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**ASSESSMENT OF ICT APPLICATION BY SMALL AND MEDIUM  
SIZED ENTERPRISES IN THE KENYAN PROFESSIONAL SERVICE  
INDUSTRY: A CASE OF SMES LOCATED ALONG MPAKA ROAD  
(WESTLANDS)**

**Kennedy Chege and Mr. J. Ntare**



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# ASSESSMENT OF ICT APPLICATION BY SMALL AND MEDIUM SIZED ENTERPRISES IN THE KENYAN PROFESSIONAL SERVICE INDUSTRY: A CASE OF SMES LOCATED ALONG MPAKA ROAD (WESTLANDS)

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## Abstract

**Purpose:** The study was an assessment of ICT application by small and medium sized enterprises in the Kenyan professional service industry, a case of SMEs located along Mpaka road (Westlands).

**Methodology:** A descriptive survey design was used as it was appropriate for reporting the way things are. A population of 124 SMEs gave rise to a sample of 25 SMES (20% of population) which were selected on a stratified non random sampling technique. The data collection instrument was a self-report questionnaire and the data was analyzed using descriptive and inferential statistics. It was then presented using graphs and charts

**Results:** Findings in this study indicated that though majority of SMES used various forms of ICT, they did not have faxes and internet connection. In addition, the SMEs did not use a website as an advertising tool since they did not have one and also didn't use faxes for transmitting documents such as quotations and invoices. The challenges facing ICT use by SMEs were financial in nature, infrastructural in nature and capacity (training in nature). Benefits accruing to SMEs were as delineated in literature review though regional expansion was not applicable to SMEs in the study.

**Unique contribution to theory, practice and policy:** The study recommended that there should be facilitation of training through workshops and courses on ICT, bridging the financial gap for SMEs, improvement in infrastructure and the internet backbone and a policy frame work on SMEs. Areas of further studies included a relationship analysis between the use of ICT and the financial performance, customer satisfaction, and staff morale in the context of SMEs.

**Keywords:** *ICT application, small and medium sized enterprises, challenges*

## 1.0 INTRODUCTION

Small and medium enterprises (SMEs) are an important factor in the East African economies in general and the Kenyan economy in particular especially with respect to employment. Nonetheless, SMEs are facing increasing competition through globalization as most multinationals are exploiting those markets which were before designated for SMEs. Globalization which is evidenced by the rapid spread of information and communication

technologies (ICT) and ever decreasing prices for communication, makes markets in different parts of the world become more integrated. Consequently, SMEs need to board the globalization bus which is being steered by ICT. Therefore, one basic question is whether the use of ICT (as production technology, as information processing technology or as information communication technology) can help SMEs to cope with these new challenges. Information asymmetries are one of the major causes for high transaction costs, uncertainty and therefore market failure (Wolf, 2006). A reduction of the information gap also reduces the ability of the better informed to extract rents from the less informed, be it buyers or sellers of goods or factors. A reduction of information asymmetry will also create new opportunities and therefore enhance the efficiency of resource allocation. On a macro level this will then lead to faster growth and diversification of the economy (Matambalya, 2006).

Several benefits have accrued to those firms applying ICT in their day to day activities. Some these benefits include increased management efficiency as well as increased competitiveness. Nonetheless, it is the researcher's casual observation that ICT is not being given the attention it deserves by the owners of SMEs. By way of an example, it is commonplace to find that most lawyers' offices operating as SMEs are not backed by computer databases as they still rely on costly and inefficient manual filling systems. Clinics operating as SMEs are also affected by the same quagmire. In addition majority of professional SMEs don't spot a website or efficient accounting systems. This observation led the researcher to carry out an assessment of ICT application by professional firms in Kenya.

### **1.1 Problem Statement**

The development of SMEs sector in developing countries is a topic that has attracted a lot of academic and research attention. This is evidenced by the many dissertations and papers on SMEs. Examples of such studies include "Growth patterns of SMEs" by Kariuki (2004), "challenges facing SMEs" by Sethna (2002) and "policy frame work for the SME sector" by McCormick and Pederson (1995). The government of Kenya has been at the forefront in spearheading policy formulation in an effort to popularize the establishment of SMEs after coming to realization that this sector presents a strong weapon for alleviating poverty as well as the achievement of the Millennium Development Goals (MDGs). Examples of such policies are contained in the sessional paper Sessional paper NO.2 of 1992 of small enterprise and Jua Kali development. Nonetheless, it has been noted by ICT experts as well as business experts such as Kashorda (2007) and Wagacha (2007) that there exists scanty information or literature concerning ICT dissemination and uptake by small firms. According to an article written by Munene (2007) on the Business Daily newspaper on the Tuesday 27<sup>th</sup> November 2007, professionals in the service sector such as law firms, accounting firms, clinics, architects, stock brokerage firms and property management firms seem not to use ICT as much as they should. The benefits of ICT use have been identified as management efficiency, increased competitiveness, local and regional expansion. Studies by McComick and Penderson (1995) analyzed the policy framework in the SMEs sector and concluded that more needed to be done to revamp and support the SME sector. Kimuyu (2003) carried out a study on the access of funds by SMEs and concluded that SMEs had poor access to funds as a result of institutional and characteristic impediments. A study by Dondo (2002) analyzed the challenges of SMEs and concluded that one of the constraints of SMEs was poor technology and inadequate use of ICT.

However, none of the studies identified focused on the challenges facing SMEs in ICT application. The researcher noted this as an evident research gap. Hence, the study aimed at establishing the extent of ICT and challenges of ICT use by SMEs.

## **1.2 Research Objectives**

- i. To investigate the level of ICT use of by SMEs in the Professional Service Industry
- ii. To determine whether SMEs face any problems in their efforts to use ICT
- iii. To underscore the perceived benefits attributed to the use of ICT by SMEs on a SME and Macro-economic level
- iv. To come up with viable recommendation to make SMEs more efficient and effective

## **2.0 LITERATURE REVIEW**

### **2.1 SMEs in Kenya**

Kenya is noted as the first African country where the study of Small enterprise sector was first carried out by International Labor Organization (ILO) in 1 972. The sector was given prominence in a policy document entitled “Employment, incomes and equity in Kenya” which formally recognized the sector. Since then, the government and development aid agencies and researchers have increasingly been focusing on the sector.

