

An Evaluation of the Perceived Effect of ICT's on the Performance of Sacco's in Kenya (Case of Licensed Sacco's, Nairobi County)

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Abstract

Many scholars have argued that ICT is a major contributor to performance of organizations. The theorist of modernization argued that developing countries lag behind in terms of development due to their failure to adopt modernity that led to development in the developed countries. ICT is a basic infrastructure that can transform the performance of business sectors. Therefore there is need to exploit ICT to strategically position the organizations to benefit from an increasingly information driven global economy. The competitiveness of firms in the context of the current economic challenges requires effective management activities and a strategic importance directed towards a better administration of knowledge and the impact of Information Technology and Communication on organizational structures. The study therefore sought to evaluate the perceived effect of ICT on performance of Sacco's in Kenya through a census survey of 34 licensed Sacco's in Nairobi County. The study specifically evaluated the prospects of ICT in Sacco's in meeting their stated objectives, the level of awareness in Kenya, the levels of innovations, existing infrastructure, integration of the cooperative processes and the perception amongst the stakeholders. The study focused on the perceived ICT factors towards performance such as innovations, infrastructure, awareness and policies. A comparative case study selected from different social economic settings and a Survey Research design were used. Data was collected using questionnaires to provide an insight into the phenomena.

Keywords : Sacco's , Innovations , Information and Communication Technology , Infrastructure

1. Background of the Study

Evaluating information and communication technologies (ICT) investment payoff constitutes a key concern for companies in managing their ICT resources. Companies are compelled to find ways to evaluate the specific impact of different types of ICT on the several dimensions of their performance. ICTs are defined as technologies that facilitate communication and the processing and transmission of information by electronic means. They have an enormous potential as tools for increasing information flows and empowerment of poor people. It is emerging as an important medium for communication and exchange as well as a tool for development. ICTs, whether older ICTs such as telephone, radio and television, or the newer ICTs such as VCDs, computers or the Internet, can help in several dynamic ways to bridge gaps in livelihood opportunities by providing localized and relevant information to the community. Technological innovation has generated considerable interest among academics and practitioners in recent years. In recent decades, Information and Communication Technologies (ICT) such as computer terminals, e-mail and the Internet and their applications have become the major drivers of innovation, growth and social change.

Moreover, as the OECD points out (OECD, 2010), in times of crisis there must be a focus on the contribution of ICT to innovation and growth and performance. However, although interest in this subject has grown substantially, research on the importance of the combination of organizational change together with technological innovation has been less common. Some studies suggest that technological innovation is not an isolated source of improvement, but part of a system or cluster of mutually-reinforcing organizational approaches. . Innovations in Information and Communication Technologies (ICTs) have brought tremendous changes in the financial sector, resulting in new delivery channels for banking products, and services, which include ATM's, Internet banking, telebanking, PC banking and various others. According to (Brynjolfsson 2003), ICT increases productivity and operational efficiency in specific business processes, not only by reducing costs but also by impacting on intangible assets such as quality improvement in design processes or life-cycle enhancement in inventory management systems The management literature recognizes numerous concepts and variables to measure performance. For example, March and Sutton (2007) mention profits, sales, market share, productivity, debt ratios and stock prices. Ittner et al. (2007) differentiate between financial and non-financial measures of performance where many of these different measures are correlated.

ICT innovation and implementation in Kenya is still in its infancy (Ochara, 2008). The cooperative sector has evolved in the use and application of ICT in their day-day activities as technology shift from one level to another. The growth of the ICT sector in Cooperative societies in Kenya has been significantly influenced by local and global trends, it can be evaluated in terms of number of fixed and mobile telephone lines; the number of computers and services; Sacco-link services, M-Sacco, the number of Internet users; broadcasting stations; and market share of each one of them. To a certain extent, what propels ICT to the forefront was Kenya's intention to be a fully developed nation by the year 2030 – a concept now widely known as Vision 2030.

The former Ministry of Cooperative development and marketing in Kenya undertook a study into “ways of providing linkages and serious reflection around the challenge of implementing an ICT driven Cooperative societies in Kenya” in 2006 and observed that ICT use could provide a competitive edge. This study therefore will deal with evaluating the effect of ICT on Sacco's performance. Its objective is to summarize recent research results on this topic based on a literature review and to develop and test the organizational performance.

1.1 Statement of the problem

The Government of Kenya through the Ministry of Information and Communication Technology embarked on a series of initiatives to tap on the benefits of ICT by initiating measures to revive and transform the economy into a modern market-oriented one. The aim was to improve the economic well being of Kenyans by establishing Kenya as a centre of industrial and financial activities in the region (MIC strategic plan 2006- 2010).

Cooperative societies therefore initiated the use of ICT's in order to cope with the growing competition in offering their services and laying out the strategies. This use has thereby played a significant role in the performance of Sacco in service delivery and management in an effective and efficient manner.

Past research studies has been done on how Cooperative movement could harness awareness regarding the power of ICT's in improving the livelihoods and also incorporate the same in theory and practice within its operations for efficient and effective achievement of its objectives on the services sector firms (Samson Gunga, 2006), and have examined the relationship between ICT and firm's performance (Cozzarin and Percival, 2010). and the effect of Innovation and Information Technology on performance of Canadian firms (Surendra Gera & Wulong Gu 2004). However these studies have not significantly evaluated the effect of ICT's as a major contributor to the performance of the Sacco's in Kenya.

The purpose of this research was therefore to evaluate the perceived effect of ICT towards the performance of Sacco's in Kenya by helping in either cultivating new markets by reaching out to different customer bases on the web, content and applications, keep up-to-date with developments and new innovations, transformation of the management of cooperatives, improvement of management practices in financial information and reporting and records management as well as create an online presence so as to increase efficiency and lower operating costs.

1.2 Objectives of the study

The research intended to evaluate the prospects of ICT on the performance of Sacco's to ensure a competitive advantage to other related institutions in Kenya.

The general objective is:

- i. To evaluate the perceived effects of ICT on the performance of Sacco's in Kenya.

The specific objectives of the study include the following issues:

- i. To evaluate the effect of ICT infrastructure on performance of Sacco's.
- ii. To evaluate the ICTs innovations in Sacco's performance.
- iii. To evaluate the contribution of ICT in level of awareness in performance of Sacco's.
- iv. To evaluate how ICTs empowers members by use of polices and platforms that promote their services express their views and share good practices?

1.3 Research Hypothesis

H₁: There is no relationship between ICT infrastructure and the performance of Sacco's.

H₂: There is no significant relationship between Innovations and the performance of Sacco's.

H₃: There is no significant relationship between ICT awareness and performance of Sacco's

H₄: There is no significant relationship between ICT policies and the performance of Sacco's

2. LITERATURE REVIEW

2.1. Information and Communication Technology

Today, ICT is so widely available that it can hardly be described as being scarce, or difficult to imitate, and thus it satisfies the necessary criteria to be considered critical.

According to much theoretical and empirical evidence, ICT offers benefits for a wide range of business processes and improves information and knowledge management within the firm, leading to better performance.

Firms can manage their processes more efficiently and as a consequence, they increase their operational efficiency. Moreover, ICT reduces the coordination costs of the firm because of lower procurement and inventory costs and closer coordination with suppliers (Tachiki et al., 2004; OECD, 2004). In addition, communication based on ICT and the Internet can also improve external communication, reducing the inefficiencies resulting from lack of co-ordination between firms, and increasing the speed and reliability of information processing and transfer. In general, ICT reduces transaction and coordination costs, maximizing the value of the transactions (OECD, 2004).

Information Communication and Technology (ICT) is an enabling tool in performing business functions: It is the practical application of knowledge in the areas of information and communications (Heeks, 2002) (Hosman L, Fife E, Armev E, 2008). It is about information and communication and not just about computers, internet and telephone lines (Roman & Colle, 2008). According to Angello & Wema (2010) defines ICT as the procedures, methods and tools that aid the process of accessing information electronically and eventually transmitting it to others for the purpose of communication.

