those firms in other parts of the world are caused by inadequate funds. These discussions imply that the most important challenge in using components of technology is inadequate finances. The results are represented in figure 4.3.

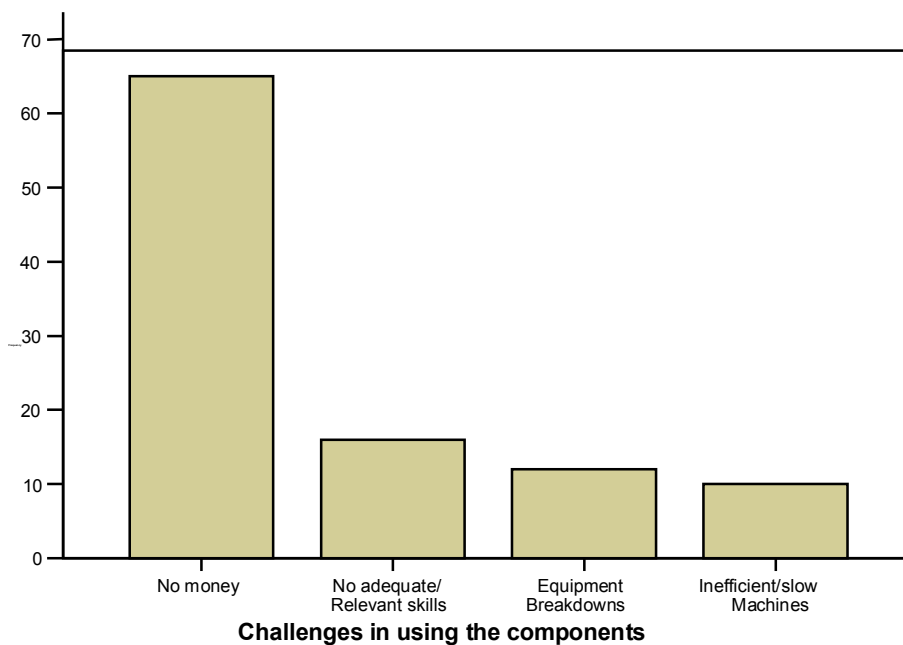


Fig.4.3 Challenges in Using Technology Components

4.3.7 Improvement Interventions for Technology Adoption

When asked to suggest improvement interventions that they feel appropriate, most entrepreneurs (68%) stated that a major improvement intervention for their MSEs is to be financed. 18% said they need to be trained; 11% said for their businesses to be helped they need to be linked to suppliers while 3% talked of other varied interventions. These findings corroborate well with youth fund's assertion that skills acquisition is necessary but not sufficient to improve MSE performance (GOK, 2006). To supplement the skills, youth entrepreneurs also need to be funded. Second in the list of improvement interventions is provision of relevant skills which is supported by 18% of the respondents; and compare well with observations that advantages associated with new technologies are seldom realized without a learning intensive process of experimentation, modification and adaptation to the specific circumstances of the firm. In conclusion, financing and entrepreneurship training are two major interventions necessary to assist MSEs improve their technological adoption capabilities. Figure 4.4 shows respondents' suggestions on improvement interventions in use of technology components

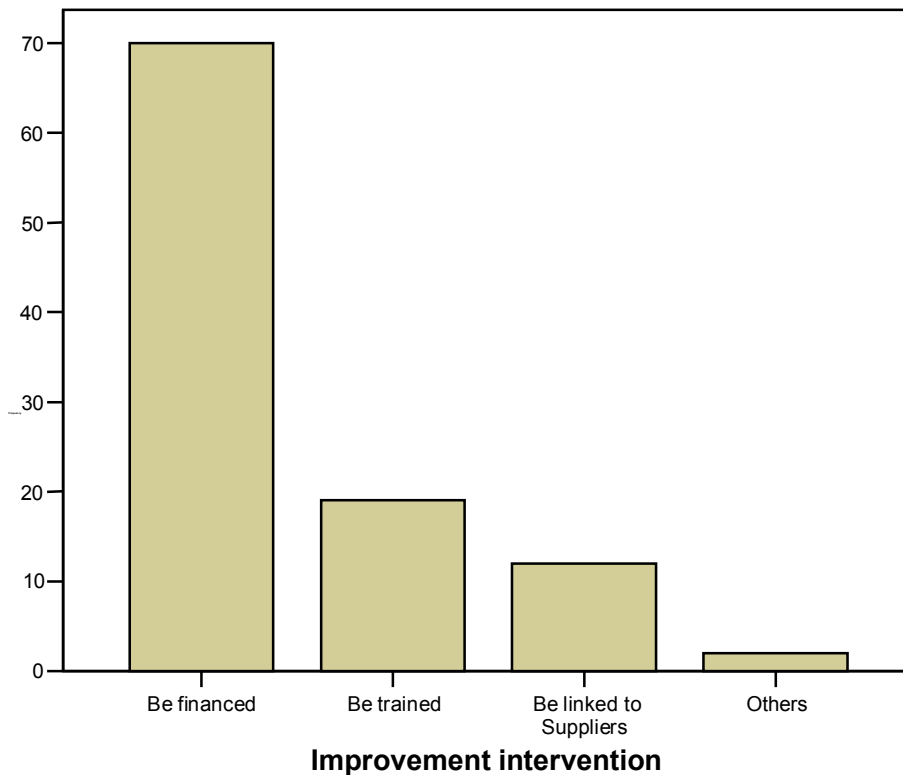


Fig.4.4 Interventions in Use of Technology Adoption Components

4.4 Use of Appropriate Technology

For effects of appropriate technology on business competitiveness, 32% of respondents said it helps them increase their sales, 28% stated it improves quality, 19% talked of increasing efficiency while 16.5% said it improves their customer royalty.

These results bring out two most important outcomes that technological assistance to MSEs can achieve, also mentioned by Gichira (2002) and Government of Kenya (G O K, 2005). The two achievements from use of appropriate technology are improvement of quality of products and increase in sales volume of an enterprise. This is reflected in table 4.9 and figure 4.5 and shows that most entrepreneurs perceived use of appropriate technology is helping them to increase their sales volume and improve quality of their products to enhance their competitiveness.