In GOK paper No.2 of 1986 and 1997, the government recognizes the importance of small enterprise sector as a primary means of strengthening Kenyan’s economy through industrialization and enhancing private sector contribution to national economic growth. Small enterprise sector includes a variety of economic activities that responds to a wide range of market demand and opportunities. Economic activities are either in service and trade industry. The size of the sector has commonly been determined by the number of employees. In the Kenyan context the sector employs between 0-50 people per enterprise (GOK, 1992). The sector has two clusters as follows: (McCormick, 1992)

- micro enterprises - these are the smallest and employ between 0-10 people ,
- Small enterprises employs between 11 to 50 workers

It cannot be disputed that, Kenya is experiencing a deteriorating unemployment and under-employment problem since the labor force is growing at an estimated rate of 4.3% annually although the economy has recorded some positive signs of growth this is not yet enough to contain the employment problems in the country. The major causes of unemployment have been the shrinking public sector, low productivity in agricultural sector and contracting private formal sector (World report, 2004). Implementation of structural adjustment programs imposed by Bretton wood institutions has led to mass retrenchment of the civil servants. The Private formal sector is experiencing a negative growth due to poor economy and competition arising from trade liberalization. As a result, the sector continues to retrench workers and offer limited employment opportunities. The agricultural sector has recorded low productivity due to population pressure on land and poor climate. Therefore these sectors are unable to provide: employment to school leavers, graduates and retrenchees. Consequently, it is estimated that 56% of Kenyans live below the poverty line.

In GOK (1997) and National Poverty Eradication Plan of 1999-2015, the government is focusing on the small enterprise sector as a panacea to the problem of unemployment and industrial



transformation. There are 1.3 million small enterprises offering employment to over 2.3 million Kenyans, which is 16% of the total working population (CBS/ICEG/KREP, 1999). There are several arguments that have been advanced on the potential of small enterprise sector in employment creation and industrial transformation.

Small enterprises are labor intensive and use unskilled labor therefore they can create more jobs than the formal sector. The cost of creating a job in small enterprise sector is on average Kshs 30,000 compared to Kshs 320,000 in big enterprises (Dondo, 1990). It has been observed that, during periods of economic recession, there is a pattern of shifting employment from the larger enterprises to small firms. A study done in Tanzania by World bank in 1985 when economy was at its lowest revealed that larger firms contracted while smaller and medium firms expanded (Liedholm 1990). If the observation is true, then small enterprise sector is currently capable of creating more jobs than bigger firms since the country is still not yet economically stable.

Small enterprises often use local materials some of which may not have been drawn into development process. Therefore the enterprises save scarce foreign exchange since most of the technology and materials used are local and provides a base for industrial growth (Haper 1976). The sector indirectly stimulates job creation in other sectors because of forward and backward linkages in sourcing for inputs and marketing of goods and services and produces consumer goods that are appropriate to the local market (McCormick, 1992).

Small enterprises employ workers with little formal education and training. They learn on the trade on the job where they gain experience to become an important source for knowledge and new entrepreneurial talents. Therefore the sector acts as a training ground for many Kenyans who would otherwise never have gotten an opportunity for training and provides a base for entrepreneurial growth. Although the small enterprise sector is crucial for employment creation, income generation and industrial transformation, it has not been dynamic enough to function as an 'engine' for economic growth (GOK, 1997).

According to (GOK, 1997) the growth of the sector has been inadequate in terms of absorbing the growing labor force, which is estimated to be 4.3% per annum. The sector has recorded very little in terms of vertical growth since 97% of enterprises still employ below 11 people, 2% below 19 people and only 1% that employ above 20 people (CBS/KREP/ICEG1999). This indicates that most of the Kenyan enterprises are at the micro level and those at the middle level constitute only 1% and are incapable of providing employment at the required rate.

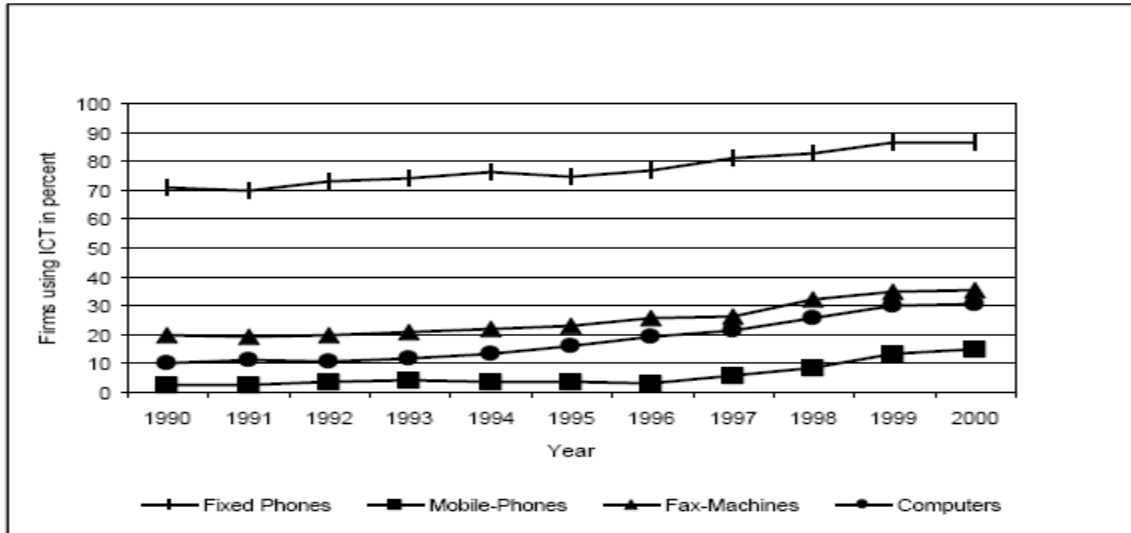
## **2.2 SMEs Utilization of ICT (Extent, Impact and Competitiveness)**

According to Wikipedia Online dictionary, ICTs stand for information and communication technologies and are defined, for the purposes of this primer, as a "diverse set of technological tools and resources used to communicate, and to create, disseminate, store, and manage information." These technologies include computers, the Internet, broadcasting technologies (radio and television), and telephony ([www.wikipedia.org](http://www.wikipedia.org)).

In a survey of the African internet status Jensen (2000) reports that the average usage of Internet amounts one incoming and one outgoing e-mail per day. Communications are mostly done with people outside the continent. Most users are NGOs, universities or private companies. In addition, users are mainly male and well educated though this situation has changed and an increasing number of females have been spotted using the internet. E-mail is used for

correspondence, document exchange, technical advice, managing projects, arranging meetings, and exchanging research ideas, but it is still limited for accessing formal information resources. 25 % of e-mail is replacing faxes, 10 % e-mails replacing phone calls and 65 % of the e-mails standing for communication that would not have been made without an e-mail-system. Users report that internet has increased efficiency and reduced information costs, although it is a still underutilized resource.

**Figure 1: Extent of ICT use in Kenyan SMEs, % of firms using different ICTs**



**Source: Matambalya on ICT in East Africa, 2000**

The sample of a study carried out by Matambalya (2000) shows that the use of ICT by SMEs in Kenya as well as in Tanzania is increasing over time. The usage of fixed phone lines nearly reaches the saturation point but is still lower in Tanzania than in Kenya which is in line with overall Teledensity. The percentage of firms that uses mobile phones is increasing much faster in both countries. Especially in Tanzania, despite its late start only in 1994 it has already outgrown the usage of fax machines.