ICTs are also defined as technologies that facilitate communication and the processing, transmission of information by electronic means. These technologies have enormous potential as tools for increasing information flows and empowerment of poor people. ICT is emerging as an important medium for communication and exchange as well as a tool that has increased performances. ICTs, whether older ICTs such as telephone, radio and television, or the newer ICTs such as VCDs, computers or the Internet, can help in several dynamic ways to bridge gaps in livelihood opportunities by providing localized and relevant information to the community.

ICT is an increasingly common feature of our more globalized world. Most countries even the poorest ones have dedicated a lot of resources to ICT through local and multinational investments or through channels of international development aid (Avgerou, 2008). This is because they offer marginalized groups unexpected opportunities to innovations and practices; however these opportunities are limited to their knowledge scope (Kamel, 2005).

Evidence from developed countries has shown that ICT can play a dramatic role in enhancing economic and social development by acting as a production sector for economic growth and an enabler for social development. ICT applications have enabled these countries to make substantial improvements in both productivity and quality in agriculture and services such as finance and cooperative sector. (The Ministry of Information & Communications 2006)

The benefits of ICT have been recognized worldwide and national policy makers have realized the need to restructure organizations, encourage democratic participation by citizens, promote collaborations and avail social services to the people in order to reap the full potential of ICT (Kozma, 2005). For example, technology transfer from one society to another involves the importing of that technology into an 'alien' cultural context where its value may not be similarly perceived to that in its original host culture (Walsham, 2001). This has resulted to uneven distribution of ICT benefit between organizations in developed countries (DCs) and the less developed countries (LDCs)

Conversely, critical value may reside in the complementary or synergic effects of ICT with internal resources and capabilities of the firm. Recently, the empirical literature has begun to re-assess the association between ICT and a wide variety of complementary factors (Arvanitis and Loukis, 2009; Giuri et al., 2008; Aral and Weill 2007), with a consensus emerging that, in order for ICT to be properly utilised, it must be used in conjunction with complementary resources such as organisational structure, human resources or organisational resources (Walton, 1989; Bélanger and Collins, 1998; Bresnahan et al., 2002; Mata et al., 2005; Ramírez et al., 2001; Peppard and Ward, 2004; Aral et al., 2010).

ICT is highly correlated to performance of organizations. In general, the concept of organizational performance is based upon the idea that an organization is the voluntary association of productive assets, including human, physical, and capital resources, for the purpose of achieving a shared purpose (Jensen & Meckling, 1976; Simon, 1976).

Many scholars have therefore undertaken the study of potential benefits of ICT as a driver for good performance (Andrade & Urquhart, 2009). Access to and the strategic use of information and communications technologies (ICTs) have been shown to have the potential to help bring about economic development, poverty reduction, and democratization (Qureshi Sida, 2009). ICT enables people and enterprises to capture economic opportunities by increasing processes efficiency, promoting the participation in expanded economic and business networks, and creating employment opportunities. The strategic focus of Kenya's ICT Strategy for Economic Growth is to simultaneously target the development of the ICT sector and to use ICTs for employment creation, poverty reduction as well as a broad-based enabler for economic recovery and the achievement of national developmental goals. Due to its dynamism, ICTs promise fundamental change in all aspects of human life including knowledge dissemination to individuals and organisations, social networking, economic and business practices, political and social engagements, education, health, leisure, and entertainment (Duncombe & Heeks 2006). ICTs are also useful either as tangible goods in their own right or as value-adding services that

improve efficiency and effectiveness (Stiglitz 1989; Romer 1993; World Bank 2008).

New ICTs offers many opportunities to performance in organizations for knowledge diffusion, economic opportunities thus improving the well being of the population and improving governance through knowledge sharing among institutions and government and taking services closer to the local (Kamel 2005). Qureshi (2009) suggests that ICT promotes the growth of small businesses and their regions. ICT can enable a business gain competitive advantage by enabling businesses creates more jobs, increase productivity and operational efficiency.

2.2. Cooperative societies in Kenya

The International Cooperative Alliance (ICA 2004) defines a cooperative as "...an autonomous association of persons united voluntarily to meet their common economical, social and cultural needs and the aspirations through a jointly owned and democratically controlled enterprises". A cooperative society is meant to embody the values of self-help, honesty, openness, self-responsibility, social responsibility, democracy, equality, equity, solidarity, mutual caring, efficiency, effectiveness, transparency and accountability. ICA identifies seven principles that ought to guide the formation, organization and activities of cooperatives: Open and Voluntary membership, Democracy member control, economic participation of member, Autonomy and independence, Cooperative Education, training and information, Cooperation among Cooperatives, Concern for Community.

In addition, as community institutions, cooperatives devolve decision making to the community level, build social capital, nurture community spirit and pride (Reynolds 1998). Currently the governments expect cooperatives to inform policy making and engage in advocacy while the cooperatives themselves seek a more pronounced, active and permanent role in decision-making (Mercoiret 1999). The shared spirit of cooperation and empowerment leads to engagement in larger projects such as reconstruction of schools or health facilities.

Savings and credit Cooperative societies in Kenya play an important economic role in many countries, as widely known as Cooperative movement. The Co-operative Movement in Kenya may be traced to the period immediately after the country's independence. The movement is supposed to play an important role in creation of wealth, food security, generation of employment and hence participate in the poverty alleviation. Currently, there are over 11,200 registered cooperative societies country-wide. The membership is over 6.1million and has mobilized domestic savings estimated at over Kshs. 125 billion. The cooperatives have employed over 300,000 people besides providing opportunities for self-employment. Indeed, a significant number of Kenyans, approximately 63% draw their livelihood either directly or indirectly from Cooperative-based enterprises (Republic of Kenya 2007; International Monetary Fund 2007)

The policy objective of the Kenyan cooperative movement is to spur sustainable economic growth by focusing on achievement of desired outcomes through strengthening of the movement, improving cooperative extension in service delivery, corporate governance, access to markets and marketing efficiency (International Monetary Fund 2007). The cooperatives have an immense potential to deliver goods and services in areas where both the public and the private sector have not ventured (Verma 2004).

2.2.1. ICT and Cooperative subsector in Kenya

Sacco societies have embraced the use of technology to deliver services to members. Most notable has been the connectivity to ATMs and mobile delivery channels by a majority of the FOSA Sacco societies. As at the end of 2010, over one hundred had connected to the Cooperative Sacco Link network several others hooked on the Pesa point ATM network.

The use of mobile phone to deliver financial services has seen software vendors in the Sacco subsector partner with the telecommunications companies to integrate mobile solutions to their core systems.

A number of Sacco's are now able to have their members withdraw or deposit money into the FOSA account, make enquiries on the accounts, get notifications on their loans as well as pay for bills. This is significant development as it has allowed members access FOSA services conveniently without the cost of travelling to withdraw or deposit cash in FOSA. (Sacco supervision report ,2010)

2.3 Empirical Review

Empirical evidence suggests that organizational changes may improve economic performance of firms through their mutually-reinforcing relationship with ICT. OECD (2004) argues that ICT is a key to facilitating new organizational approaches, from lean production to teamwork to customer relations. ICT enable firms to introduce significant organizational changes in the areas of re-engineering, decentralization, flexible work arrangements and outsourcing. It allows firms to produce with greater flexibility and shortened product cycles to satisfy shifting consumer preferences. In fact, organizational innovation and ICT may be regarded as complementary factors. To be successful, firms typically need to adopt ICT as part of a "system" or "cluster" of mutually reinforcing organizational approaches (Milgrom and Roberts, 1990).

Dent& Powell (2007) find that ICT alone has not produced sustainable performance advantages, while some firms have gained competitive advantages by using these technologies with complementary human and

organisational resources.

