

# **The Influence of Policy Environment on Growth of Information Communication Technology (ICT) Firms in Nairobi, Kenya**

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## **ABSTRACT**

Entrepreneurship plays an important role in the socio-economic development of the country. Its significance can be seen in terms of contribution towards economic growth, employment creation, poverty reduction and development of an industrial base. Kenya is going through a paradigm shift from an industry based economy to a knowledge based economy anchored on ICT. The government has reiterated the development of ICT industry in the country given its strategic importance. These commitments manifest in the various policies and strategies that the government has put in place over time, aimed at the growth and expansion of ICT in the country.

Despite the policy and strategy pronouncements, there are various constraints that are currently facing the growth and expansion of ICT in the country especially amongst ICT providers. The Purpose of the study was to establish the factors affecting growth of ICT Firms in Nairobi. The specific objective of the study was; To establish the influence of policy environment on growth of ICT firms in Nairobi.

The study involved a case study of ICT firms in Nairobi. The target population constituted ICT service providers located in Nairobi. The study targeted 92 firms out of 304 registered ICT service providers in the CCK database. The sampling frame used was acquired from the CCK directory of licensed ICT providers 2012. Stratified random sampling technique was used based on categories of ICT service providers registered by CCK.

Questionnaires were used to collect data from a sample of 92 ICT Firms. The respondents were owner/ managers and selected employees. The study findings indicate that ICT policy environment significantly affects growth of ICT firms negatively or positively. Regarding ICT

policy environment; The government has fully liberalized ICT sector in the country, there is effective and fair regulation of the ICT sector in the country, the policy environment is conducive for the growth and expansion ICT in the country, the government has favorable ICT policy to promote growth and expansion of ICT, the government has effectively promoted ICT infrastructure in the country and Government supports capacity building in ICT sector. Despite the existence of a conducive policy environment, there are no sufficient policy incentives to enhance investment in ICT.

The study recommends the following regarding Policy Environment; The government should strive to improve the effectiveness of the existing institutions by strengthening the Department of Micro and Small Enterprise Development (DMSED) and MSE Associations, establishing National Council for Small Enterprises and legislating a Micro and Small Enterprises Act.

The government should undertake to invest in ICT research centres that nurture innovation and networking of entrepreneurs, streamline licensing procedures and enhance capacity building initiatives in ICT firms especially on emerging technologies and monetization strategies for application developers.

## **1.0 INTRODUCTION**

Entrepreneurs are individuals who discover market needs and launch new firms to meet those needs. They are risk takers who provide an impetus for change, innovation, and progress in economic life. The Small and Medium Enterprises (SMES) are businesses in both formal and informal sectors, classified into farm and non-farm categories employing 1-50 workers (GoK, 2005). These enterprises cut across all sectors of the Kenyan economy and provide one of the most prolific sources of employment creation, income generation and poverty reduction.

Today's business world has been deeply influenced by Information and Communication Technologies (ICT) and the application of ICT among business is widespread. ICTs are rapidly changing global production, work and business methods and trade and consumption patterns in and between enterprises and consumers. The Small and Medium Enterprises (SMEs) have been credited with enormous contribution to the growth of the developed economies of the world. In the same vein, the information and communication technologies (ICTs) and particularly the internet have played their own part in those economies. The American economy, the biggest economy in the world, depends largely on the success of SMEs for innovation, productivity, job growth and stability (Chandler, 1977).

The rapid transformations of the high performing Asian countries such as India, Malaysia, Indonesia, Taiwan and Hong Kong have also been hailed as proof that SMEs are major catalysts to economic development. Their importance to any economy hinges on their ability to stimulate ingenious entrepreneurship, to provide employment to a greater number of people, to mobilize and utilize domestic savings and raw materials, to provide intermediate raw-materials or semi-processed products to large scale enterprises and to curtail rural-urban migration.