Table 4.9 Effect of Appropriate Technology on MSE Competitiveness

Options	Percent
Quality products	28.2
Increased sales volume	32.0
Reduced waste	3.9
Fast/ efficient production	19.4
Customer loyalty/repeat buying	16.5
Total	100.0

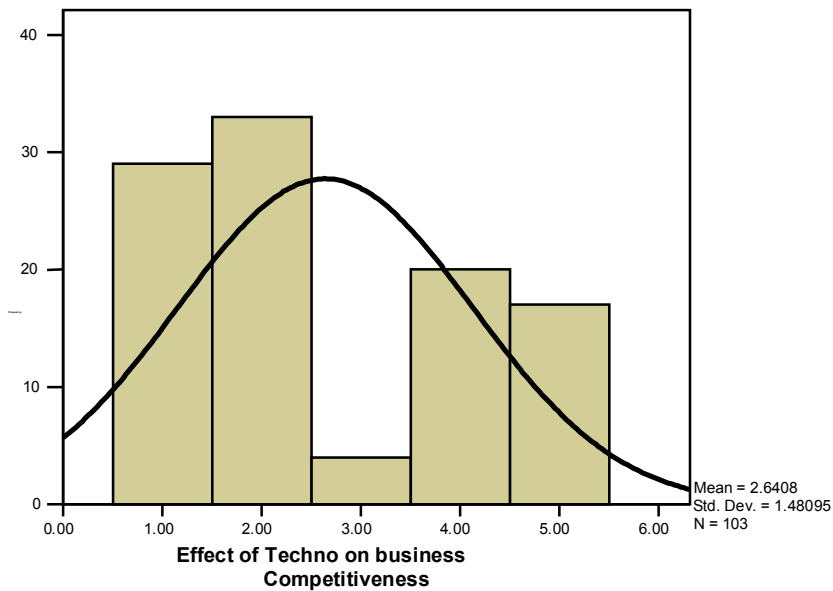
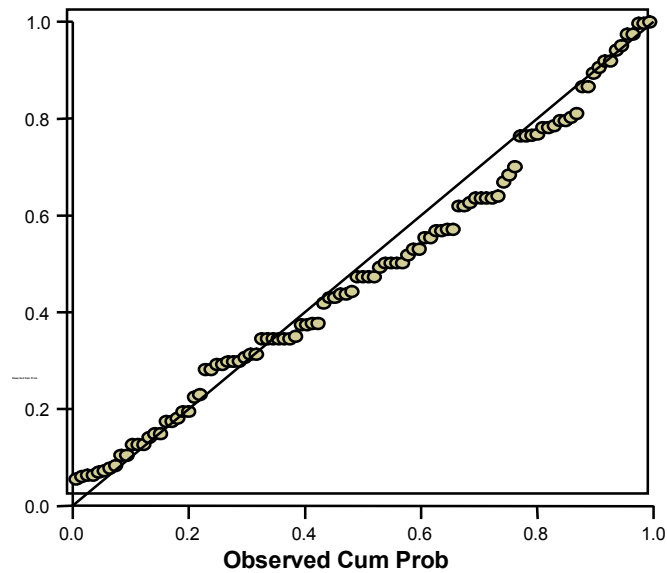


Fig. 4.5 Effect of Appropriate Technology on MSE Competitiveness

When plotted on a normal regression graph, effect of technology as perceived by entrepreneurs and business competitiveness produces a perfect positive regression line.

This implies that there is a one-on-one relationship between the two variables (effect of Appropriate Technology as perceived by entrepreneurs and their enterprise competitiveness). This is similar to ILO/UNDP (2000) expectations that the purpose of technology is to improve productivity of enterprises and help them withstand local and international competitions.

According to Gichira (2002), technology has proved to be the engine of economic growth when applied to micro and small enterprises amongst ‘Asian Tigers’. Lastly, Moyi and Njiraini (2005) say that technology is a key source of growth and competitiveness. They conclude that ability to use technology is best measured by the production and investment capabilities. These results therefore imply that Technology is very effective in enhancing entrepreneurs’ business competitiveness. Figure 4.6 represents the relationship between Effect of Appropriate Technology and MSE Competitiveness.



Normal P-P Plot of Regression Standardized Residue

Fig. 4.6 Effect of Appropriate Technology on MSE Competitiveness.

4.4.1 Effect of Use of Quality Improvement Techniques on MSEs

When asked to state the extent to which use of quality improvement techniques addresses their MSE performance, (42%) indicated very much; 35% fairly well; 14.6% said not much and 8.7% stated not at all. These results corroborates fairly well with Gichira (2002). According to Gichira, technology in form of human capital helps MSEs achieve effectiveness of financial assistance and strengthens communication channels. Buainainn (2002) on the other hand states that appropriate technology help MSEs to operate in low-skill spheres with local materials and resources. This implies that through quality improvement techniques, MSEs perceive that they are able to enhance their business performance. These findings are represented in table 4.10.

Table 4.10: How Quality Improvement Techniques Serve my MSE Needs

Options	Percent
Very much	41.7
Fairly well	35.0
Not much	14.6
Not at all	8.7
Total	100.0

4.4.2 Challenges faced in Applying Quality Improvement Techniques

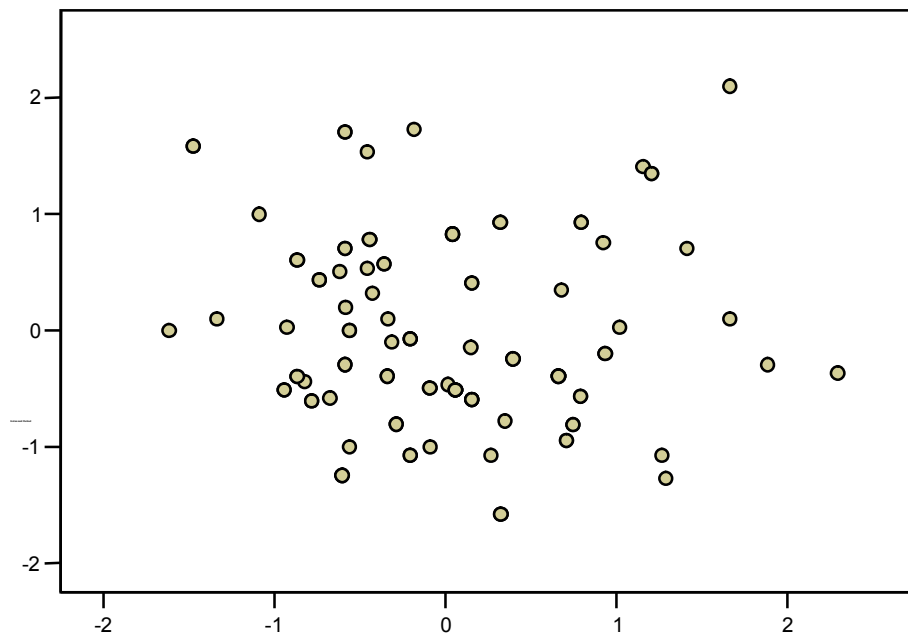
When asked the challenges they face in applying quality improvement techniques, 49% of the respondents said they have insufficient funds. Inappropriate skills were mentioned by 22.3%, and inefficient machines were mentioned by 18.4%. 11% however said their major challenge in applying the technique was lack or insufficient information. These results concur well with Moyi (2005) who observes that Kenya's productive and investment capability is constrained by factors such as high cost of equipment and machine components and Gichira (2002) who concludes that widening gap between the technological capabilities employed by African firms and those employed by firms in other parts of the world are caused by inadequate funds. These discussions imply that the most important challenge in using quality improvement techniques is insufficient funds. These results are represented in table 4.11