Crespi et al. (2007) examine the relationships between productivity growth, ICT investment and organizational change in UK firms, and their results support the idea that gains from IT need re-organization to produce measured productivity growth.

Gretton et al. (2004) obtain empirical evidence of the positive impact of complementarities between the use of ICT and human resources, innovative business practices, and intensity of organizational change on the productivity growth of Australian companies.

In a comparative study, Arvanitis and Loukis (2009) offer empirical evidence of the positive impact of ICT capital, human capital and new organizational practices on labour productivity in Greece and Switzerland, while they observe that the Swiss firms are more mature and more efficient at combining these new production factors.

Recently, the empirical literature has begun to re-assess the association between ICT and a wide variety of complementary factors (Arvanitis and Loukis, 2009; Giuri et al., 2008; Aral and Weill 2007), with a consensus emerging that, in order for ICT to be properly utilized, it must be used in conjunction with complementary resources such as organizational structure, human resources or organizational resources (Walton, 1989; Bresnahan et al., 2002; Mata et al., 2005; Ramírez et al., 2001; Peppard and Ward, 2004; Aralet et al., 2010).

ICT evaluation can be defined as establishing by quantitative, and/or qualitative methods the value of the ICT to the organization (Khalifa et al. 2004). Performance cannot be judged as good or bad without the successful implementation of the project. In their paper, the technical or operational implementation of ICT infrastructure was of interest.

Evaluating ICT projects can be quite problematic and can sometimes be quite subjective (Heeks 2002, , Bannister, Remenyi 2004, Irani 2002, DeLone and McLean 2002) and there is no single ICT evaluation method that can be applied to all situations (Khalifa et al. 2004). Currie (2005) justifies this position using various case studies drawn from businesses in various developed countries while (Heeks 2002) observes that evaluation is subjective and can depend on circumstances including time. Evaluation leads to the determination of success or failure of an ICT project

2.4 Conceptual Framework

2.4.1. Innovations

Information and Communication Technology (ICT) innovations are delivering home-grown solutions in Africa, transforming businesses performances and driving entrepreneurship and economic growth (World Bank 2010). OECD (2004) argues that ICT improves productivity by enabling “organizational innovation”. The greatest benefits from ICT appear to be realized when ICT investment is combined with other organizational assets, such as new strategies, new business processes, new services.

Innovative performance in the narrow sense refers to results for companies in terms of the degree to which they actually introduce inventions into the market, i.e. their rate of introduction of new products, new process systems or new devices (Freeman and Soete, 2007). In that case new product announcements can be applied as an indicator of innovative performance. A broader understanding of innovative performance encompasses the three previous measures of performance as it indicates the achievement in the trajectory from conception of an idea up to the introduction of an invention into the market (Ernst, 2001).

To satisfy customers, organizations must design, manufacture, and deliver products and services that meet their tangible and intangible needs better than their competitors, and provide superior value. In order to retain and maintain customers and build loyalty, firms provide quality after-sales and other services (Monga, 2008).

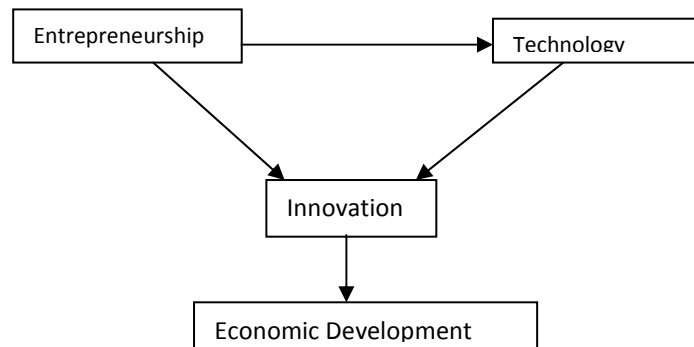
Technological innovation has generated considerable interest among academics and practitioners in recent years. In recent decades, Information and Communication Technologies (ICT) such as computer terminals, e-mail and the Internet and their applications have become the major drivers of innovation, growth and social change. Moreover, as the OECD points out (OECD, 2010), in times of crisis there must be a focus on the contribution of ICT to innovation and growth.

Intensified competition between SACCOs as well as allowing members to easily compare offers provided by different SACCOs has heightened the rate of member switching. This „frictionless commerce“ tends to raise members“ expectations about services and products and makes them more prone to switching to other service providers. Innovation in its widest sense is considered to be anything that is new to a business or as comprising new products and processes; and significant technological changes of products and processes (Hine and Kapeleris, 2006). They add that innovation has been implemented if it has been introduced on the market (product innovation) or used within a production process (process innovation). There are five types of innovation, namely, introduction of a new commodity; introduction of a new production method; opening up of a new market; change in source of supply; and re-organization of industry. Hine and Kapeleris (2006) say that process

innovation refers to the adaption of new or significantly improved production methods – methods that may involve changes in equipment or production organization or both. They add that there is the non-technological innovation that relates to operation of business.

Hine & Kapeleris argue that entrepreneurship, technology and innovation have a causal relationship as demonstrated below.

Relationship between innovation and economic development



Source: Hine & Kapeleris (2006)

The principles of cooperatives are, however, different from those used by other private businesses such as corporations and create distinct problems for cooperatives in raising capital. For example the common practice for cooperatives in this country is to do business only within the common membership. To be successful therefore, a cooperative needs at least to maintain a large volume of member transactions. With increased competition, it can only do this through continual improvements in services while maintaining competitive prices. Improved service may mean expanding the range of products and services offered to members while improving the delivery of existing services. Firms position their brands by selecting optimal mix of tangible and intangible attributes as well as prices. The distribution of consumer preferences and the existing or anticipated positions of competitive brands are both critical inputs in positioning decisions. Product positioning, therefore, require a synthesis of consumer and competitor analysis (Singh, 2001). A company that overlooks new and better ways to do things will eventually lose customers to another company that has found a better way (Kotler and Armstrong, 2004).

2.4.2. Infrastructure

The effective functioning of the ICT infrastructure relies heavily on the support of a good telecommunication system. Today, it is almost impossible for any business to operate smoothly without a reliable telecommunication system in place because effective telecommunication is an important support in providing a low cost channel for searching, gathering and exchanging information.

Recent study has acknowledged the importance of modern information and communications technologies in reducing the international trade costs. The costs of entering into a contract and monitoring the contracted suppliers are correlated with the quality of communication services provided. Park and koo (2005) found that telecommunication investments in both exporting and importing countries are significant and positively related to the value of bilateral trade between them. Similarly, Nordas and Piermartini (2004) also found that telecommunications has a significant positive effect on trade flows. They argue that 'the cost of not being able to place a telephone call or access the internet may be just as important as the cost of making the call'.

As a result, the telephone becomes a primary point of selling for many industries, a channel of marketing and sales for some industries. Parallel to this, the internet too has become an increasingly important complementary channel which serves the same purpose like the telephone. Fink et al . (2002) includes the cost of a telephone call in a gravity model and found that the cost has a significant negative effect on bilateral trade flows. In another study, Limao and Venables (2001) incorporates the number of mainlines available as the proxy for infrastructure quality while Francois and Machim (2007) consider the use of mobile telephone as a determinant of infrastructure development. In line with the view that communication costs are an important part of trade costs, these studies conclude that improvement of the related infrastructures have a positive effect on bilateral trade. Therefore, to facilitate smooth flow of information, internet accessibility and telecommunications networks should provide the needed supporting infrastructure. By using a gravity equation of trade among 56 countries, Freund and Weinhold (2004) indicate that 10% increase in the relative number of web hosts in one country would have led to about 1% greater trade. Furthermore, Tanzi (2005) argues that by

reducing transport and telecommunication costs, it enlarges the labour markets for labours as well as the goods and services market. Cross-border trade in services largely depends on telecommunications as the channel for transactions, but anecdotal evidence suggests that new technology can sometimes create barriers between those connected and those not connected in low-income countries (World Trade report, 2004)

The two main types of infrastructure that are important for any type of digital intervention are:

i) Telecommunication and ii) power

These infrastructures together with buildings, electronic devices and machines make it possible to host a wide range of electronic services such as transmission of voice, data and image. A better infrastructural layer can ensure advance digital services and access to local, regional and global resources in a cost effective manner.