The SMEs provide the cornerstones on which any country's economic growth and stability rests. As the world economy continues to move toward increased integration as a result of advances in information communications technology, and the increasing reduction in trade barriers, some of the greatest opportunities for small businesses will arise from their ability to participate in the regional and international markets (Mutula & Brakel, 2006).

The Kenya Vision 2030 envisages ICT as one of the key drivers of economic development as we strive to achieve the aspirations of the county's development plan. The SME sector is important in the social economic development of Kenya and is perceived as an engine for growth (GOK, 2008). However, SMEs seem ill equipped to confront the challenges of globalization, whose hallmark is Information Communication Technology (ICT) and innovation, a major determinant of competitiveness.

At the turn of the year 2010-2011 the World Bank published a press release accompanying its December 2012 Kenya Economic Update that showed that the overall Kenyan economy was at a "Tipping Point". The report estimated 4.9 percent growth in 2010 and 5.3 percent in 2011. The report specifically identified the telecommunications revolution as a key driver to the economic growth of the country. "The growth in ICT is significant and has out-performed all other sectors over the last decade. Without ICT, Kenya's growth rate would have been only 2.8 percent since 2000, barely exceeding population growth". The report attributes the "explosive" growth in ICT to the liberalization of the telecommunications sector, which induced competition and innovation, resulting in considerable investment and job creation. The report argues that Kenya could develop into a regional hub of IT innovations and IT-enabled services due to its cost advantages, investment in enabling infrastructure including fiber optic cables and a well educated and urbanized labor force.

Kenya is home to a modest ICT/ICTE industry, most of which has emerged after the recent liberalization of the telecom sector. Leaving aside the vast group of distributors and resellers of IT equipment, which in some cases can hardly be included in the category, the Kenyan ICT/ICTE sector is mainly comprised of small enterprises active in fields such as software customization, web design, ICT value-added services and IT consultancy. Typically, the services provided are very basic. In addition, some hardware assembling activity was set up after the government lifted the import duty on parts, but the amount is still very limited. The export of services—in the form of outsourced processes—is also very limited. There are only a handful of active BPO firms and call centres.

### **1.1 Statement of the Problem**

Entrepreneurship plays an important role in the socio-economic development of the country. Its significance can be seen in terms of contribution towards economic growth, employment creation, poverty reduction and development of an industrial base. In today's business environment, it is important that entrepreneurs keep up to date with technology.

The core of entrepreneurship is technology and innovation which help in creating entrepreneurial firms. The remarkable growth of the Information and Communication Technology (ICT) sector over the last two decades has transformed many economies. The drivers of economic growth have become more information-intensive and less dependent on natural resources. Affordable access to high-quality ICTs has become a key priority for policy-makers and businesses at large. In Kenya, the government has reiterated the development of ICT industry in the country given its strategic importance. These commitments manifest in the various policies and strategies that the government has put in place over time, aimed at the growth and expansion of ICT in the country. These are contained in the various policy documents and budget speeches, as well as the Vision 2030 (GoK, 2008).

Despite the policy and strategy pronouncements, there are various constraints that are currently facing the growth and expansion of ICT in the country especially amongst ICT providers. Duncombe and Heeks (1999) notes that these range from financial, human resources, to infrastructural development and maintenance among others. Therefore, this study sought to analyze the influence of policy environment on growth of ICT firms in Kenya by focusing on the ICT providers in Nairobi.

## **2.0 LITERATURE REVIEW**

### **2.1 Theoretical Framework**

The study applied Mark Casson's Economic Theory of Entrepreneurship as described below.

#### **2.1.1 Mark Casson's Economic Theory**

Casson (2003) holds that entrepreneurship is a result of conducive economic conditions. In his book "Entrepreneurship, an Economic theory" he states the demand for entrepreneurship arises from the demand for change. Economic factors that encourage or discourage entrepreneurship include: taxation policy, industrial policy, easy availability of raw materials, easy access to finance on favourable terms, access to information about market conditions, availability of technology and infrastructure and marketing opportunities.