Table 4.11; Challenge Faced In Applying Quality Improvement Techniques

Options	Percent
No/ little money	48.5
No/inappropriate skills	22.3
No efficient machines	18.4
No/little information	10.7
Total	100.0

4.4.3 Relationship between Quality Improvement Techniques and increased output

When respondents' views on use of quality improvement techniques are plotted on a scatter diagram against its effect on increased output, the results show a positive correlation between use of quality improvement techniques and performance of MSE (increased output). However, this relationship is very weak. This concurs well with (UNIDO, 2004) that MSEs lack capabilities to produce efficiently, meet deadlines, upgrade product quality and evolve new product design. This implies that MSEs are not benefiting much from use of the technique; possibly because they lack capabilities to use the technique. These results are represented in figure 4.7.



Partial Regression Plot

Use of quality improvement techniques; Dependent Variable- increased output

Fig. 4.7: Use of Quality Improvement Techniques

4.5 Conformance to Legal Requirements

Regarding conformance to legal requirements, 23.7% of the respondents said that their business was performing very well as a result of conformance to legal requirements; 31% said that conformance to legal requirements enables their business to perform fairly well;

32% said that conformance to legal requirements has very little effect on performance of their MSEs while 13.6% of them felt that conformance to legal requirements do not at all improve MSE's performance

These results concur fairly well with Gichira, Amondi, njoroge and Kabugua (2002) that MSEs in Kenya do not perform well because of too much harassment from local authorities for failure to adhere to legal regulations. Among the acts whose requirements that MSEs are unable to fulfill include security and encryption, copyright and intellectual property rights. Payment regulations, cross border commerce taxation, tariffs, and duties, fraud and other commercial crimes, legal framework contracts, jurisdiction and applicable law, liability for content and privacy (Gichira et al, 2002). Likewise, Stevenson and Onge (2005) laments that a burdensome and costly regulatory environment, unfavorable tax regime, inefficient legal and judicial system, and insecurity of tenure are among the major constraints in the MSE sector in Kenya.

From these discussions, it may be construed that MSEs find it hard to satisfy legal requirements as they are beyond their reach. This constraints MSE's businesses and leaves very little room for positive comparison between business performance and conformance to legal requirements. Table 4.12 represents respondents' views on effect of Conformance to Legal Requirements on their business performance.

Table 4.12 Effect of Conformance to Legal Requirements

Options	Percent
Very much	43.7
Fairly well	31.1
Not much	11.7
Not at all	13.6
Total	100.0

4.5.1 Interventions Necessary to Fulfill Legal Requirements

When asked to suggest Interventions Necessary to Fulfill Legal Requirements, 82% of respondents said they would like authorities to reduce license fees, 16% stated they would like youths to be exempted from paying license fee and 2% talked of other suggestions. These findings correspond fairly well with Gichira et al (2002) who argued that a suitable legal and regulatory framework should be in place to enable MSEs to respond appropriately while concurrently protecting local enterprises and consumers from unfair and unsafe practices. Among the rules that need to be adapted are laws on removal paper-based obstacles, they said (Gichira et al, 2002). Figure 4.8 represents respondents' suggestions for enabling them to fulfill legal requirements.

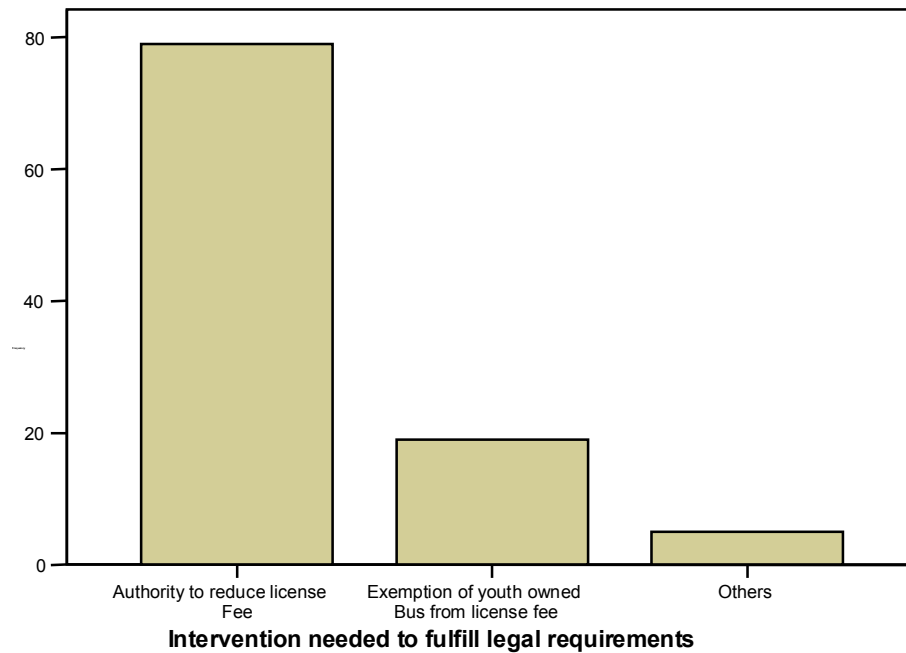


Fig. 4.8 Interventions Necessary to Fulfill Legal Requirements

4.6 Financial Resource Management

While responding to questions relating to financial resource management, 42.7% of respondents felt that financial resources management affects their MSEs performance very much., 44% said it affects their performance fairly well, 12% said it does not affect them much while 2% said financial resource management does not at all affect their business performance. These findings corroborate quiet well with Buainainn (2002) who states that appropriate technology help MSEs to operate in low-skill spheres with local materials and resources. Stevenson and Onge (2005) said an empowered financial

resource woman manager would increase level of viability of the woman as an entrepreneur and the role their collective and individual enterprises play in the economy; and promote credible role models as a way of inspiring other women to pursue entrepreneurship as an employment and create awareness of the barriers faced by women entrepreneurs in the process of starting and growing enterprises and the strategies required in overcoming them. This implies that through financial resource management, MSEs are able to conserve their meager profits, plough them back to enhance their business productivity, growth and competitiveness. Table 4.13 illustrates entrepreneurs' perception on the effect of financial resources management to their business performance

Table 4.13 Effect of Financial Resource Management

Options	Percent
Very much	42.7
Fairly well	43.7
Not much	11.7
Not at all	1.9
Total	100.0

4.6.1 Intervention Needed to Manage Business Financial Resources

When responding to questions on interventions necessary to enable entrepreneurs' enhance their financial resource management, 58% of respondents felt that their MSEs need funding at cheap interest rate to be able to compete favorably with others; 34% said they need to be given grants; 6% said they need to be trained and 2% talked of other interventions. These findings corroborate well with the Ministry of Youth Affairs and

Sports objective of increasing young entrepreneurs' access to cheap loans through the Youth Enterprise Development Fund (GOK, 2006).