The setting-up and expansion of a high quality infrastructure can be achieved by a dynamic cooperation between the public and private sector. Large investments need to be attracted from the private sector, while the government provides an investment friendly environment to facilitate private sector investment, while keeping the public interests intact. Governments have to decide on major policy changes that can create opportunities for the private sector to invest and improve the infrastructure.

This will be measured through the number of computer systems, networks, telephone lines and any other hardware's and software's used in improving the performance of Sacco's.

2.4.3. Policies

The ICT evolution has taken place with or without a systematic, comprehensive and articulated policy. However, the lack of a coherent policy is likely to contribute to the development (or prolonged existence) of ineffective infrastructure and a waste of resources. If there is, a lack of ICT policy coherence could be to blame. (University of Manchester's Centre for Development Informatics 2010). The most important implication of policy concerns the business environment. Governments should reduce unnecessary costs and regulatory burdens on firms to create a business environment that promotes productive investment. This involves policies that enable firms to undertake organisational changes, that strengthen education and training systems, that encourage good management practices, and that foster innovation, e.g. in new applications. Moreover, policy should foster market conditions that reward the successful adoption of ICT; competition is the key in selecting firms that are able to seize the benefits of ICT and in making them flourish and grow. Policies to foster growth in services are important too, as ICT offers a new potential for growth in the service sector, providing that regulations that stifle change are adjusted or removed. Moreover, competition needs to be strengthened. Competition not only helps lower the costs of ICT products and services, which fosters diffusion – it also strengthens pressures on firms to improve performance and change conservative attitudes. The danger is that ICT policy in many countries is incoherent because it is stuck in the past: failing to address the forthcoming global challenges; focusing only on the early parts of the value chain, not all parts; isolating ICT policy from development, or perhaps just subsuming it, rather than looking ahead to the transformative potential of technology; and focusing only on the content of policy, not on how it is made. Unless these deficiencies can be addressed, ICT may continue to fall short in its development impact.

2.4.4. Awareness

ICT awareness involves knowing about the existence and importance of the ICT tools and their application. Potential ICT users should be enriched with a number of ICT awareness programmes in order to increase the usage of ICT facilities. This can be achieved through promotional programmes which include electronic media resources such as radio, TV and website; print media such as newspapers, magazines, newsletters and notice boards and organization of workshops, seminars, conferences and public lectures.

ICT are playing a key role in the growth of customer relations management (CRM) practices. For example, to communicate with clients, sales forces in the field are supplemented by interactive web sites and call centers. In addition, advanced database technology, world-wide web integration, sales force automation and multi-media-based front office applications are emerging as key elements of CRM. Evidence from surveys of managers and case study literature shows that the most important reasons for investing in ICT are product quality improvements, especially customer service, timeliness, and Convenience. (Yague M.J ,2011).

2.4.5. Literacy

Literacy level has remained a serious problem for most of Sub-Saharan Africa. The United Nations Educational, Scientific and Cultural Organization (UNESCO) showed that about 60% of the people are literate. The illiteracy challenge was worsened by poor education sector and shortage of educational resources. The consequences of high illiteracy and poverty levels in LDCs are poor newspaper circulation and less ownership of TV and radio and the use of the electronic media's.(Musa, Meso & Mbarika, 2005). The ministry of planning and National development (2005) recognized the need to make education a platform for equipping the nation with ICT skills in order to support sustainable economic growth.

2.4.6. Performance

Performance is a contextual concept associated with the phenomenon being studied (Hofer,1983). In the context of organizational financial performance, performance is a measure of the change of the financial state of an

organization, or the financial outcomes that results from management decisions and the execution of those decisions by members of the organization.

Since the perception of these outcomes is contextual, the measures used to represent performance are selected based upon the circumstances of the organization(s) being observed. The measures selected represent the outcomes achieved, either good or bad. Performance Management Practices (PMP) is defined as the use of performance measurement information to effect positive change in organizational culture, systems and processes by helping to set agreed-upon performance goals, allocating and prioritizing resources, informing managers to either confirm or change current policy or programme directions to meet those goals, sharing results of performance in pursuing those goals (Ittner, Larcker, and Randall, 2001). PMP is very beneficial to an organization if nurtured properly. The key benefits include: focusing on results rather than behaviors and activities; it aligns organizational activities and processes to the goals of the organization; produces meaningful measurements; and cultivate a system-wide long term view of the organization. Therefore, PM is that process of motivating employees through setting goals, measuring progress, giving feedback, coaching for improved performance, and rewarding achievements (Langfield-Smith, 2007).

Most management research focuses on the determinants of performance. For instance, Kunkel (1991) proposed that new venture performance was a function of new venture strategy and industry structure (expressed as a formula as $P=f(VS,IS)$). Kunkel tested the relationship between two independent variables and the dependent construct of new venture performance.

The focus of Kunkel's research was on the hypothesized relationship between certain independent variables and certain dependent variables. The independent variables are proposed as determinants of the changes in the dependent variables. The changes in the dependent measures are considered to represent "performance" caused by the variations in the independent measures. The critical point here is that performance as a concept involves measurement of the effects of organizational actions.

There are many studies related to performance, performance management and measurement of performance in literature. Many studies have focused on the services sector firms and examined the relationship between ICT and firm performance (Brynjolfsson and Hitt, 2000). While the evidence from these studies seems to be mixed, Brynjolfsson and Hitt (2005) report an important result. They find the contribution of ICT to output growth is as high in the service sector as in the manufacturing sector.

Organizational performance can be judged by many different constituencies, resulting in many different interpretations of "successful performance". Each of these perspectives of organizational performance can be argued to be unique. Further, each organization has a unique set of circumstances, making performance measurement inherently situational (Cameron & Whetton, 1983).

A number of Canadian studies find strong evidence of a link between the use of ICT technologies and performance of plants. Baldwin, Diverty and Sabourin (2005), Baldwin and Sabourin (2002) and Baldwin and Sabourin (2003) link technology surveys to longitudinal data on the performance of manufacturing plants. They find that plants that use advanced technologies are more likely to experience productivity growth and that the superior productivity growth is then reflected in market share gains. Amongst the advanced technologies examined, communications technology is associated with the best performance. But they also point out that it is not ICT use alone that matters. Plants that combine ICT use with other advanced technologies tend to do better than those using only one or two isolated technologies.

The concept "Performance management system" was first used by Beer and Ruh (1976). Thereafter, Bell created a foundation for development of the system to a further point with his studies in (1978) and (1987). The studies in this field started to increase in number since 1990s. There are many definitions available in the literature on performance, performance management and performance models. In their study named Auditing Productivity in the firms, Baş and Artar (1991) explained performance as; "the quantitative and qualitative explanation of intended goals that is related with an individual, a group or an enterprise engages and performs, in other words it is a quantitative and qualitative explanation of what they achieved and performed related with their tasks". According to Akal (1992), performance is "the concept which determines what was obtained as the result of a purposeful and planned activity in general context."