#### **2.2 Conceptual Framework**

The conceptual model examined the factors that would possibly affect the growth of ICT firms. The conceptual model is shown in the Figure below.

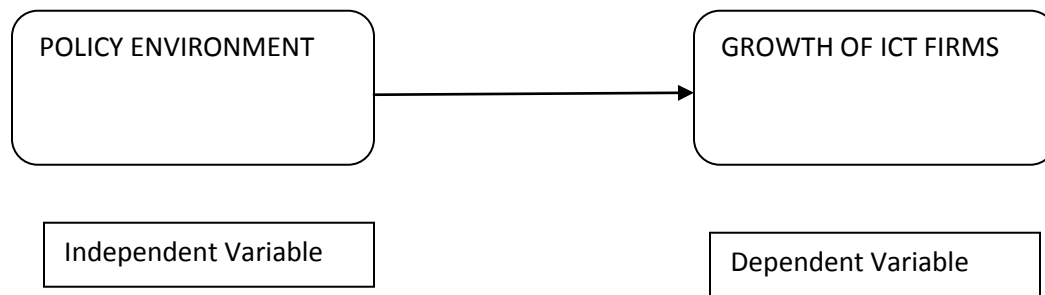


Figure 2.1: The conceptual framework

### **2.2.1 Policy environment**

According to GoK (2005), the major shortcomings in the MSE sector development have been inappropriate policy design, weak implementation framework and failure to institute and effectively monitor policy implementation. In the past, the policy formulation process and design has not been consultative and has mainly been driven by Government. As a result, the policies failed to address the specific needs of the target groups; and lacked ownership by the entrepreneurs.

Over the period there has been no provision for an institutional mechanism to promote consultation and coordination of stakeholders. The previous policy documents failed to address the critical area of delegation of responsibility and follow-up on the actual implementation to identify who was going to do what, when and how. In some instances, lack of clarity of roles and responsibilities of various stakeholders has led to conflicting signals to MSEs. At the operational level, poor coordination has led to duplication of efforts and sub-optimal utilization of scarce resources.

While the Government, in Sessional Paper No.2 of 1992, acknowledged the potential of the MSE sector in employment creation and poverty reduction, institutional framework for effective coordination of the various MSE policies, and programmes were not put in place. Specifically, there was no institutional mechanism within Government for identifying and resolving policy conflicts and for overseeing implementation of policies, and programmes. Neither was there a mechanism for co-ordinating all the stakeholders and facilitating their participation in policy development and implementation. Because of lack of a coherent Monitoring and Evaluation mechanism, it has not been possible to follow the progress on policy implementation to identify policy gaps, take corrective measures, develop feedback mechanism, and assess the impact.

Many economies already have national strategies for the telecommunications and/or information technology sector. Glaser notes that strategies vary according to social policy objectives, the market and policy tools adopted the size of the economy, income and demographic distribution, among other factors. Effective participation of governments and all stakeholders is vital in developing and Information Society requiring cooperation and partnerships among all of them (Glaser, 2001).

In a Geneva conference of 2005, it was noted that development of national e-strategies, including the necessary human capacity-building, should be encouraged by all countries by 2005, taking into account different national circumstances. Further, it was reiterated that at the national level a structured dialogue involving all relevant stakeholders, including public/ private partnerships, in devising e-strategies for the Information Society and for the exchange of best practices should be initiated (World Summit Information Society [WSIS], 2007).

Accordingly, it was observed that in developing and implementing national e-strategies, stakeholders should take into consideration local, regional and national needs and concerns. To maximize the benefits of initiatives undertaken, it was reiterated that these should include the concept of sustainability and that the private sector should be engaged in concrete projects to develop the Information Society at local, regional and national levels (World Summit Information Society [WSIS], 2005). In India, Pohjola (2002) noted that the state continues to play an important role in the ICT industry despite this more market-focused approach. Both central and state governments have made a concerted effort to bring low-cost connectivity and ICT enabled services to the “rural masses” for development purposes. Pohjola observed that there are as many as 150 rural personal computer (PC) - kiosk projects across India, which could provide the first computing experience for as many as 700 million people.