The study by Matambalya (2006) indicated that this picture is in line with the expectations that within the next three to five years the number of mobile phones will be higher than the number of fixed lines in many African countries. The higher percentage of mobile phone use in Tanzania and Kenya, which is observed in overall country figures, could be due to the very low quality and still long waiting lists of fixed line services. This is an example how the use of advanced ICT can help to leapfrog some stages of technology adoption. As computers are still a relatively expensive investment for most SMEs their use, which is slightly higher in Kenya than in Tanzania, increases only slowly but steadily (Matamabalya, 2000)

### 2.3 The Impact of ICT on Economic Performance

The question remains now through what channels this improved access to ICT in Kenya and Tanzania will impact on enterprise performance for users and hence economy wide growth. Since the 1960s and 1970s, standard neo-classical theory based on the traditional assumptions of costless exchange at market clearing prices has given way to more refined analytical work that

investigates, among other phenomena, the causes and consequences of transaction costs, uncertainty, incomplete markets and incomplete information. These developments have provided another perspective, i.e., the information-theoretic approach to understanding development. Information asymmetries are one of the major causes for high transaction costs, uncertainty and therefore market failure. A reduction of the information gap also reduces the ability of the better informed to extract rents from the less informed be it buyers or sellers of goods or factors. As the poor population and small firms usually have less access to information this effect might help to reduce disadvantages and inequality. A reduction of information asymmetry will also create new opportunities and therefore enhance the efficiency of resource allocation (Akerlof, 1970). On a macro level this will then lead to faster growth and diversification of the economy.

One of the central tenets of the information-theoretic approach and a feature noted by early observers is that acquiring information is costly, especially within the context of developing countries. These difficulties associated with information acquisition have numerous implications: The high costs of acquiring information may lead to behavior that differs markedly from what it would have been if more information had been available. The lack of information may reduce the extent of mutually beneficial exchanges and lead to economy-wide Pareto inefficiencies. Furthermore, due to information constraints, there will be considerable uncertainty surrounding economic and administrative decisions in developing countries. This will have implications for the efficiency, productivity, and welfare of the various agents in the economy and the appropriate antidote in many cases is to engage in informational activities. In this context, the key role of ICT is that they may be used to acquire and process information and reduce uncertainty. A question in this respect is what kind of information is provided or distributed. Additional costs emerge when search costs increase because of information overflow and the reliability of information has to be checked. There is also the fear that dependence on the suppliers of information and equipment will increase.

ICTs can serve as information channels because they are able to support the decoupling of information from its physical repository, which can be argued to be the truly revolutionary aspect of these technologies (Evans & Wurster 1997; Pohjola, 1998). This property allows the immediate transmission of large volumes of information and permits communication independent of the physical movement of individuals. The decoupling effect allows users access to a body of information and ideas which are non-rival in use and potentially generate large content-related externalities that will improve the innovation capacity and diffusion. The use of ICT networks is also non-rival in nature, and an increase in network size generates network externalities. Therefore the analysis at the enterprise level will underestimate the effects of ICTs (Matambalya 2000).

#### **2.4 ICT and SME Competitiveness**

Flexibility is considered to be a major source of competitiveness for SMEs compared to larger enterprises. The use of ICT could now on the one hand increase the competitiveness of SMEs as they enable the creation of more flexible links with trading partners because of faster and more reliable communication channels. On the other hand ICTs could help bigger enterprises to increase their flexibility through a restructuring of the organization which will enable them to adapt quicker to changing conditions. Therefore the competitive advantage of SMEs could also decline. In general SMEs rely much more on informal information systems than larger

enterprises. To get the relevant information that is needed for a rational decision is not costless especially as in SMEs usually there is only one decision maker – the owner/manager – whose personal resources (time, knowledge, and capabilities) are restricted. However SMEs have the advantage of smaller internal coordination costs, as all decisions are made by one or few people (Blili & Raymond, 1993).

External transaction costs are associated with the initiation, negotiation and enforcement of contracts. Especially the internet helps to screen the enterprises' environment for relevant information and thereby get information about sellers and customers that were previously out of reach (Müller-Falcke, 2001). However for the actual delivery of goods and the transmission of payments also other infrastructure like transport and a reliable banking system has to be in place. See Brynjolfsson and Hitt (2000a) for a discussion of the interrelationship between information technology and organization. With the use of ICTs transaction costs could be lowered and therefore the economies of scale in exporting can be reduced. This will enable SMEs not only to stick to local markets but to expand regionally and internationally. On the other hand, many SMEs that are located in rural areas serve the local niche market and are protected against competition from bigger enterprises because of high transport and communication costs. Therefore ICTs might also increase competition for these enterprises, so they either have to become more productive or to close down.

There are hardly any studies that analyse the effect of ICTs on small enterprises in developing countries, partly due to data problems. Müller-Falcke (2001) finds for Indian manufacturing SMEs that enterprises that use more advanced forms of ICTs have on average a higher labour productivity and a higher growth rate. In a survey of 59 electric and electronic manufacturing Indian SMEs mainly employing less than 50 people, Lal (1996) observed higher profit margins, skill intensity and export and import intensities for firms using IT. There is also some evidence that export performance of SMEs is related to ICT adoption (Lal, 1999; Nassimbeni 2001). However it is not the investment in the technology alone but the combination with other technologies and especially relevant skills that make ICT work.