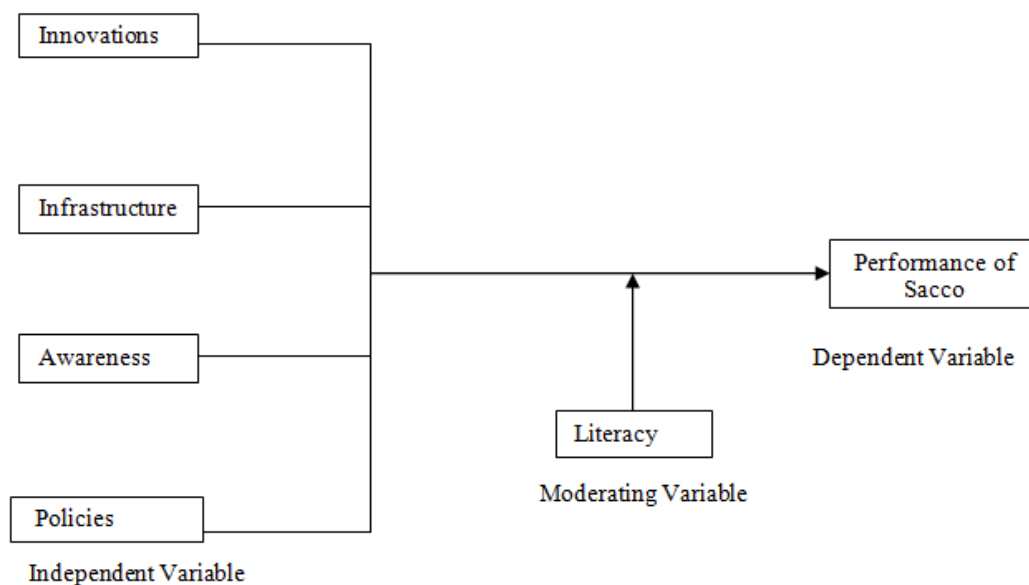
Harrington (1996) defined it as "the series of operations which determine at which rate the organizations can reach to the previously determined objectives". According to Tekeli (2003) the performance measurement is, "the information obtained by the comparison or association of the factors which affect the success of a firm". In more technical terms, the performance measurement is "the process of regular and systematic data collection, analysis and reporting to be used by a firm to follow up the resources it uses, the results it obtained with the produced goods and services". Lebas and Euske (2002) provide a good definition of performance as "doing today what will lead to measured value outcomes tomorrow." BPM then is concerned with measuring this performance relative to some benchmark, be it a competitor's performance or a preset target.

The (WES 1999) provided a rich set of measures on firm performance. We use five such measures: productivity changes, sales growth, profit changes, product innovation and process innovation. The five

measures of firm performance are highly correlated and capture different aspects of the overall success of the firms. Impact of ICT on the organization as a whole has frequently been measured using variables representing market performance, such as market share and market value of the firm, among others (Liang *et al.*, 2010).

The impact on operational performance has been studied mainly using productivity measures and cost reduction (Bharadwaj, 2000; Liang *et al.*, 2010; Das *et al.*, 2011). ICT increases productivity and operational efficiency in specific business processes, not only by reducing costs but also by impacting on intangible assets such as quality improvement in design processes or life-cycle enhancement in inventory management systems (Brynjolfsson *et al.*, 2002; Devaraj and Kohli, 2003; Melville *et al.*, 2004). ICT also enhances coordination of activities by improving information systems and internal and external communication (Brynjolfsson *et al.*, 2002). These technologies enable a more efficient use of information between workers and management and increased interaction among employees.

Figure 1 Conceptual Framework



Source: (Author 2014)

3. METHODOLOGY

3.1. Research Design

The research was done through survey research design and involved a qualitative & quantitative census survey of all 34 licensed Sacco's in Nairobi County. This is because it is an attempt to collect data from members of the population in order to determine the current status of that population with respect to one or more variables in a particular study (Mugenda and Mugenda ,1999).

This type of design is also useful in this study because apart from just describing, survey can be used for explaining and exploring the existing status of two or more variables at a given point in time (Mugenda and Mugenda ,1999). Survey method is the most appropriate because it focuses on a specific population and hence gets quick and immediate information.

3.2. Target Population

The study assessed a census survey of all the licensed savings and credit cooperative societies in Nairobi County. According to the Sacco Society Regulatory Act (2013), there were thirty four (34) licensed cooperative societies as at April 2013. According to Mugenda (1999) a census survey is whereby data is collected from each and every unit belonging to the population whereby population refers to all the items in the field of inquiry. The Societies are categorized according to their regions as follows:

Figure 2: Target Population

COUNTY	District	Population	Census
NAIROBI	Westland's	6	6
	Nairobi west	16	16
	Nairobi North	5	5
	Nairobi East	7	7
	Total	34	34

Fig. 3 Source (SASSRA 2013)

For these Sacco's the CEO, two employees, and two staff in the ICT department were respondent for the questionnaire. The interview schedule was administered to service recipients present at the Sacco to get insight into responses for the questionnaire. The choice of Nairobi was to give a clear insight on the subject of the study since it's the county with the most number of licensed Sacco's in the country.

3.3 Data Collection

The researcher used self administered questionnaires as the instrument to collect data. The questionnaire comprised of open and closed ended questions in order to give the respondents room for airing well thought information adequate to base good judgment. According to Mugenda & Mugenda (1999) Questionnaires are instruments for data collection that are defined to elicit written respondents from the subject in the study. The advantage of using the questionnaire was that the data obtained would be easy to process and analyze statistically.

Both primary and secondary sources of data were used to obtain information for the study. Primary data was obtained through interview guide with open-ended questions for each category of respondents (Sacco's officials and employees). The Questionnaires were used to facilitate views with the target respondent in order to obtain an in-depth and comprehensive data regarding the variables of the research study. Secondary data was obtained from the company records, journals and books of accounts where possible and also from SASSRA records.

3.4 Data Analysis, Presentations and Findings

The researcher examined the collected data to make inferences through a series of operations involving editing to eliminate inconsistencies, classification on the basis of similarity and subsequent tabulation to relate variables. Subsequently, the refined data was analyzed using descriptive statistics involving percentages and mean scores to determine varying degrees of response-concentration regarding the views of the respondents. Descriptive statistics was utilized in describing the sample data in such a way so as to portray the typical respondent and to reveal the general pattern of responses. In addition, a regression analysis model was used to determine relationship between the study's quantifiable variables. Finally, for the purpose of communicative effectiveness to ultimate users, findings were presented using both tabular and graphical representations (histogram, bars and pie charts).

In this study a linear regression model was used to investigate the relationship between performance and its various determinants. The study investigated the causal effect and the strength of the relationships. Performance in this study was measured by productivity changes and income. The determinants considered were infrastructure, innovations, awareness and policies. The model below was used to analyze this relationship: $Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \epsilon$

Whereby Y = Performance as measured by productivity changes / profitability (income)

α = Constant term

β_i = Beta Coefficient

X1= Infrastructure

X2=Technology innovation

X3= Awareness

X4= Policies

ϵ = Error term

Moderating variables

X5= Literacy

4. RESEARCH FINDINGS

4.1 Introduction

Qualitative and quantitative data were collected by use of a questionnaire. The number of respondents who participated in this survey and completely filled the questionnaires totaled to 162. The first part involved the profile of the respondents while the second part presents results on perceived effect of ICT's on the performance of Sacco's in Kenya. All analyses were done using the Statistical Package for Social Scientists (SPSS version

16). For easy management and longevity of the data, it was captured in Ms-Excel. All data were entered and verified after effective coding. Data was then scrutinized in relation to the objective of the survey, otherwise with a potential abundance data; vast numbers of irrelevance summaries would be produced. Table 1 provides the sample composition, provided by the frequency distribution of the sub-groups, as well as the relative percentages of each. Most of the study respondents (41.4%) had college education followed by those of with secondary education (29.6%) while those with post graduate education (9.9%) were the minority. Distribution by age in years showed that, those who were aged 31-40 years were the majority with a prevalence of 41.4% followed by those aged between 41-50 years. On the other hand, distribution by working experience revealed that majority of the respondents had worked for their respective Sacco's for 6-10 years while the minority had worked for 16 years and above.