These efforts have typically been accompanied by positive images of poor rural people who leapfrog traditional development problems such as poverty, illiteracy and social inequalities, and who overcome the “digital divide”. Empowerment, economic growth, skills development, and ease of service delivery are routinely cited as the goals of ICT4D projects which is attributed to the government’s efforts is facilitating adoption of ICT (Keniston, 2002).

In a UNDP report of 2000, it was noted that in market economies, both the public and private sector can promote digital opportunity. In particular, it was noted that government has an important role to play in establishing an enabling environment for investment and market competition, as well as intervening to achieve socio-economic goals in areas where normal market incentives may be insufficient to create balanced growth (UNDP, 2000). It was however cautioned that the roles of governments and the private sector overlap and include various elements.

Firstly, positive incentives stimulating market dynamics for instance, by establishing an enabling environment for investment in ICT to attract private sector participation or in promoting the take-up of broadband. Secondly, measures preventing uneven development for example, by use of regulatory criteria or restrictions or counteracting negative effects like spam. For instance, in South Korea, the government successfully deployed broadband which contributed towards enhanced information transformation.

This, according to UNDP was because the Government recognized the role of ICT as an engine for economic growth from an early stage. In order to prioritize ICT development, the Government centralized ICT-related functions previously scattered across different

agencies. Ever since, the Ministry of Information and Communication (MIC) has played a central role in the planning and implementation of ICT development policy to enhance growth of ICT. Similarly, Estonia has proved an ICT success story, due to Government-led initiatives and an early decision to transform the economy from a state-planned economy to a market-oriented economy (United Nations Public Administration Network UNPAN], 2005).

A study by the Kenya Institute for Public Policy Research and Analysis (KIPPRA) notes that for growth of ICT, the government plays an important role in ensuring that technology takes root in an environment. To enhance this, KIPPRA observed that institutions and organizations supporting innovation, technology diffusion, transfer and adoption are necessary. Additionally, KIPPRA reiterated that science and technology education needs to be enhanced. In this regard, institutions of higher learning and middle colleges that can ensure that installations, maintenance, assimilation and sustenance of systems are possible should be encouraged and supported by government (KIPPRA, 2002).

According to WIS (2005), developing countries are often disadvantaged by limited ICT infrastructure, human resources, insufficient policy incentives and scarce investment. Additionally, the high cost of services and other barriers may constrain growth in ICTs.

There is a close correlation between digital opportunity and GDP per capita: digital opportunity tends to be greater in wealthier economies, but digital opportunity can also generate wealth, resulting in a positive feedback cycle. In the WIS report, it was observed that countries with similar levels of digital opportunity may experience different growth outcomes depending on their policies. In some cases, for instance, these disparities may result from the adoption (or failure to adopt) a particular technology (UNDP, 2000). In certain cases, innovative technologies (or services) have been used by developing countries to leapfrog their own development.

For example, China is moving directly to broadband internet access without a large installed base of dial-up internet users. India, on the other moved directly to digital mobile service without investing first in analogue services. In general, developed countries benefit from the faster adoption and greater diffusion of new technologies, while developing countries often experience faster rates of growth.

In market economies, both the public and private sector can promote digital opportunity. Miles (2001) notes that government has an important role to play in establishing an enabling environment for investment and market competition, as well as intervening to achieve socioeconomic goals in areas where normal market incentives may be insufficient to create balanced growth.

### **2.3 Critique of the existing literature relevant to the study**

Sewe (2010) in his study on factors affecting growth of ICT sector in Kenya focused on industry factors, economic factors and policy and strategy factors. The study identified various impediments towards the growth and expansion of the ICT sector in the country. These are in terms of policies and strategies, economic factors as well as industry factors.