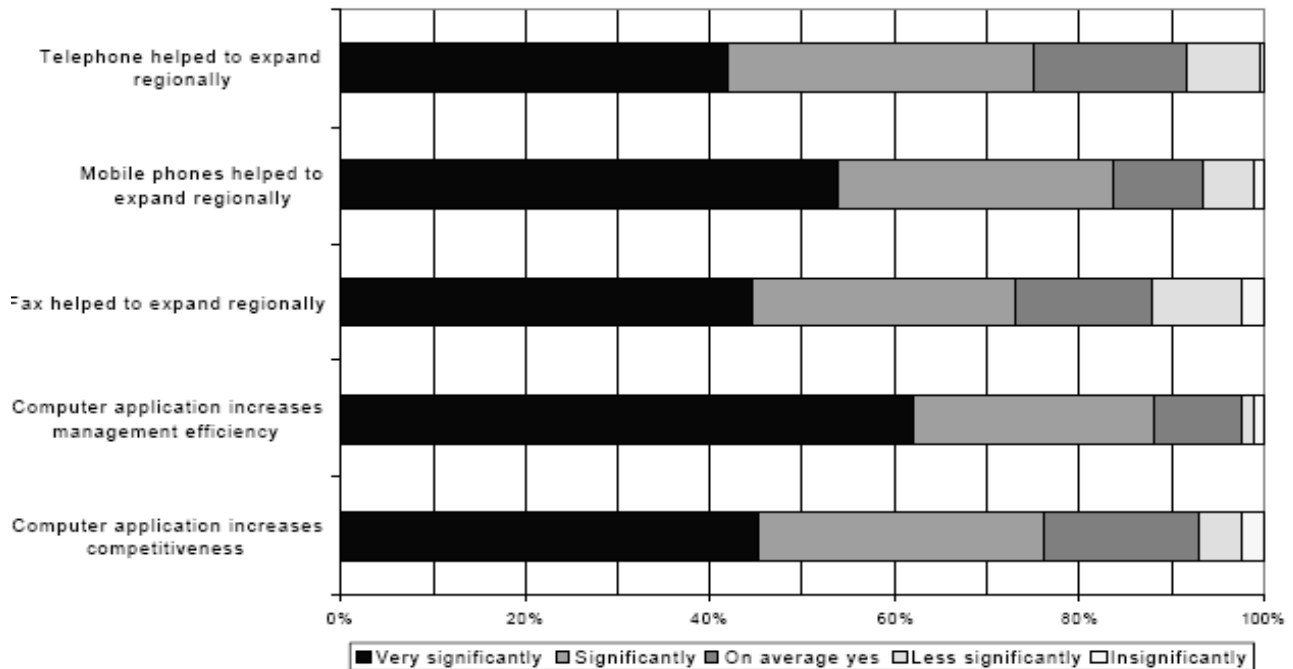
A more qualitative study by Duncombe and Heeks (2001) stresses the different information and ICT needs for different types of SMEs. They conclude that smaller SMEs with little working capital (which they characterize as survivalists and trundlers) rely mainly on informal information from known sources where personal relations and trust plays a major role. For these enterprises ICTs are of minor relevance and only telephone can help to increase access to this kind of information. As phones can help to extend social and business networks and in some cases substitute for journeys and business intermediaries access to telephone services should be given priority.

However, for bigger SMEs that are growth oriented, belong to the formal sector, are export oriented etc. information becomes more important and therefore more advanced ICTs can be helpful for building business linkages. The survey of SMEs in Botswana revealed the biggest information gap in market information pertaining to new customers and the need to expand into export markets. Information is also lacking about external finance and sources of skills and training. This lack of information was found to raise costs and reduce income. "ICTs can reduce time and money costs of business processes and can improve the certainty and quality of those processes." These benefits occur mainly in enterprises with bigger size (with annual turnover of



a few tens of thousands of US\$) and in specific sectors of operation such as manufacturing exporters and the tourist industry, where the Internet can be used as a marketing tool. However for 90 % of the survey enterprises, lack of finance and skills are the main constraints and they cannot afford to buy a computer or make efficient use of it in the short or even medium term (Duncombe & Heeks, 2001).

### 2.5 Perceived Effects of ICT



**Figure 2: Perceived Effects of ICT**

From the survey Matambalya and Wolf (2000) conducted in Tanzania and Kenya it can be seen that those enterprises that use different forms of ICT rate their effects mostly positive. On top are computer applications that are assumed by 88 % and 76 % of users to considerably increase management efficiency and competitiveness respectively. Mobile phones are considered to contribute significantly to regional market expansion by most enterprises, followed by fixed phones and faxes.

### 3.0 RESEARCH METHODOLOGY

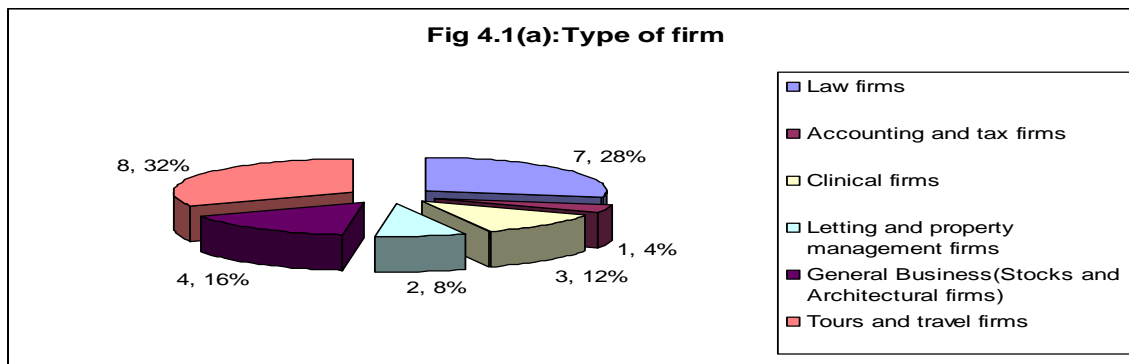
A descriptive survey study was adopted. The population from which the conclusions for the study were made included all the SMEs located along Mpaka Road Westland’s. The number of SMES identified as the populations were 124 SMES and included firms from the law, accounting, clinical profession, tours and travels, letting and property management as well as general business consultancy firms. A sample of 20% of the SMEs from the various professions was selected i.e. 25 SMEs. Judgmental or non-random stratified sampling technique was used to select the individuals firms from each profession to be included in the sample. A self-reporting questionnaire was used for data collection. The data collected was analyzed by use of descriptive

statistics. In particular, frequency tables and proportions or percentages were used. The data analysis therefore involved simple tabulation and presentation of report.

#### 4.0 RESULTS AND DISCUSSIONS

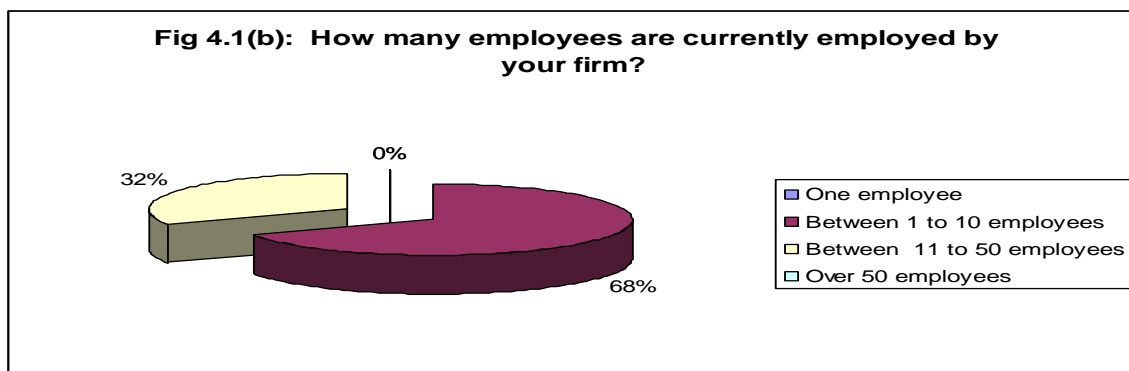
##### 4.1 General Information

According to this study, the biggest concentration of SME respondents was in tours and travels firms which represented 32% of the sample size. This was closely followed by law firms representing 28% of the sample. General business SME represented 16% of the sample while clinical firms constituted 12% of the sample. Finally, letting and property management firms and accountancy firms represented 8% and 4% of the sample respectively.