Table 1 Profile

Category	Frequency	Percent
Highest level of education level		
Secondary	48	29.6
College	67	41.4
University	31	19.1
Post graduate level	16	9.9
Age in years		
18-30	29	17.9
31-40	67	41.4
41-50	49	30.2
51 and over	17	10.5
Working Experience		
Less than 5 years	41	25.3
6-10 years	61	37.6
11-15 years	34	20.9
16 years and above	26	16.2

4.2. Reliability Analysis

Prior to the actual study, the researcher carried out a pilot study to pretest the validity and reliability of data collected using the questionnaire. The pilot study allowed for pre-testing of the research instrument.

Table 2 Reliability Analysis

Coefficients Scale	Cronbach's Alpha	number of Items
Innovations	0.893	8
Infrastructure	0.809	7
Awareness	0.731	5
Policies	0.693	5

The reliability of the questionnaire was evaluated through Cronbach's Alpha which measures the internal consistency. The Alpha measures internal consistency by establishing if certain item measures the same construct. Cronbach's Alpha was established for every objective in order to determine if each scale (objective) would produce consistent results should the research be done later on. The findings of the pilot study shows that all the four scales were reliable as their reliability values exceeded the prescribed threshold of 0.7 (Mugenda and Mugenda, 1999).

4.3 Sacco Performance

To evaluate the Sacco performance respondents were asked to state performance trend of the their business for the last five years in seven different areas including membership number, gross profit, dividends rate, market share, deposits, interest on deposits and productivity changes. Responses were on a five point likert scale with answers ranging from 1- greatly decreased 3- constant to 5- greatly improved. To enhance interpretation of the results, each statement was averaged by treating the responses as scores. An average close to 100% indicated that the respondents perceived the performance indicator to have improved greatly and a value close to 20% indicated the vice versa.

From the results the overall average worked out to 78% indicating that most respondents rated highly most of the performance indicators. The main areas that Saccos were reported to have performed well included increase in deposits-84%, dividends rate-81%, market share-81% and productivity changes-80%.

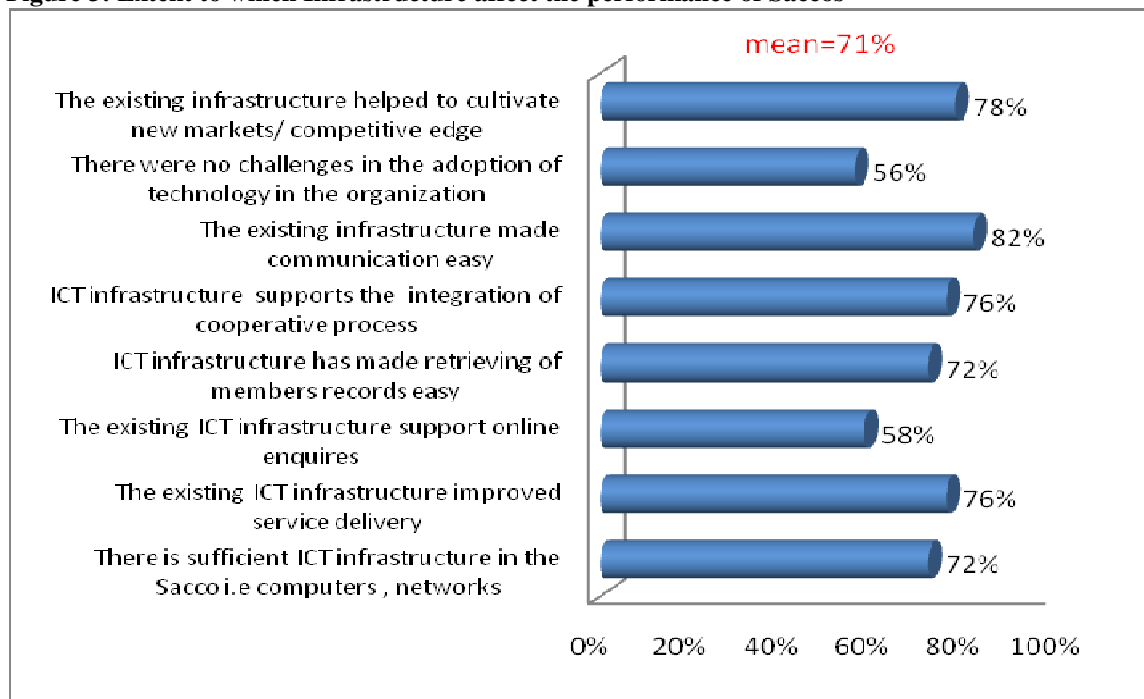
4.3.1 Effect of the Infrastructure on performance of Sacco's

The study also sought to find out the effect of the Infrastructure on performance of Sacco's. Respondents were asked a general question on whether their Sacco had infrastructure of computer systems to support day to day activities of the Sacco while majority (79%) where positive.

Respondents were presented with a list of eight statements on the effect of the Infrastructure on performance of Sacco's and asked to state the extent the factors affected Sacco performance. Responses were on a five point likert scale with answers ranging from 1-not at all through 3-neutral to 5- very large extent. To enhance interpretation of the results, each statement was averaged by treating the responses as scores. An average close 100% indicated that the respondents were perceived the factor to affect to affect Sacco performance to a very large extent and a value close to 20% indicated the opposite.

From the results the overall average worked out to 71% indicating that most respondents were positive with most statements. Respondents were observed to unanimously agree with the statements that "The existing infrastructure helped to cultivate new markets/competitive edge-78%" and "The existing infrastructure made communication easy-82%", According to Francois and Machim (2007) they consider the use of mobile telephone as a determinant of infrastructure development and that communication costs are an important part of trade costs, these studies conclude that improvement of the related infrastructures have a positive effect on bilateral trade. On the other hand respondents refuted with the statements that "There were no challenges in the adoption of technology in the organization-56%" and "The existing ICT infrastructure support online enquires-58%".

Figure 3: Extent to which Infrastructure affect the performance of Saccos



Source (Author , 2014)

4.3.2 Effect of ICT policies on Sacco's performance

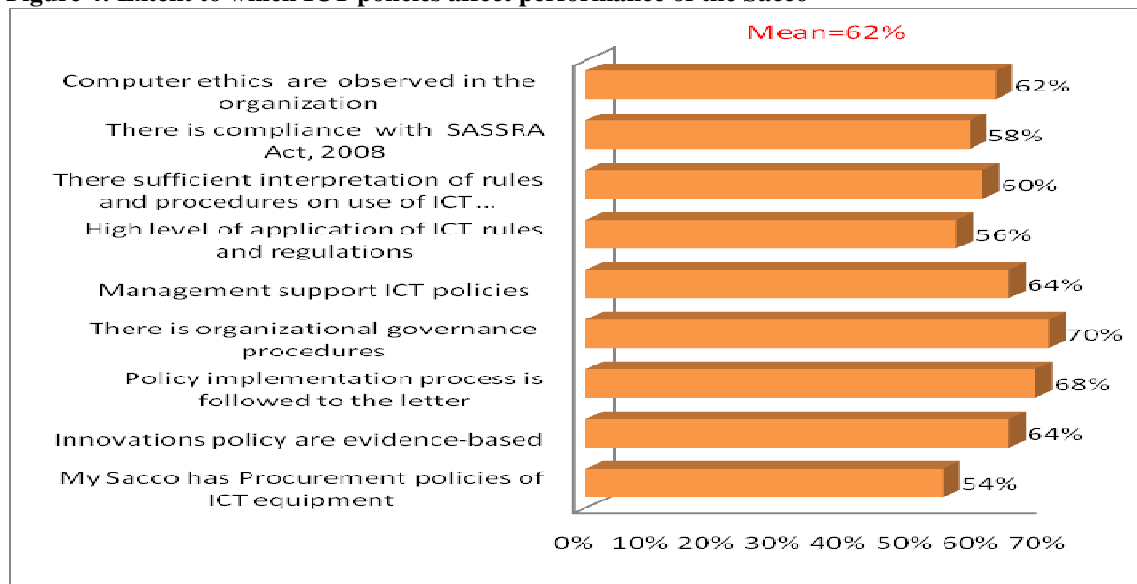
Effect of ICT policies on Sacco's performance was also evaluated. A roll up question was posed to the respondents to assess the extent to which stipulated ICT policy in their organizations affect performance. Most of the respondents (44%) reported that stipulated ICT policy affects performance of Saccos to a very large extent.