In terms of economic factors, various factors were identified to be affecting the expansion and growth of ICT. These include tax incentives, incentives for investment in the ICT sector and access to current information on ICT. Other factors identified included; regulatory requirements by the government which inhibits investment in ICT, license fees and license requirements and political risks. On the other hand, the study identified various industry factors as inhibiting growth and expansion of the ICT sector. These include interconnection framework that was perceived to be unfavorable, lack of innovation and human capacity building strategies and existence of an adequate pool of highly trained skilled labor. Others include lack of proper training, inadequate management skills among senior managers, high interconnection charges, poor organizational culture, low adoption of technological skills, and low ICT usage and penetration habits among others.

Various policy and strategy supported factors were identified. These range from Licensing regulations, procedures and process as the most important, followed by ICT laws, uncoordinated government support of ICT innovation, diffusion, transfer and adoption by stakeholders, allocation of adequate bandwidth, sloppy conducive policy environment, lack of ICT policy as well as multiple regulatory institutions, non harmonized and standardized ICT infrastructure, ineffective and fair regulation of the ICT sector, harmonized and standardized ICT access methods, ICT regulatory measures.

The study failed to lay an emphasis on the role of the key enterprise success determinants namely policy environment. This study will strive to address the role of these factors in determining the growth of ICT firms in Nairobi.

### **3.0 RESEARCH FINDINGS AND DISCUSSION**

#### **3.1 Policy Environment**

This was one of the independent variables used in the study. This section will present results regarding ICT and SME policy environment and how it influences growth of ICT firms.

The findings relate to liberalization of ICT sector, regulation of the ICT sector, conducive policy environment, government promotion of ICT infrastructure, policy incentives and capacity building in ICT sector.

##### **3.1.1 Liberalization of ICT sector in the country**

The table below summarizes the status of Liberalization of ICT sector in the country and how it affects growth of ICT firms.

Table 3.1 Crosstab of Number of employees and liberalization in ICT sector



Table: No\_of employees \* Liberalization ICT\_Sector [count, total %]

No_of employees	Liberalization ICT_Sector			
	Disagree	Uncertain	Agree	Total
1-10	13 18.3%	9 12.7%	27 38%	49 69%
11-50	8 11.3%	3 4.2%	7 9.9%	18 25.4%
51-100	0 0.0%	3 4.2%	1 1.4%	4 5.6%
Total	21 29.6%	15 21.1%	35 49.3%	71 100.0%

Forty nine percent (49%) of the respondents agreed that that the government has fully liberalized the ICT sector, 21% were uncertain and 30% disagreed. A liberalized ICT sector entails fair play in business characterized by lack of or absence of monopolies. Liberalization has introduced many players in the ICT market which in the process has spurred competition, improved quality and reduced prices ICT goods and services.

### 3.3.2 Regulation of the ICT sector in the country

The figure below summarizes the feedback from respondents on Regulation of the ICT sector in the country and its effect on growth of ICT firms.