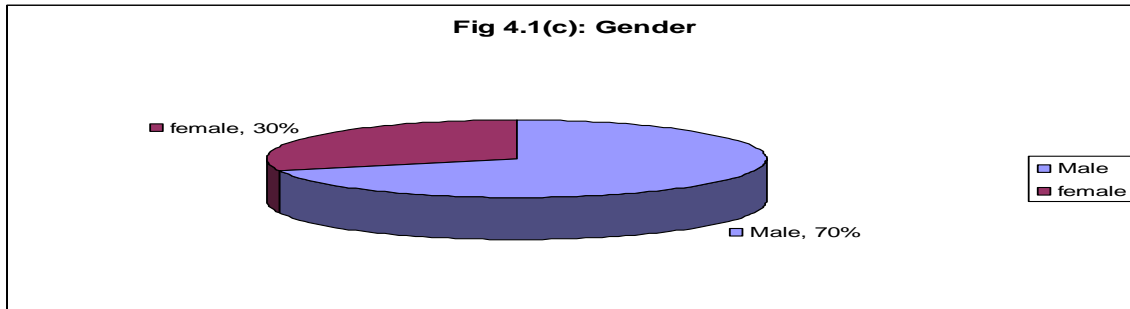
**Figure 3: Type of Firm**

According to our study, the majority of SMEs (68%) had between one to 10 employees while 32% of SMEs had between 11 to 50 employees. Therefore, all the SMEs in our sample met the threshold definition of SMEs as all had less than 50 employees.



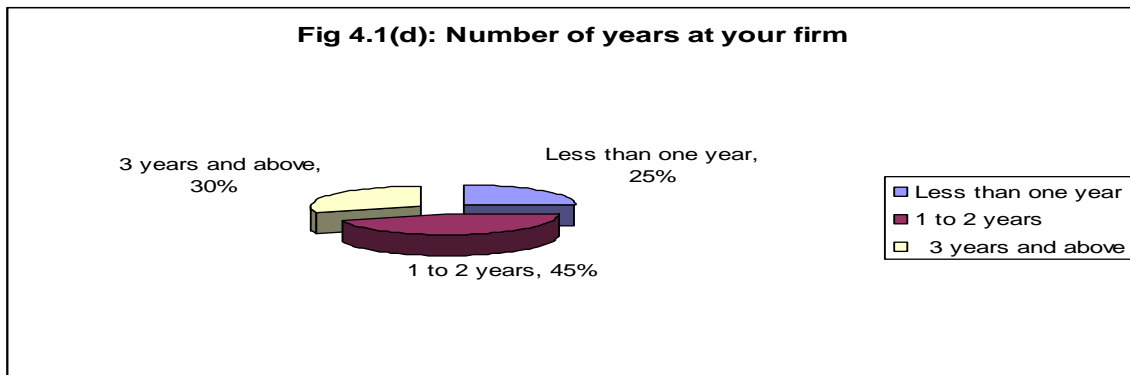
**Figure 4: Number of Employees in the Firm**

Findings in this study indicated that the majority of the respondents were male (70%). Female respondents who took part in filling out the questionnaire constituted of 30% of the respondents.



**Figure 5: Gender of Respondents**

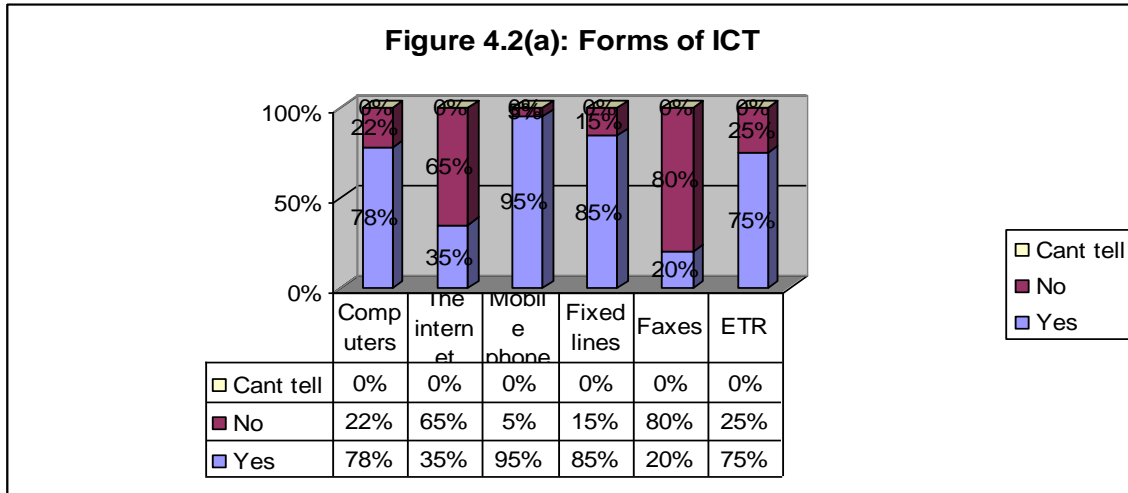
The majority of respondents (45%) had worked for the SMEs for an average of one to two years. While 30% had worked for the SMEs for three years and above, 25% had worked for the SME for less than one year.