To assess extent to which stipulated ICT policy affect performance, respondents were presented with a list of nine statements and asked to state the extent the factors affected Sacco performance. Responses were on a five point likert scale with answers ranging from 1-not at all through 3-neutral to 5- very large extent. To enhance interpretation of the results, each statement was averaged by treating the responses as scores. An average close 100% indicated that the respondents were perceived the factor to affect to affect Sacco performance to a very large extent and a value close to 20% indicated the opposite.

The overall average stood at 62% indicating that most respondents were neutral with most statements. According to (University of Manchester,2010) policies should foster market conditions that reward the successful adoption of ICT; competition is the key in selecting firms that are able to seize the benefits of ICT and in making them flourish and grow. Policies to foster growth in services are important too, as ICT offers a new

potential for growth in the service sector, providing that regulations that stifle change are adjusted or removed. Respondents rated the two statements higher including; “Policy implementation process is followed to the letter - 70%” and “There is organizational governance procedures-68%”. On the other hand respondents disagreed with the statements that “Procurement policies of ICT equipment-54%” and “High level of application of ICT rules and regulations-56%”.

Figure 4: Extent to which ICT policies affect performance of the Sacco



Source (Author , 2014)

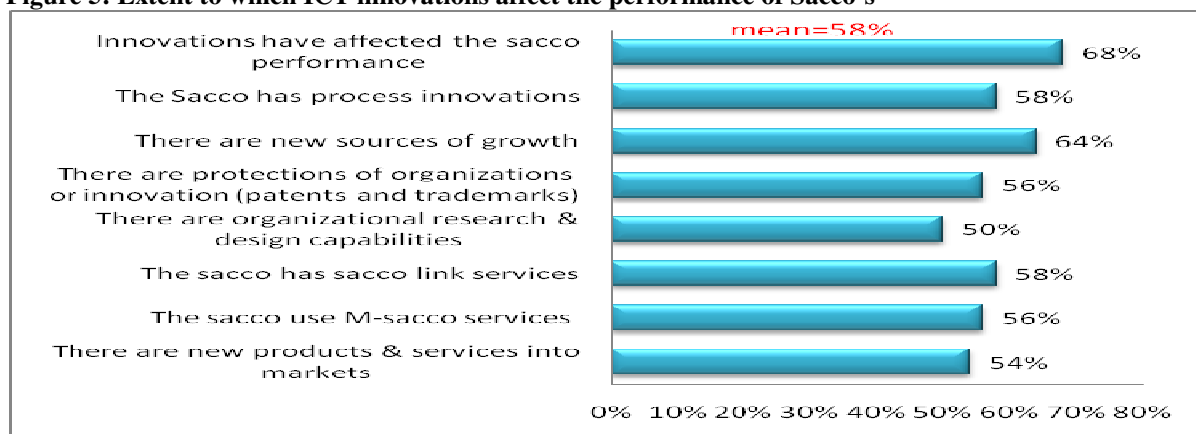
4.3.3 Effect of Innovations to the performance of Sacco’s in Kenya

The study investigated the effect of Innovations to the performance of Sacco’s in Kenya. Respondents were presented with a general question on the extent their organization design new products and services to the members where most of the respondents did not know have an idea (36%).

To assess extent to which innovations affect performance of Sacco’s in Kenya, respondents were presented with a list of eight statements and asked to state the extent the factors affected Sacco performance. Responses were on a five point likert scale with answers ranging from 1-not at all through 3-neutral to 5- very large extent. To enhance interpretation of the results, each statement was averaged by treating the responses as scores. An average close 100% indicated that the respondents were perceived the factor to affect to affect Sacco performance to a very large extent and a value close to 20% indicated the opposite.

The overall average stood at 58% indicating that most respondents were neutral with most statements. However, respondents were observed to agree with the statements that; “Innovations have affected the sacco performance -68%” which is supported by Hine and Kapeleris (2006) that process innovation refers to the adaption of new or significantly improved production methods – methods that may involve changes in equipment or production organization or both. “There are new sources of growth -64%”. Contrary respondents disagreed with the statements that “There are new products & services into markets -54%” and “There are organizational research & design capabilities -50%”. According to OECD (2010), in times of crisis there must be a focus on the contribution of ICT to innovation and growth and performance

Figure 5: Extent to which ICT innovations affect the performance of Sacco's



Source (Author , 2014)

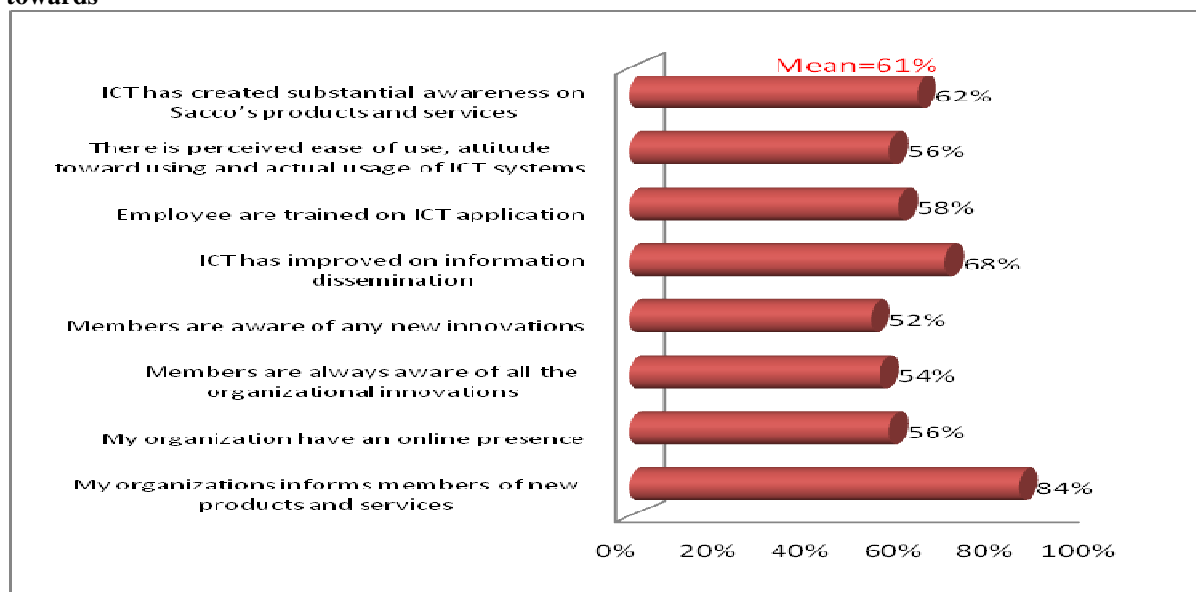
4.3.4 Effect of Level of Awareness on the performance of Sacco's in Kenya

Level of awareness on the performance of Sacco's in Kenya was also evaluated. Respondents were asked to state to what extent their organization used ICT to create awareness to the members and public about their products and services. More than half of the respondents (57%) reported to a great extent (To a very large extent + to a large extent).

To assess extent to which level of awareness affected performance of Sacco's in Kenya, respondents were presented with a list of eight statements and asked to state the extent the factors affected Sacco performance. Responses were on a five point likert scale with answers ranging from 1-not at all through 3-neutral to 5- very large extent. To enhance interpretation of the results, each statement was averaged by treating the responses as scores. An average close 100% indicated that the respondents were perceived the factor to affect Sacco performance to a very large extent and a value close to 20% indicated the opposite.

The overall average stood at 61% indicating that most respondents were neutral with most statements. However, respondents unanimously supported the statements that; "My organizations informs members of new products and services -84%" and "ICT has improved on information dissemination -68%". Contrary respondents disagreed with the statements that "Members are aware of any new innovations -52%" and "Members are always aware of all the organizational innovations-54%".