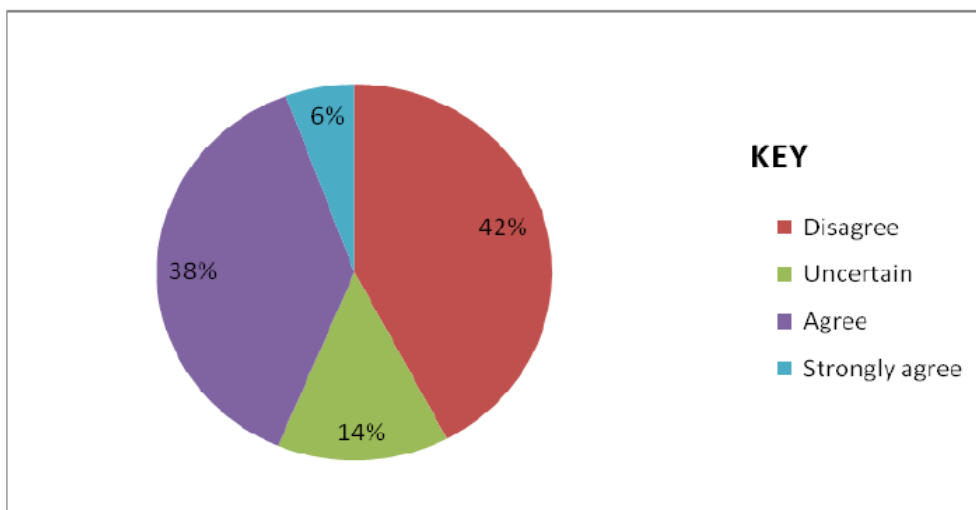


Figure 3.1 Regulation of the ICT sector

Figure 3.1 indicates that 38% of the respondents agreed that there is effective and fair regulation of the ICT sector in the country, 42% disagreed, 14% were uncertain and 6% strongly agreed about presence of fair regulation in ICT sector. In March 2006, the Government released the Information and Communications Technology Sector Policy Guidelines via the Kenya Gazette Notice Vol. CVIII – No. 24. The Guidelines were released following an extensive

consultative process with stakeholders. The Guidelines are envisaged to replace the Telecommunications and Postal Sector Guidelines of December 2001.

In 2008, CCK implemented the unified licensing framework to license ICT service providers. The framework borrows from the paradigm shift of technology convergence as opposed to technological oriented licensing which is no longer tenable as it is costly to service providers. Under unified licensing framework, ICT service providers can offer a wide array of services using a single licence (GoK, 2006).

### 3.3.3 Conducive policy environment

The table below shows the influence of a conducive policy environment on growth of ICT firms in Nairobi.

Table 3.1 Rating on conducive policy environment

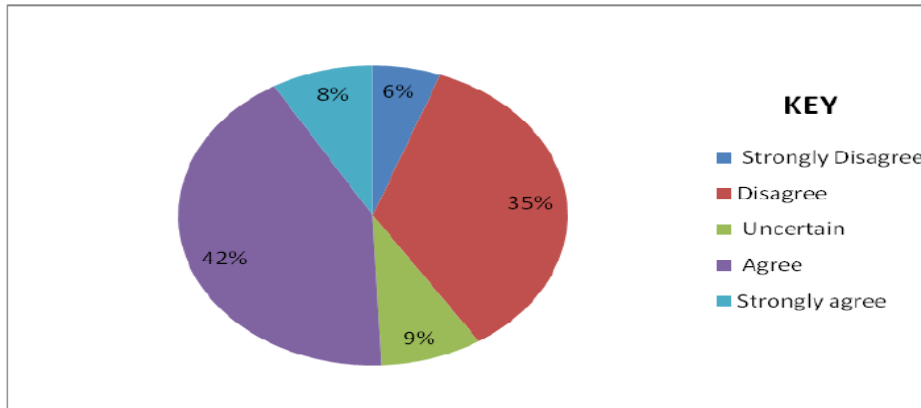
Table: Duration\_Operations \* Conducive\_policy\_environment [count, total %].

Duration_Operations	Conducive_policy_environment				Total
	Disagree	Uncertain	Agree	Strongly Agree	
Less than 1 year	1 1.4%	3 4.2%	3 4.2%	0 0.0%	7 9.9%
1-5 years	6 8.5%	7 9.9%	8 11.3%	4 5.6%	25 35.2%
6-10 years	2 2.8%	1 1.4%	22 31.0%	0 0.0%	25 35.2%
11-15 years	0 0.0%	3 4.2%	7 9.9%	0 0.0%	10 14.1%
15 and above	0 0.0%	0 0.0%	4 5.6%	0 0.0%	4 5.6%
Total	9 12.7%	14 19.7%	44 62.0%	4 5.6%	71 100.0%

Table 3.2 indicates that 62% of the respondents agreed that the policy environment is conducive for the growth and expansion ICT in the country, 6% strongly agreed, 20% were uncertain and 12% disagreed. A conducive policy environment is a major catalyst of business growth as it acts as an enabler of the factors of production to make economic sense.