The results also fairly agree with the Government of Kenya (GOK, 2004) assertion that most MSEs lack capacity to adopt modern technologies because decisions relating to cost aspect rests with multinational corporations. Likewise, Moyi (2005) observes that Kenya's productive and investment capability is constrained by factors such as high cost of equipment and machine components and Gichira (2002) says that widening gap between technological capabilities employed by African firms and those employed by firms in other parts of the world are caused by inadequate funds. Figure 4.9 represents respondents views on Intervention needed to manage business financial resources

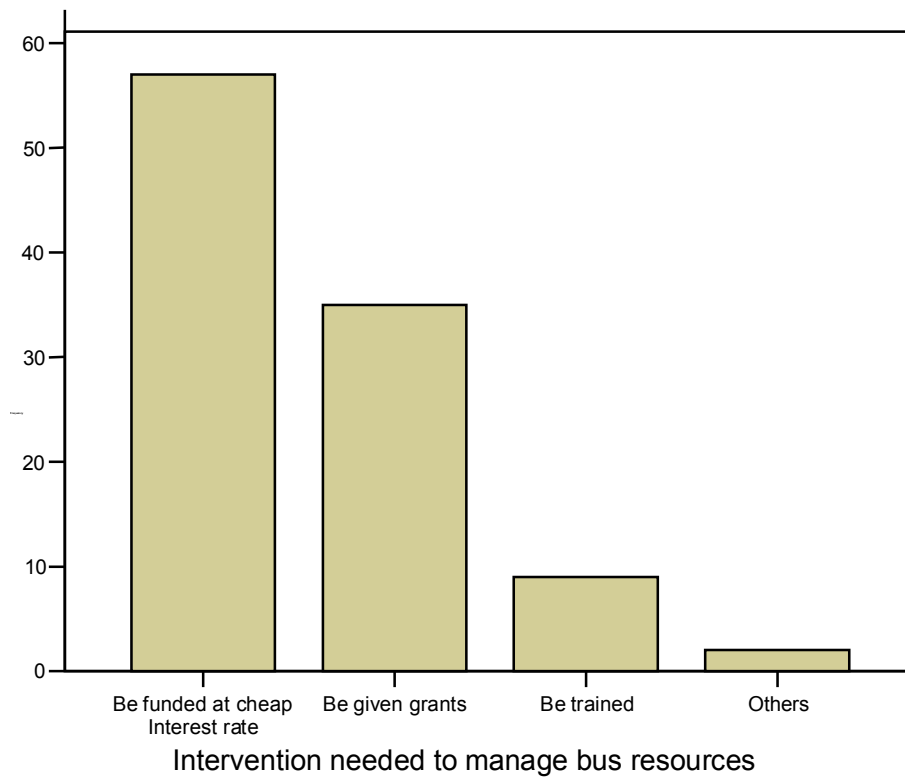


Fig. 4.9: Interventions Needed to Manage MSE Resources

4.7 Ability to Secure Appropriate Business Site

When asked to indicate the extent to which their business is performing as a result of being able to secure appropriate business site, 50.5% of respondents said that their ability to secure good business site affects their MSE performance very much. Thirty six percent (36%) said it affects their MSE fairly well and 14% said it does not affect them much.

These findings concur fairly well with Stevenson and Onge (2005) who observed that one of the major constraints faced in the MSE sector is deteriorating infrastructure which impacts negatively on MSE's competitiveness and Gichira et al (2002) who states that one of the major mistakes made by MSEs is to design a site that makes it difficult for customers to identify the advantages of their products. These discussions lead us to conclude that those who are able to secure a good business site benefit immensely from the site. However, many of MSEs are not able to secure appropriate business sites due to the high business rents charged, difficulties of getting business premise in a good business site and high goodwill charged among others. These results are represented in table 4.14 and figure 4.10

Table 4.14 Effect of Ability to Secure Appropriate Business Site

Options	Percent
Very much	50.5
Fairly well	35.9
Not much	13.6
Total	100.0

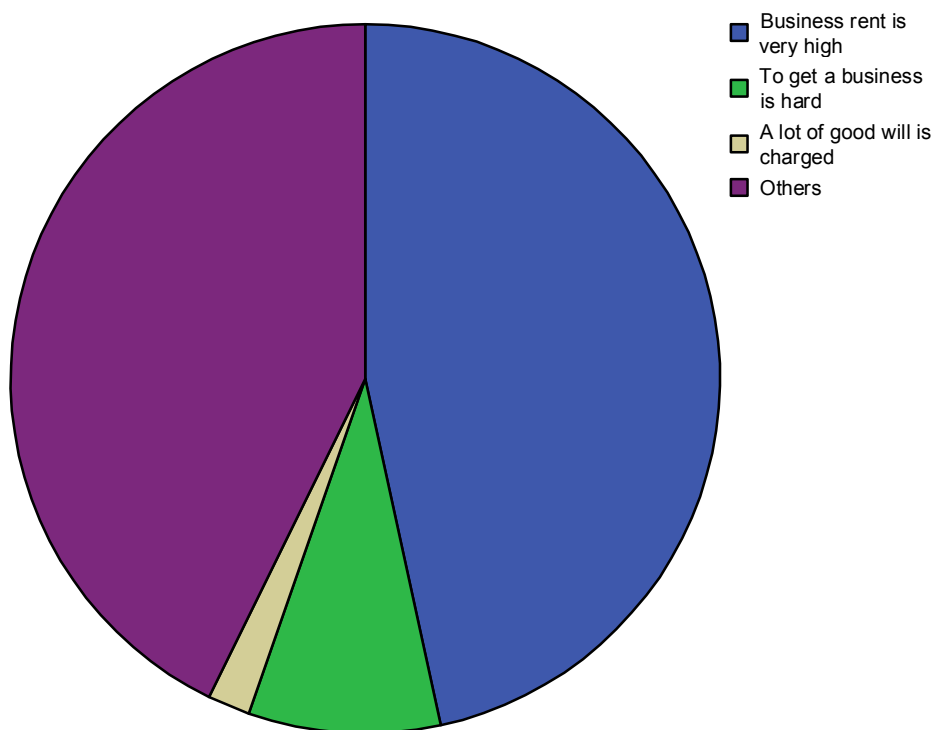


Fig. 4.10 Other Business Physical Location Issue.