**Figure 6: Number of Years at the Firm**

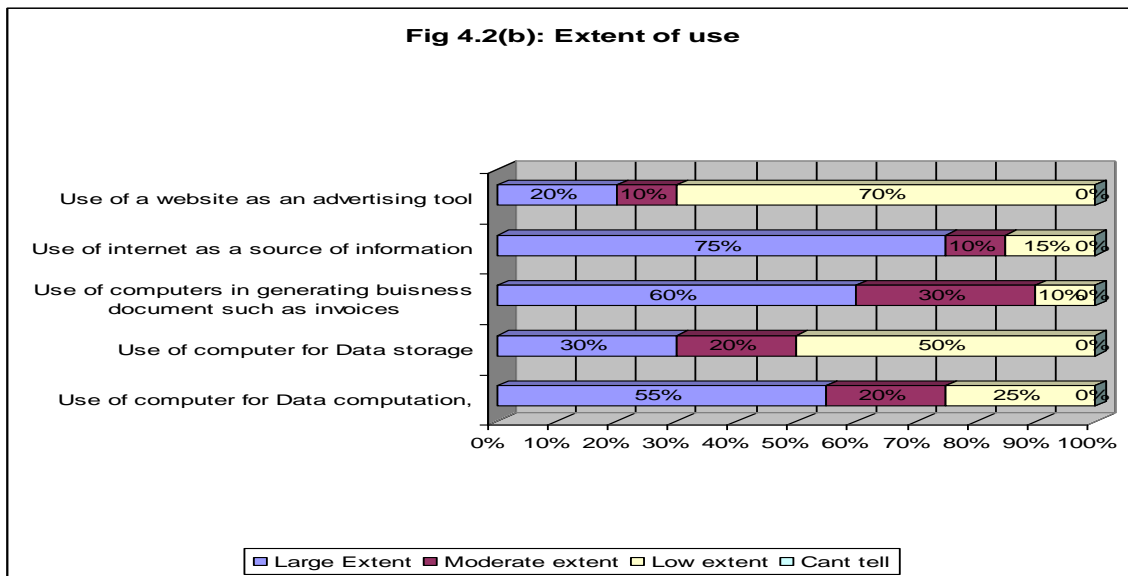
#### 4.2 Extent of Use of ICT

According to our study, several forms of ICT were used by SMEs. The majority of SMEs (78%) had computers while 22% did not have computers. However, the majority of SMEs (65%) were not connected to the internet while the minority 35% was connected to the internet. It was observed that the majority of SMEs (95%) had mobile phones at the work place while 5% of SMEs were not equipped with an official mobile for business use only. However, it was not understood whether the staff used their personal mobile phones for official business in those SMEs where there were no mobile phones for official use. Majority of SMEs (85%) had fixed lines at the work place while 15% of SMEs did not have fixed or land lines. The majority of SMEs (80%) did not have faxes while 20% had faxes. It was observed that the majority of the respondents (75%) had an Electronic Tax Register (ETR) while another 25% did not have ETR machines. No other response was observed for this variable.



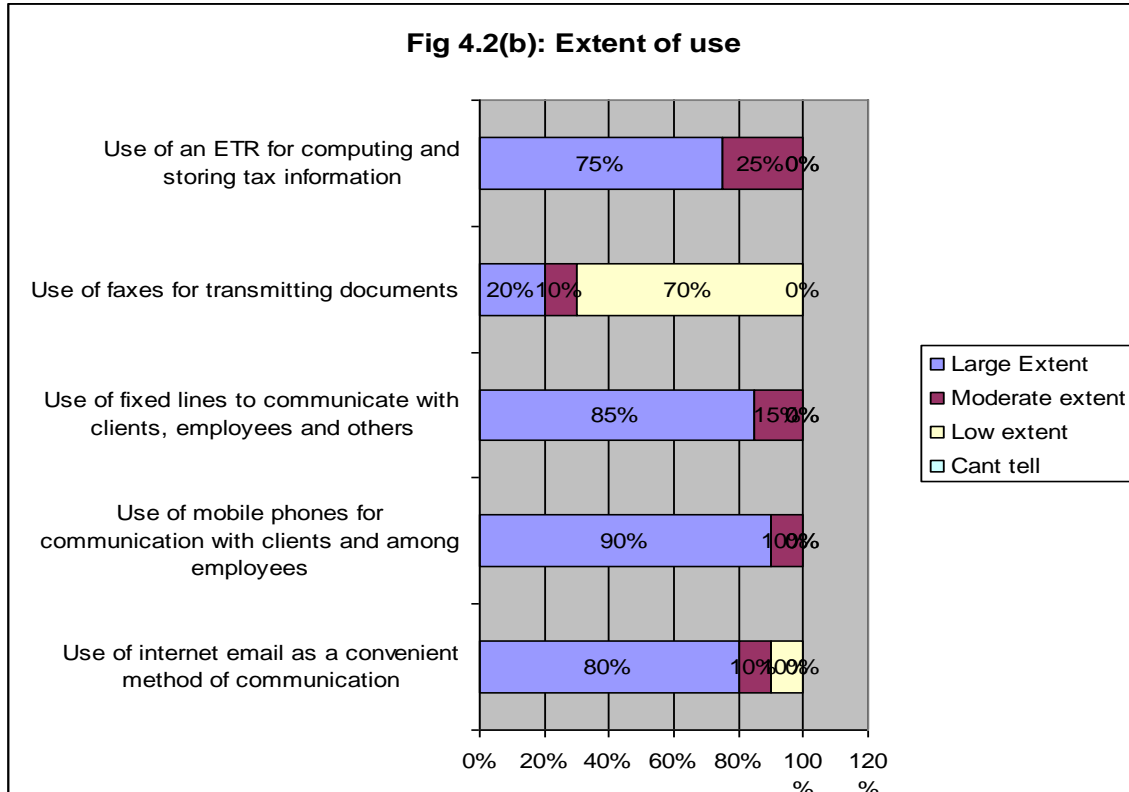
**Figure 7: Forms of ICT used by the SMEs**

One of the objectives of this study was to investigate the extent of use of the various forms of ICT. To a low extent, the majority of SMEs (70%) used websites as an advertising tool. However, to a moderate and large extent respectively, 10% and 20% of SMEs used websites as an advertising tool. To a large extent, the majority of SMEs (75%) used the internet as a source of information. While 10% of SMEs used internet as a source of information to a moderate extent, a further 15% used the internet as a source of information to a low extent. The majority of SMEs (60%) to a large extent used computers in generating business documents such as invoices while a further 30% and 10% used computers for this purpose to a moderate and low extent respectively. To a low extent, the majority of SMEs (50%) used computers for data storage. To a large extent, the majority of SMEs used computers for data computation.



**Figure 8: Extent of Use**

Findings in this study indicate that the majority of SMEs (75%) to a large extent used ETRs for computing and storing tax information. The majority of SMEs (70%) used faxes for transmitting documentary information such as invoices and quotations to a low extent. The majority of SMEs (85%) used fixed lines to communicate with clients, employees and others to large extent. The majority of SMEs (90%) used mobile phones for communicating with employees and clients to large extent. The majority of SMEs (80%) used internet as a convenient method of communication to large extent.