### 3.3.4 Government has promoted ICT infrastructure in the country

The figure below shows the role of government on promotion of ICT infrastructure in the country and its effect on growth of ICT firms in Nairobi.



**Figure 3.2 Government promotion of ICT infrastructure**

Figure 3.2 indicates that 42% of the respondents agreed that government has promoted ICT infrastructure in the country, 8% strongly agreed, 9% were uncertain, 35% disagreed and 6% strongly disagreed. The government has played a key role in promoting ICT infrastructure. Such initiatives include the laying of fiber optic cable country wide to offer fast connectivity to the global community. The Malili Technopolis is a technology business park project developed under the Ministry of Information and Communication aimed at transforming the Kenyan economy using IT-enabled services (ITES) by the year 2030. The technopolis will host a BPO park, a financial district, a science park, a world class convention center, a mega mall and several hotels. It will also have schools, hospitals and other recreational facilities, plus a high-speed train link to Jomo Kenyatta International Airport that will take just 11 minutes. The development leverages Kenya's unique status as a cultural, political, economic and transportation hub for Eastern Africa to lead the region in joining the Global Information Economy. Around the world, technology parks have become the norm for research-industry interactions and for stimulating growth of technologically intensive, knowledge-based businesses. They also facilitate links between research and industrial communities, often working with local businesses and scientific faculties of universities (GoK, 2013).

**3.3.5 Sufficient policy incentives to enhance investment in ICT**

The table below summarizes findings on presence of sufficient policy incentives to enhance investment in ICT and its effect on growth of ICT firms in Nairobi.

Table 3.3 Policy incentives to enhance investment in ICT

Table: No\_of employees \* policy\_Incentives [count, total %]

No_of employees	Policy Incentives			Total
	Disagree	Uncertain	Agree	
1-10	33 46.5%	13 18.3%	3 4.2%	49 69%
11-50	5 7%	10 14.1%	3 4.3%	18 25.4%
51-100	0 0.00%	1 1.4%	3 4.2%	4 5.6%
Total	38 53.5%	24 33.8%	9 12.7%	71 100.00%

Table 3.3 shows that 53% of the respondents disagreed that there are sufficient policy incentives to enhance investment in ICT, 34% were uncertain and 13% agreed that there were sufficient policy incentives to enhance investment in ICT sector. Some policy incentives already in place include the waiver on value added tax (VAT) on ICT products imports such as computers, mobile phones and related accessories. This has contributed to significant growth of telecommunication equipment vendors.

### 3.3.6 Government supports capacity building in ICT sector

The figure below summarizes findings on whether government supports capacity building in ICT sector and its effect on growth of ICT firms in Nairobi.