4.7.1 Interventions needed to improve business site

When asked to state intervention measures necessary to improve their business site, 35% said authorities need to construct industrial parks, 25% suggested that authorities ought to construct feeder roads, another 25% talked of provision of water and other amenities by the Government, 12% said their products need to be popularized and 3% talked of

other intervention measures. These results corroborate well with Stevenson and Onge (2005) who argued that any growth progression of Jua Kali to small and medium sized enterprises must be accompanied by attention to premises which should be a translation from Jua Kali sheds to industrial parks to export processing zones, to individually owned plots. Like the study results, Stevenson and Onge (2005) recommended that the Government could elect small sheds on Government-owned land. Figure 4.11 represents these findings.

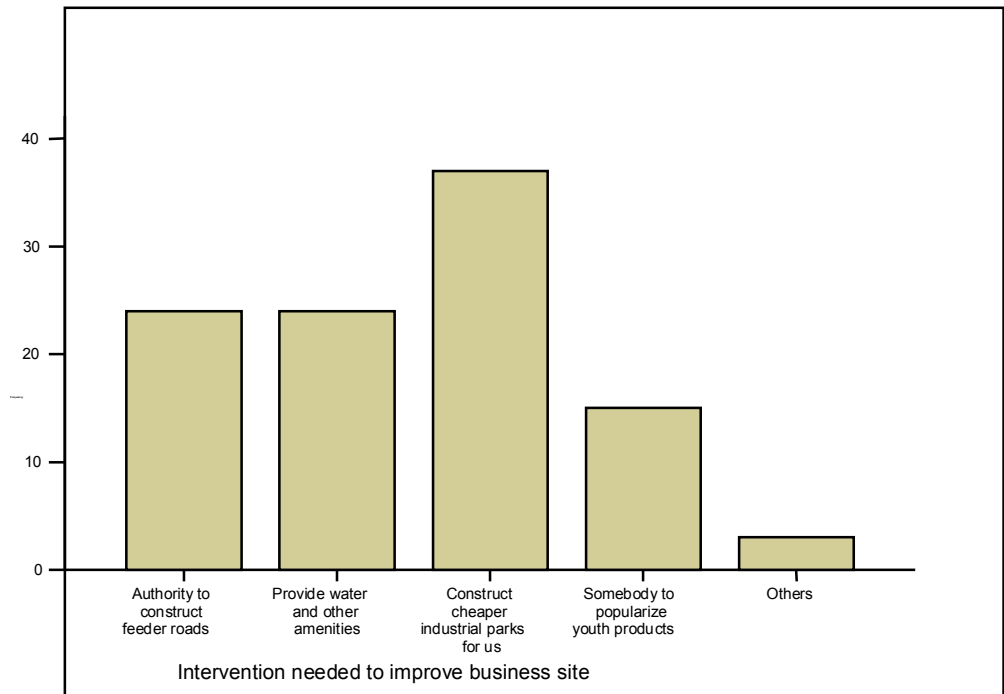


Fig. 4.11 Interventions Needed to Improve Business Site.

Summary of the results

Family Background

The study established that most entrepreneurs have young families of 0 to 1 child. They are aged 21 to 25 years and have little or no resources.

Business Information

Most businesses were found to be sole proprietorship and in the service industry. Their major investment in technology is training.

Effect of Technology Adoption Forms on Business Performance

Appropriate Technology

Most respondents perceived that use of appropriate technology was helping a lot in increasing their business sales volume as well as improving quality of their products.

However, from Pearson's correlation matrix, appropriate technology and MSE performance are not well correlated as they have an absolute correlation coefficient mean of 0.129. Among major challenges that they face while using Appropriate Technology include insufficient financial resources, irrelevant skills as well as frequent machine break downs.

Quality Improvement Techniques

From the analysis, most entrepreneurs felt that use of quality improvement techniques helped them much to improve their business performance. However 23% of them do not feel its effect, possibly because they are not using it effectively. The scattered diagram on the other hand showed that there is a very weak positive relationship between the techniques and the MSE performance. Pearson's correlation matrix equally shows a weak absolute correlation coefficient mean of 0.151. Major challenges encountered in

applying the techniques in order of magnitude are insufficient funds, in appropriate skills and inefficient machines

Conformance to Legal Requirements

Most respondents felt that technology is enabling them to conform to legal requirements which are impacting fairly well on their business performance. From the scatter diagram however, it seems there is a very weak correlation between MSE performance and conformance to legal requirements. Pearson's correlation matrix, illustrates an equally weak correlation between the two variables of an absolute mean correlation coefficient index of 0.203. Among key challenges for conformance to legal requirements is too high license fee, and a major intervention measures suggested to assist youth led MSEs fulfill legal requirements is reduction of license fee by authorities.

Financial Resource Management

Most respondents felt that financial resources management affects their MSE performance fairly well. The scatter diagram shows an overall positive but weak relationship between financial resources management and MSE performance. A close look at Pearson's correlation matrix equally reveals a fairly weak absolute correlation coefficient of 0.241. Among intervention measures suggested to ease challenges in financial resources is to be funded at cheap interest rates.

Ability to Secure Good Business Site

Most respondents felt that their ability to secure good business site affects their MSE performance very well. From the scatter diagram, there was a weak positive relationship between ability to secure a good business site and MSE performance. Pearson's correlation matrix also shows a very weak absolute correlation coefficient mean of 0.176. Among major challenges regarding business location is that business rent is very high and to get a business premise in a good site is very hard. Key intervention to ease their problem of business location is for the authority to construct cheaper industrial parks.

4.8 MSE Technology Adoption Model

The above conclusions may be summed up in form of an MSE technology adoption model which shows that dependent variables are a function of investment in technology. Consequently, these variables affect performance of MSE which in turn influences the type of investment in technology that the MSE adopts.

As youths start their own enterprises, they have very little capital, little business experience and have not established much business networks. They will therefore not be performing well and will invest mainly in training and purchase of the few equipment that they need. This minimal investment in technology will result to inadequate and inappropriate technology adoption forms, and consequently to ineffective MSE

performance. This vicious circle of poor performance may however be broken at any level through some intervention measures.