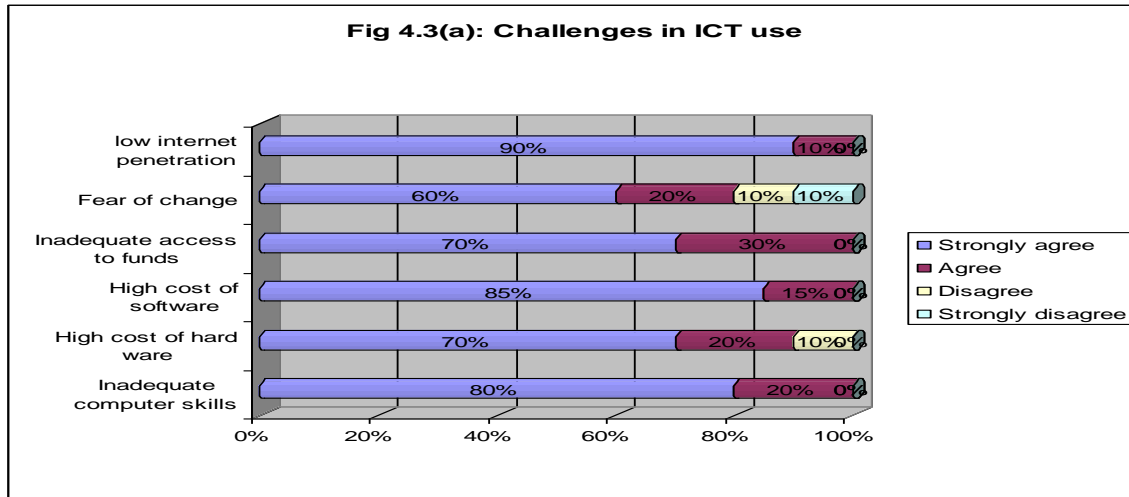


**Figure 9: Extent of Use**

### 4.3 Challenges in ICT Use

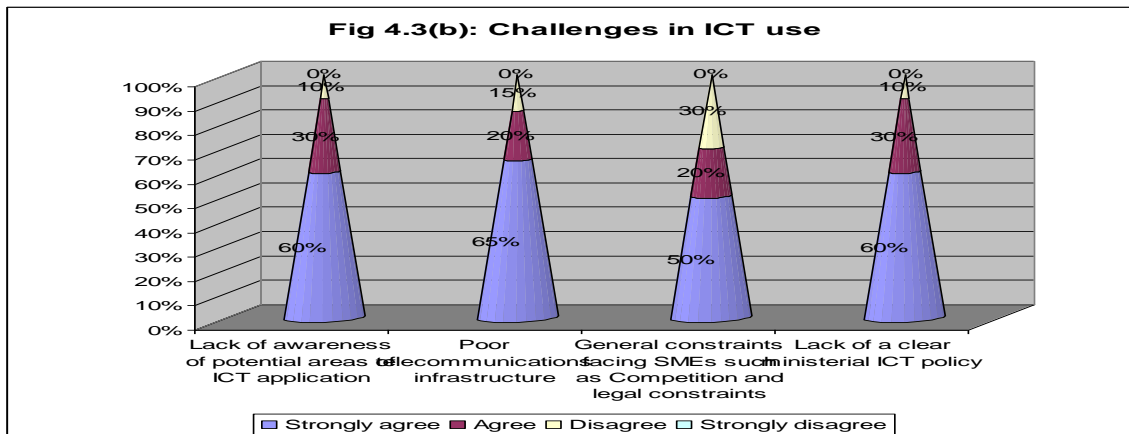
The majority of respondents (90%, 60%, 70%, 85%, 70% and 80%) strongly agreed that low internet penetration, fear of change, inadequate access to funds, high cost of software, high cost of hard ware and inadequate computer skills were significant challenges facing SMEs in using ICT. In addition, 10%, 20%, 30%, 15%, 20% and 20% of respondents agreed that the above were significant challenges to use of ICT by SMEs. However, while 10% of respondents strongly disagreed that fear of change was a significant challenge to ICT use by SMEs, a further 10% disagreed with the statement that high cost off hard ware was a significant challenges to ICT use by SMEs. This latest response may have been triggered by the observation that the cost of acquiring computers had come down after the government zero rated them from paying import duty in a bid to facilitate digitization off the Kenyan economy.





**Figure 10: Challenges in ICT Use**

The majority of respondents (60%) strongly agreed that lack of awareness of potential areas of ICT application was a significant challenge facing SMEs in ICT use. While 30% agreed, 10% disagreed with this statement. The majority of respondents (65%) strongly agreed that poor information and telecommunication infrastructure was a significant challenge in ICT use by SMEs. The majority of respondents (50%) strongly agreed that general constraints facing SMEs such as competition and legal constraints were significant challenges to ICT use by SMEs. The majority of respondents strongly agreed that lack of a clear ministerial policy on ICT was a significant challenge to ICT use by SMEs.

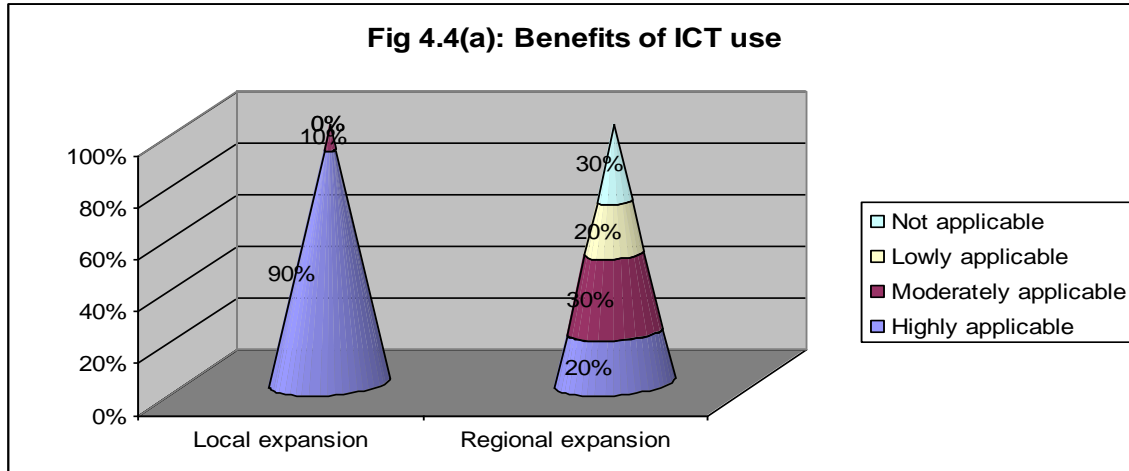


**Figure 11: Challenges of ICT Use**

#### 4.4 Benefits of ICT use

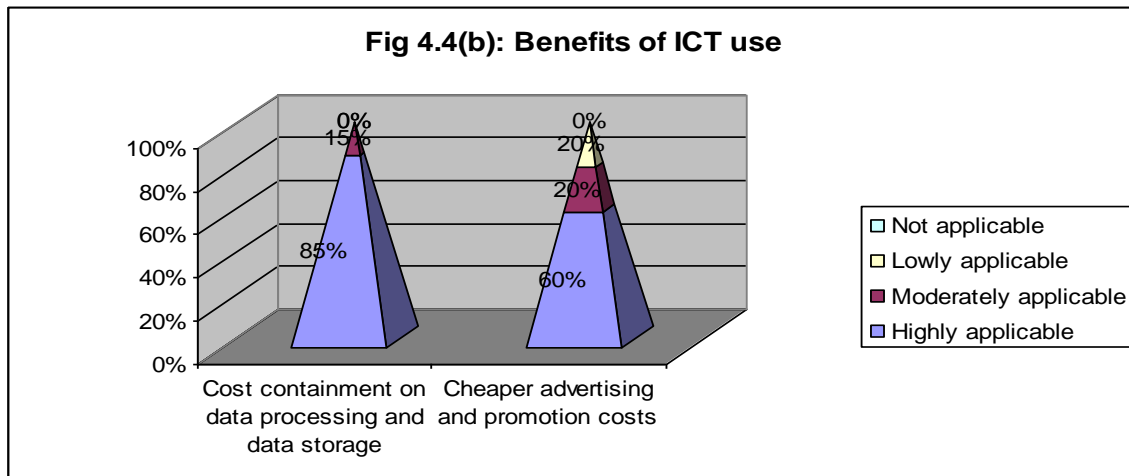
The majority of respondents (90%) indicated that the benefit of local expansion was highly applicable to their firm. Another 10% indicated that the benefit was moderately applicable. It was observed that while the majority (30%) of respondents indicated that the benefit of regional expansion was moderately applicable, a similar majority indicated that this benefit was not

applicable. However, though 20% of respondents indicated that this benefit was highly applicable to them, a further 20% indicated that it was lowly applicable.