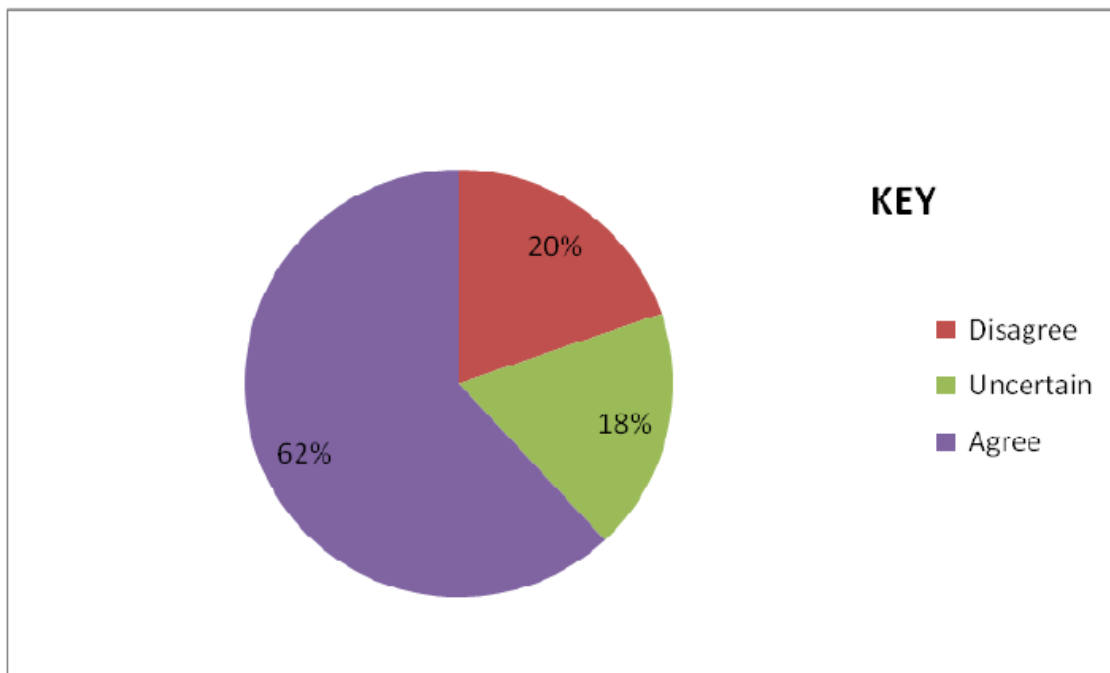


Figure 3.3 indicates that 62% of the respondents agreed that Government supports capacity building in ICT sector, 20% disagreed and 18% were uncertain. Capacity building initiatives through the Kenya ICT board have gone a long way in promoting growth of ICT firms. This has been achieved through conferences, seminars, boot camps and exhibitions

## **4.0 SUMMARY, CONCLUSIONS AND RECOMMENDATIONS**

### **4.1 Introduction**

The section covers the summary, conclusions and recommendations of the major findings based on the research questions in the study.

### **4.2 Summary**

The study findings indicate that policy environment, access to financial services and access to markets significantly affect growth of ICT firms negatively or positively. Regarding ICT Policy Environment, the government has fully liberalized ICT sector in the country, there is effective and fair regulation of the ICT sector in the country, the policy environment is conducive for the growth and expansion ICT in the country.

Additionally, the government has favorable ICT policy to promote growth and expansion of ICT, the government has effectively promoted ICT infrastructure in the country and Government supports capacity building in ICT sector. Despite the existence of a conducive policy environment, there are no sufficient policy incentives to enhance investment in ICT.

### **4.3 Conclusions**

The study indicates that majority of respondents agreed that the government has fully liberalized ICT sector in the country, there is effective and fair regulation of the ICT sector in the country, the policy environment is conducive for the growth and expansion ICT in the country, the government has effectively promoted ICT infrastructure in the country and government supports capacity building in ICT sector. Despite the existence of a conducive policy environment majority of the respondents disagreed that there are sufficient policy incentives to enhance investment in ICT.

### **4.4 Recommendations**

The government should strive to improve the effectiveness of the existing institutions by strengthening the Department of Micro and Small Enterprise Development (DMSED) and MSE Associations, establishing National Council for Small Enterprises and legislating a Micro and Small Enterprises Act. These institutions and legal framework will strengthen policy coordination, implementation, and monitoring and evaluation, which have been largely lacking in previous attempts by Government to promote the MSE sector (GOK, 2005).

Additionally the government should undertake to invest in ICT research centres that nurture innovation and networking of entrepreneurs from developed countries in Europe and America, streamline licensing procedures and enhance capacity building initiatives in ICT firms especially on emerging technologies and monetization strategies for application developers. The Kenya ICT board in the Ministry of Information and Communication should be empowered to guide

investors and technopreneurs as they invest in the ICT sector. The board should also be in the frontline in ensuring the National ICT master plan is fully implemented.

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