As the MSE breaks this vicious circle of poor performance and moves to the next level of performance, they will have more resources and business networks and will recognize the need to invest more in various types of technology. This will result to better technology adoption forms and consequently to improvement in their MSE performance. The MSE will therefore generate more resources to invest more in the technology. This process goes on and on and thus becomes cyclic in nature. The variables may be explained as follows:

Investment in Technology (Intervening Variable)

Youth led MSE's investment in technology occurs in any of the following four major forms; Training, Purchase of equipment, Franchising or Sub contracting. The study showed that training was the major form of investment in technology, followed closely by purchase of equipment while franchising and sub contracting were minimally adopted. The major extraneous variable which influenced the type of investment in technology as discovered from the study was high costs of investments involved and irrelevant skills with most youth.

Highly performing MSEs are expected to have accumulated enough resources, networks and knowledge to be able to franchise, sub contract or purchase technology in form of

equipment. However, most of youth led MSEs (respondents) were young in business, poorly performing and not well established and thus did only invest in training and purchase of equipment.

Forms of Technology Adoption (Independent variables)

The study conceptualized that technology adoption would form dependent variables and that their effects were expected to impact positively on performance of MSEs. This technology adoption took the following forms; use of appropriate technology, effective use of quality improvement techniques, conformance to legal requirements, financial resources management and ability to secure appropriate physical location for business. The study found out that all the five forms were adopted by most MSEs and they in turn affected their businesses positively and in various ways. Their impacts were however hindered by intervening variables which were mainly in form of high costs involved and irrelevant skills with most respondents. Moderating variable expected to facilitate technology adoption was government policies and availability of information communication technology equipment which the study revealed was not much accessible to youth since most of them feared technology and were also not financially able to acquire the equipment.

Effects of Technology Adoption on MSEs Performance (Dependent Variable)

From the study, it was discovered that technology adoption had the following results on MSEs; there was improvement of product and service quality, increased efficiency, increased output and sales volume, improved sustainability and increased profitability

and market share amongst MSEs. These profits were then re-invested in technology and depending on the amount, did influence the type of investment in technology; thus forming the cyclic model as shown below.

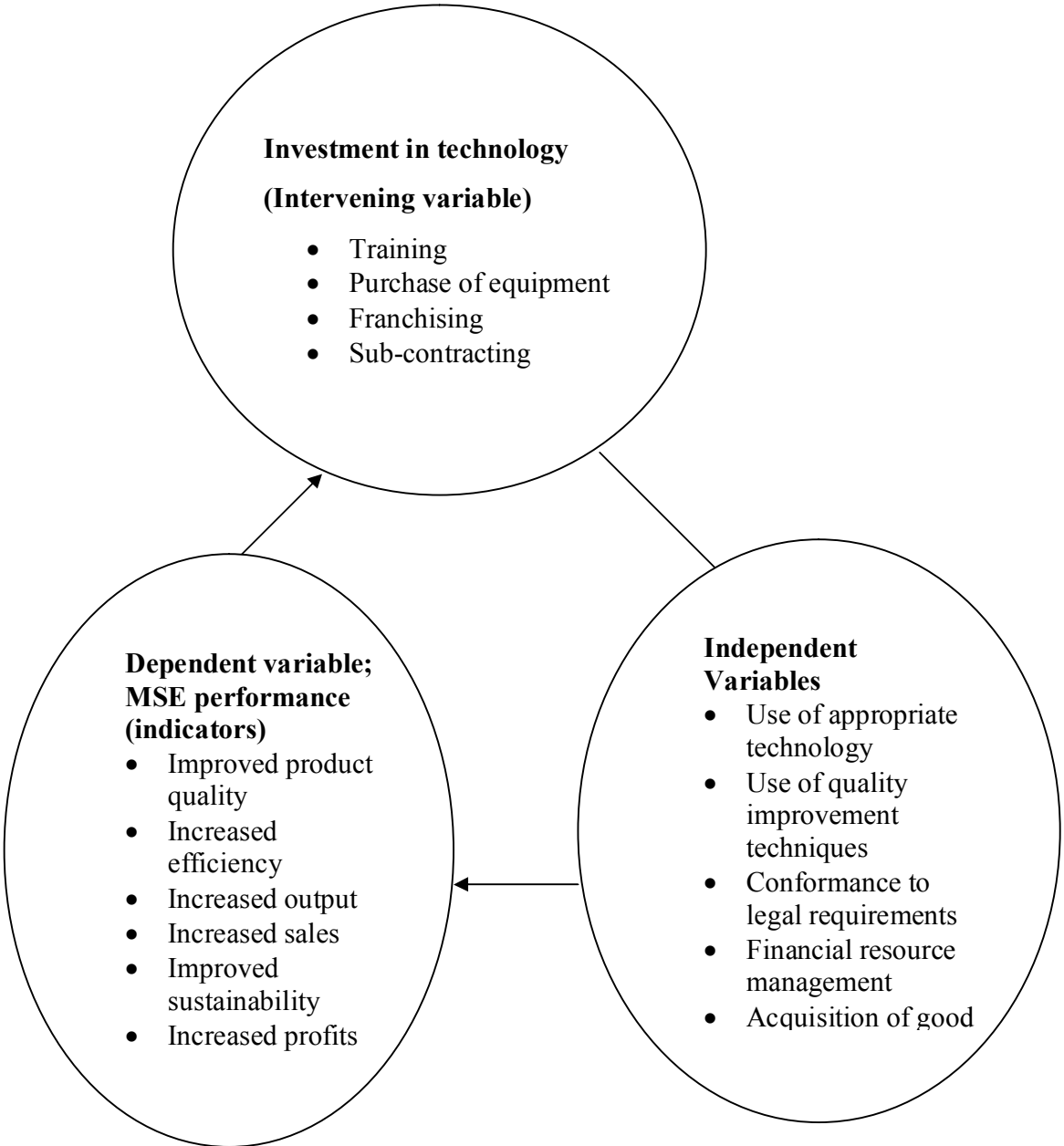


Figure 4.12: MSE Technology Adoption Model

CHAPTER FIVE

5.0 DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

Introduction

This chapter examines the research questions formulated in relation to the findings obtained. Conclusions and recommendations are subsequently given being based on information generated from the analysis of the questionnaire.

5.1 Discussion

5.1.1 Family and Business Information

Results from the findings showed that most respondents were 21 to 25 years old, single with zero or one child. Their business are sole proprietorship and in the service sector.