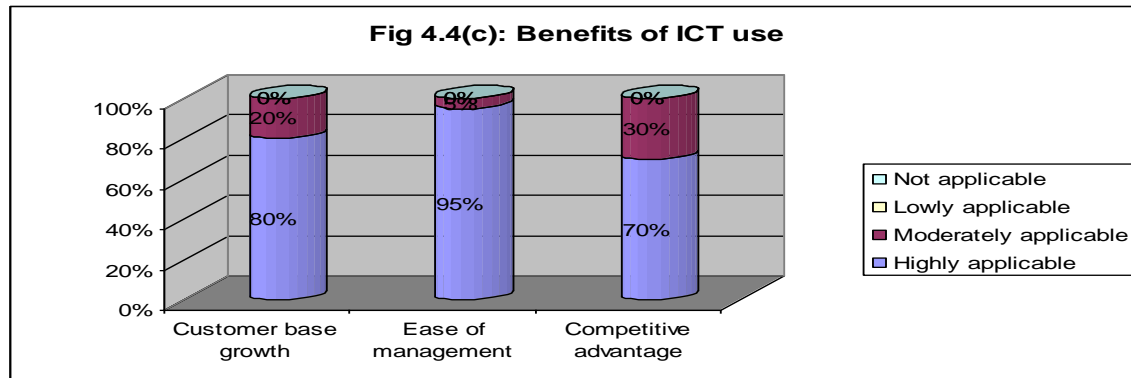
**Figure 12: Benefits of ICT Use**

The majority of respondents indicated that cost containment on data storage and processing was a benefit that was highly applicable to their firm.



**Figure 13: Benefits of ICT Use**

A further 15% indicated that this benefit of ICT use was moderately applicable. The majority of the respondents (60%) indicated that cheaper advertising and promotion costs were a benefit highly applicable to their firm. A further 20% indicated that this benefit was moderately applicable. However, another 20% also indicated that this benefit was lowly applicable to their firm. The majority of respondents in this study (80%, 95% and 70%) indicated that benefits of customer base growth, ease of management and competitive advantage were highly applicable to their firm.



**Figure 14: Benefits of ICT Use**

## 5.0 DISCUSSION CONCLUSIONS AND RECOMMENDATIONS

### 5.1 Findings

One of the objectives of this study was to determine the level and extent of ICT use by SMEs in Kenya. Findings in this study indicated that the majority of SMEs in Kenya had several forms of ICT such as computers, ETR machine, mobile phones and land lines. However, the majority of SMES included in the study had no internet connection and also did not have fax machines. To a large extent, the majority of SMEs used internet as a source of information, used computers in generating business documents such as invoices, used computers in data computation, used ETRs in computing and storing tax information, used fixed lines and mobile phones in communication with clients and used internet email as a convenient method of communication. However, SMEs used computers in storing data, used a website as an advertising tool and used faxes for transmitting documents to a low extent.

Another objective in the study was to determine challenges facing SMEs in using ICT. From this study, the majority of respondents strongly agreed that low internet penetration, fear of change, inadequate access to funds, high cost of software, high cost of hard ware and inadequate computer skills were significant challenges facing SMEs in using ICT. In addition, lack of awareness of potential areas of ICT application, poor information and telecommunication infrastructure, general constraints facing SMEs such as competition and legal constraints and lack of a clear ministerial policy were also identified as significant challenges to ICT use by SMEs.

The third objective of this study was to highlight the benefits of ICT use by SMEs. It was indicated in this study that use of benefits such as local expansion, regional expansion, cost containment on data processing and data storage, customer base growth, ease of management, cheaper advertising and promotion costs and competitive advantage were highly applicable to SMEs using ICT.

### 5.2 Conclusions

The researcher was able to conclude that, though SMEs had acquired several forms of ICTs, faxes and internet connection as forms of ICT remained elusive. Faxes were also rarely used for transmitting documents such as invoices and quotations. Whereas lack of faxes in offices could be attributed to preference of hand delivery or mail delivery of business documents among non-

sophisticated SMEs, lack of internet connection could be attributed to the high cost of connection and usage fee. However, surveys on larger firms indicate that faxes are very popular though the internet service connection problem still persists. The low use of a website as a marketing tool could be attributed to design costs and website maintenance fees. In addition, SME low use of computers for data storage could have been brought about by the cost of acquiring and maintaining a database system.

The researcher was also able to infer from this study that majority of challenges facing ICT use by SMEs were financial, infrastructural, and capacity (training and skills) in nature. Finally, the researcher concluded that the benefits accruing to SMEs using ICT positively affected the bottom line of SMEs as they led to increase in turnover and reduction in costs.

### **5.3 Recommendations**

One of the recommendations towards minimizing challenges of ICT use by SMEs was the introduction of ICT training schools for SME owners and staff. To facilitate this, both on the job courses and externally sponsored courses should be funded jointly by the government, NGOs and the SMEs themselves. The recent introduction of free government training to entrepreneurs wishing to set up ICT villages was a move in the right direction. The speedy completion of the fibre optic cable will go a long way into enhancing internet penetration. Workshops on creating awareness of potential areas of ICT application in SMEs need to be jumpstarted. The youth fund, the women fund, banks and other sources of funds need channel funds to ICT intensive SMEs. In addition; the sources of funds should emphasize the use of ICT by SME owners. By so doing, they will be bridging the financing gap. Finally, a policy frame work on SMEs needs to be worked on to facilitate growth of SMEs by eliminating general SME constraints such as legal and infrastructural constraints.

### **5.4 Suggestions for Further Studies**

The researcher would recommend a causal study on the relationship between ICT use and financial performance of SMEs. In addition, a conclusive study on whether user of ICT leads to an improvement in customer satisfaction will be necessary. Finally, does use of ICT lead to increased morale in the work force? To answer this question, a study in that line needs to be undertaken.

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