Figure 6: Extent ICT is used in creating awareness to members towards



Source (Author, 2014)

4.3.5 Effect of Literacy on the level of performance of Sacco's

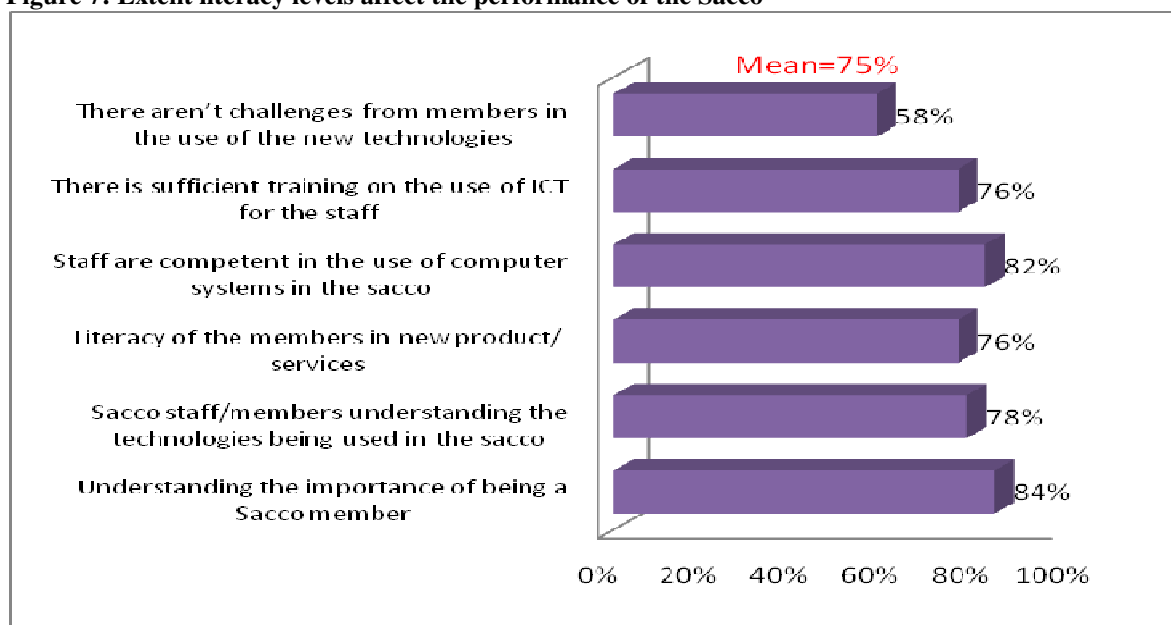
The study also investigated the effect of literacy on the level of performance of Sacco's. The respondents were asked to state the extent the level of literacy impact the performance of Sacco's. Most of the respondents

reported that the level of literacy impact the performance of Sacco's to a great extent.

To assess extent to which literacy level affect the performance of the Saccos, respondents were presented with a list of six statements and asked to state the extent the factors affected Sacco performance. Responses were on a five point likert scale with answers ranging from 1-not at all through 3-neutral to 5- very large extent. To enhance interpretation of the results, each statement was averaged by treating the responses as scores. An average close 100% indicated that the respondents were perceived the factor to affect to affect Sacco performance to a very large extent and a value close to 20% indicated the opposite.

The overall average stood at 75% indicating that most respondents agreed with most statements. Respondents unanimously supported the statements that; "Understanding the importance of being a Sacco member -84%" and "Staff are competent in the use of computer systems in the sacco-82%". On the other hand respondents disagreed with the statements that "There aren't challenges from members in the use of the new technologies -58%". According to (Mbarika , 2005) items such as TV's , Internet and radio should be used to create awareness of products and services.

Figure 7: Extent literacy levels affect the performance of the Sacco



Source (Author, 2014)

4.3.4 Regression Model

Regression analysis was employed to test the four hypothesis of the study including;

H₁: There is no relationship between ICT infrastructure and the performance of Sacco's.

H₂: There is no significant relationship between Innovations and the performance of Sacco's.

H₃: There is no significant relationship between ICT awareness and performance of Sacco's

H₄: There is no significant relationship between ICT policies and the performance of Sacco's

The regression model contained four independent variables (ICT infrastructure, Innovations, ICT awareness and ICT policies) and the dependent variable (Sacco performance). From the model summary, **Error! Reference source not found.** an R² value of .756 indicates that 75.6% of the variation in Sacco performance can be explained by the model.

Table 3: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.869 ^a	.756	.742	.17992

a. Predictors: (Constant), ICT infrastructure, Innovations, ICT awareness, ICT policies

Table 4. displays ANOVA on the coefficient of determination (R^2). An F value of 14.45 (d.f=4, 158 and $P < .05$) shows that the model is suitable at 95% confidence level.

Table 4: ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	8.514	4	31.514	14.45	.004 ^a
	Residual	26.153	158	2.180		
	Total	26.667	162			

a. Predictors: (Constant), ICT infrastructure, Innovations, ICT awareness, ICT policies

b. Dependent Variable: Sacco performance

Table 4 displays the coefficient of the regression model of Sacco performance on ICT infrastructure, Innovations, ICT awareness and ICT policies. From the table all the coefficients of the model except ICT policies were significant at 5% level of significance. This means that all the hypotheses (except the fourth one) were rejected at 95% confidence level. Therefore, Sacco performance can be predicted using the following equation:

$$Y = 2.234 + .422X_1 + .416X_2 + .236X_3 + 0.089X_4$$

Where;

Y is Sacco performance

X_1 is the ICT infrastructure

X_2 is the Innovations

X_3 is the ICT awareness

X_4 is the ICT policies

Table 5: Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients		Sig.
		B	Std. Error	Beta	t	
1	(Constant)	2.234	.235		11.130	.000
	ICT infrastructure	.422	.098	.424	9.265	.000
	Innovations	.416	.084	.421	7.485	.000
	ICT awareness	.236	.039	.268	3.479	.001
	ICT policies	.089	.085	.095	1.148	.084

a. Dependent Variable: Sacco performance

5. SUMMARY AND CONCLUSIONS

The study aimed at evaluating the perceived effects of ICT on the performance of Sacco's in Kenya. Specifically the study assessed; the effect of ICT infrastructure on performance of Sacco's; ICT's innovations in Sacco's performance; contribution of ICT in level of awareness in performance of Sacco's; how ICTs empowers members by use of polices and platforms that promote their services express their views and share good practices.

The above discussions enable a better understanding of the impact of ICT investment on Sacco performance, and also the role of ICT strategic alignment. Sacco's should combine their 'hard' ICT investments (i.e. acquisition of new hardware, software and networks), with appropriate 'soft actions', in order to achieve higher levels of benefits and impact on business performance from them. One of these necessary 'soft actions' is the alignment of ICT investment to business strategy, which results in the selection of the most appropriate ICT investments that support to the highest possible extent the selected business strategy and action plan of the firm, and therefore leads to a higher level of ICT benefits and business impact.

Firms who perceive use of ICT as beneficial, non-complex, compatible and of low risk to use are more likely to adopt ICT in day to day business. This is compatible with previous studies illustrating that the main barriers to ICT adoption are simply the concern that the ICT would not lead to more efficiency, lower costs or more revenues. Consistent with previous research, this study has also revealed that ICT skills and knowledge can crucially increase its adoption.

5.1. Recommendations

This research recommends Sacco's to:

- i. Conduct a Thorough Strategic Plan. This is to illustrate how market forces can compel the Sacco's to

- ii. Align ICT Plans with Business Plans. Conduct reengineering studies and develop strategic ICT plans to align key ICT needs with those of the business.
- iii. Get to train Top Management to Support ICT adoption.
- iv. Change Management. Set realistic user expectations such as the initial productivity tips.

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