These businesses major investment in technology is training

5.1.2 Use of Appropriate Technology

The effect of Use of appropriate technology was found to be very low and compares well with moyi (2005) and Gichira (2002) who observes that Kenya's productive and investment capability is constrained by factors such as high cost of equipment and machine components and inadequate funds; and Moyi (2005) who observes that Kenya's productive and investment capability is constrained by factors such as high cost of equipment and machine components;

Challenges encountered in effective use of appropriate technology were found to be insufficient finances and irrelevant skills since due to insufficient funds, most MSEs have invested in only one form of technology; training

Interventions suggested as necessary to enhance effective use of appropriate technology were frequent upgrading of MSE's Entrepreneurship and Management skills through refresher courses; and MSEs to be provided with adequate finances and relevant tools and equipment by the government

5.1.3 Use of Quality Improvement Techniques

The effect of Use of quality improvement techniques was found to be low in enhancing MSE performance, which is similar to Stevenson & Onge (2005) views that studies in African countries reveal that Africa exhibits much more inter firm technological heterogeneity than other developing regions (due to lack of funds)

Challenges encountered in effective use of Quality Improvement Techniques were found to be irrelevant skills, insufficient finances and lack or irrelevant tools and equipment as suggested by Mwobobia (2012).

To enhance effective use of Quality Improvement Techniques, interventions suggested as necessary were frequent upgrading of MSE's entrepreneurship and management skills

through refresher courses, provision of adequate finances at cheap interest rates and provision of relevant tools and equipment by the government

5.1.4 Conformance to Legal Requirements

The effect of conformance to legal requirements was found to be low in enhancing MSE performance, which is similar to Gichira et al. (2002) who stated that MSES in Kenya do not perform well because of too much harassment from local authorities for failure to adhere to legal requirements

Challenges encountered in conforming to legal requirements were found to be too high license fee charged by the local authorities and which concurs with Muteti (2005).

Major intervention measures suggested to assist youth led MSEs fulfill legal requirements is reduction of license fees by authorities.

5.1.5 Financial Resource Management

The effect of Financial Resource Management in enhancing MSE performance was found to be low which conforms to Moyi (2005) in that Kenya's productive and investment capability is constrained by factors such as high cost of equipment and machine components, Gichira (2002) who says that technological assistance (in form of financial management) helps MSEs to achieve faster production, labor time savings, substitution of cheaper materials, increased process efficiency, greater effectiveness of

financial assistance and strengthened communication channels. Equally, Buainainn (2002) states that appropriate technology help MSEs to operate in low-skill spheres with local materials and resources while Stevenson and Onge (2005) said that an empowered financial resource woman manager would increase level of viability of the woman as an entrepreneur

Challenges encountered in financial resource acquisition and management were found to be Lack of collateral which would act as security for a loan and too high interest rates. Among intervention measures suggested to ease challenges of financial resources is for the government of Kenya and other stake holders to provide youth led MSEs with accessible, cheap and adequate loans.

5.1.6 Ability to Secure Good Business Site

The effect of ability to secure good business site in enhancing MSE performance was found to be very low which concurs fairly well with Stevenson and Onge (2005) who observed that one of the major constraints faced in the MSE sector is deteriorating infrastructure which impacts negatively on MSE's competitiveness and Gichira et al (2002) who states that one of the major mistakes made by MSEs is to design a site that makes it difficult for customers to identify the advantages of their products.

Challenges encountered in securing good business site were found to be too high rent charged by land lords and that to get a business premise in a good site was very hard

Among intervention measures suggested to ease challenges of ability to secure good business site was for the government to construct adequate industrial parks in rural areas of the country

5.2 Conclusions and Recommendations

5.2.1 Conclusions

The following conclusions were derived from the research findings.

5.2.1.1 Use of appropriate technology is not doing much to enhance youth led MSE performance due to insufficient finances and irrelevant skills

5.2.1.2 Quality improvement techniques are not being made use of due to lack of relevant skills and inefficient machines.

5.2.1.3 Conformance to legal requirements is a major handicap to youth led MSEs due to too high license fee.

5.2.1.4 Financial resource management has weak effect on MSEs due to insufficient funds.

5.2.1.5 Ability to secure appropriate business location is hindered by too high rents charged.

From the chapter, it is clear that those enterprises able to use most of the four forms of technology adoption experienced improved product and service quality; increased productivity and improved marketability of their products and thus firm growth. However, most MSEs had only invested in training and purchase of equipment which resulted to inadequate technology adoption.

5.2.2 Recommendations

5.2.2.1 To make youth led MSEs be able to effectively make use of appropriate technology, it is recommended that they are provided with adequate finances and relevant tools and equipment by the government

5.2.2.2 To be able to effectively benefit from use of quality improvement techniques, it is recommended that youth entrepreneurs be upgraded in their entrepreneurship and management skills through refresher courses. Financing the training need be done by the government but provision of the training programe should be left to consultants and monitored by government agents.

5.2.2.3 To enhance young entrepreneurs' conformance to legal requirements, it is highly recommended that ministry of trade and industry should reduce license fee.

5.2.2.4 To enable MSEs cope with challenges of financial resources management, it is recommended that the government of Kenya provide them with accessible, cheap and adequate loans. The current youth fund was started for this purpose but unfortunately the group component is not enough and neither does it assist individual entrepreneurs. Individual component of the youth fund through micro financing institutions is feared due to the bad effects associated with failure to pay bank loans.

5.2.2.5 To cope up with challenges associated with too high rents and unavailability of business premises, it is recommended that the government need to construct adequate industrial parks in rural areas of the country

Research Gaps

To improve technology adoption processes amongst youth led MSEs, the following topics are suggested for further researches.

1. Effect of technology on human resource management amongst youth led MSEs.
2. Relationship between technology and firm productivity amongst youth led MSEs.

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APPENDIX I

Table 4.15: Pearson's Correlations matrix- technology adoption forms

DEPENDENT VARIABLE	INDEPENDENT VARIABLES	Use of appropriate technology	use of quality improvement techniques	conformance to legal requirements	financial resource management	ability to secure good business site
Solution for customer complaints		-.072	.278(**)	.272(**)	.121	.244(*)
Customer retention		-.248(*)	.014	.241(*)	.216(*)	.285(**)
Reclaim lost customers		-.226(*)	.256(**)	.506(**)	.172	.298(**)
Culculate profits and losses		.112	.002	.148	.300(**)	.027
Business record Keeping		.283(**)	.301(**)	.177	.384(**)	.008
Solution to lack of market coping with competition		-.095	.287(**)	.174	.213(*)	.203(*)
Product innovation and difference		.111	.297(**)	.151	.262(**)	.032
Sourcing for Qualified Employees		-.166	.215(*)	.283(**)	.296(**)	.304(**)
Keeping Employees Motivated		.340(**)	.083	.208(*)	-.010	-.242(*)
Retaining Qualified Employees		.212(*)	-.094	.103	-.040	-.268(**)
Identifying Refinancing Needs		.304(**)	-.068	.212(*)	-.212(*)	-.288(**)
Securing Sources of B. Finance		-.091	.193	.181	.331(**)	.169
Business Risk Minimisation		.107	.297(**)	.362(**)	.380(**)	.056
Uncertainty Avoidance		-.174	.254(*)	.458(**)	.243(*)	.327(**)
Faster Production		-.055	.223(*)	.485(**)	.209(*)	.277(**)
Saving on Labour Cost		.065	.217(*)	-.058	.152	.279(**)
Saving on Time		.015	.093	.056	.315(**)	.123
Substitute for Cheaper Material		-.013	.193	.230(*)	.293(**)	.194
Increase Production Efficiency		-.215(*)	.043	.416(**)	.135	.144
Reduced Operation Costs		-.209(*)	.209(*)	.158	.155	.254(**)
Redused working Capital Required		-.251(*)	.231(*)	.380(**)	.426(**)	.177
Improving Product Reliability		-.133	.073	.234(*)	.213(*)	.061
Better Packaging		-.055	.253(*)	.373(**)	.246(*)	.309(**)
Greater Self Sufficiency in supplies		.221(*)	.084	.243(*)	-.133	.001
Increased Market Independency		-.004	.144	.391(**)	.187	.109
Development of Skills		.002	.131	.543(**)	.175	.285(**)
Increased Output		.197(*)	.158	.289(**)	.319(**)	.031
use of appropriate technology		-.070	.114	.156	.480(**)	.152
use of quality improvement techniques		1	.258(**)	.097	.072	-.089
conformance to legal requirements		.258(**)	1	.337(**)	.339(**)	.450(**)
financial resource management		.097	.337(**)	1	.189	.309(**)
ability to secure good business site		.072	.339(**)	.189	1	.240(*)
		-.089	.450(**)	.309(**)	.240(*)	1
Mean absolute correlation coeff.		0.169	0.219	0.285	0.256	.219

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

List wise N=103

APPENDIX II

Questionnaire for entrepreneurs “Confidential”

Date filled..... Serial no.....

Part one: Personal data.

Section A

This section contains questions about yourself and family background. Please indicate by ticking the option applicable

- (1) Name of respondent.....
- (2) Age 1-15 () 16-20 () 21-25 () 25-30 () over 30 ()
- (3) Marital status single () married () widow () divorced () Others ()
- (4) No. of children 0-1 () 2-3 () 4-5 () 5-6 () Over 6 ()
- (5) Education Informal () primary () o ’level () a’ level () Others ()
- (6) Training none () Trade test () Diploma () degree () Others ()
- (7) Work exp (yrs) none () 1-2 () 3-4 () 5- 6 () Above 6 ()

Section B: Business information

This section contains questions pertaining to your business profile. Please indicate by ticking the option applicable.

- (1} Name of Business.....
- (2) Legal form: Sole prop.() partnership() Co-op () ltd co () others ()
- (3) Yrs of operation 1-2 () 3-4 () 5-6 () 7-8 () above 8 ()
- (4) bus. activity. Prod/man () Service. () Agency () trade () others ()
- (5) Invest. In tech Training. () equipment () franchise() Sub-cont () others ()

11, please comment on any other business information not captured in the table above

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Part 2:

Section A. Information on technology

This section contains questions pertaining to technology.

Please indicate by ticking the extent to which technology addresses the following issues in your business

	<i>Very</i>	<i>Fairly</i>	<i>Not</i>	<i>Not</i>	<i>I don't</i>
	<i>much</i>	<i>well</i>	<i>much</i>	<i>at all</i>	<i>know</i>
<hr/>					
A. CUSTOMER CARE					
1. Solve your customer complaints	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. Retaining your customers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. Reclaiming your lost customers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B. RECORD KEEPING.					
4. Calculation of profits and losses	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. Business record keeping	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
C. MARKETING					
6. Solve problem of lack of market	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. Cope with competition in bus.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. Product innovat and differentiat	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
D. PERSONNEL MANAGEM					
9. Source for qualified employees	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10 keep employees motivated	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11. Retain qualified employees	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
E. FINANCIAL MANAGEMENT.					
12. Identify refinancing needs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
13. Securing source of bus finance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
14. Business risk minimization	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15. Uncertainty avoidance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Very much	fairly well	not much	not at all	<i>I don't know</i>
F. OTHERS					
16. Faster production	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
17. Save on labour cost.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
18. Saving on time.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
19. Substitute of cheap materials.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
20. Increase production efficiec.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
21. Reduced operation costs.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
22. Reduce work capital required.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
23. Improve product reliability.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
24. Better packaging.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
25. Great self sufficient in supplies.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
26. Increased market independent	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
27. Development of skills.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
28. Increased output.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

G. OVERALL RELEVANCE OF TECHNOLOGY

29. How relevant was technology to actual business operations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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G. OVERALL TECHNOLOGY CAPABILITY

This section will help us determine whether each technology adoption form is transforming business operations into desirable business results. Please indicate by ticking the extent your business is performing as a result of the following technology adoption forms

30. Use of appropriate technology	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
31. Use of quality improvement. technic	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
32. Conform to legal requirement	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
33. Finance resource management	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
34. Secure good business site.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Part 3.

Section (1)

Briefly explain how you apply technology in your business

What components of technology do you use?

What challenges do you encounter in using the above components?

What do you think need to be done to improve your use of the above components?

Please comment on any other technology issue of importance to your business

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Section (2)

I would like you to explain briefly how you apply quality improvement techniques in your business

How does it affect performance of the key areas of your business?

What challenges do you encounter in applying the technique?

What do you think need to be done to improve the technique's impact in your business?

Please comment on any other issue of importance to your business relating to quality improvement techniques.

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Section (3)

Explain briefly how you are able to conform to your business legal requirements

What areas of your business does it affect and how?

What challenges do you encounter in dealing with legal requirements?

What do you think need to be done to improve your business' fulfillment of the legal requirements?

Please comment on any other issue of importance to your business performance relating to legal requirements

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Section (4)

Explain how financial availability affects performance of various areas of your business.

How does your business manage its financial resources?

What challenges do you encounter while managing your resources?

What do you think need be done to improve your business resource management?

Please comment on any other issue relating to resource availability of importance to your business.

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Section (5)

Describe briefly how you are able to secure appropriate business site.

What challenges do you face as a result of your current location?

How do you deal with these challenges?

What do you think need to be done to help you cope with these challenges?

Please comment further on any other issues relating to your business location

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