FACTORS AFFECTING THE ADOPTION OF INFORMATION AND COMPUTER TECHNOLOGY IN SMALL AND MEDIUM ENTERPRISES IN KENYA: A CASE OF MATATU SACCOS IN THIKA TOWN

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FACTORS AFFECTING THE ADOPTION OF INFORMATION AND COMPUTER TECHNOLOGY IN SMALL AND MEDIUM ENTERPRISES IN KENYA: A CASE OF MATATU SACCOS IN THIKA TOWN

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ABSTRACT

The study aimed at investigating the factors that affect the adoption of Information Communication Technologies (ICTs) by Small-and-Medium-sized Enterprises (SMEs) in the Matatu SACCOs in Thika town. The study was based on the following general objectives: the influence of innovative top management and organizational innovation on the adoption of ICT adoption among Matatu SACCOs. The study was significant since the findings of this study are expected to benefit government policy makers, ICT specialists, business experts and SMEs in transport sector. The study was carried out in Thika Town in Kenya. The study focused on the Matatu SACCOs who had adopted ICT adoption in their transactions. The study used survey study method to collect both qualitative and quantitative data. Self-administered questionnaires were used in collecting data. Cronbach's alpha was used to test the reliability of the measures of the questionnaire. Quantitative data was edited to eliminate inconsistencies, summarized and coded for easy classification. Descriptive statistics were used in describing the sample data with an aid of Statistical Package for Social Sciences (SPSS). A response rate of 78% was obtained from the study participants with 27 % of the respondents being managers, 46 % drivers and 51% were conductors. The study findings revealed that 77 % of the respondents had secondary school certificate. At the same time, 47 % of the Saccos had an average of 11-49 workers with most of the Saccos (53 %) having above 50 workers. The study findings revealed that 2NK, Chania, and Manchester saccos were evenly distributed with a population of between 21-22% of the Matatus in Thika. 4NTE and Thika road sacco had a population of between 17 and 19% of the population. Majority of the respondents agreed with the assertion that knowledge level affects ICT adoption. Reliability test was conducted and all factors had cronbach alphas of 0.7 and therefore measures were internally consistent. The questionnaire was validated using discriminant validity tests. The measures of convergent validity met threshold of more than 0.5 AVE. The first objective of this study was to establish the effect of innovative top management support on the adoption of ICT adoption among the Matatu SACCOs in Thika town. Innovative top management had the leading correlation of 0.876 which is a strong positive correlation. This implied that the Sacco growth solely depends on the management skills and innovation of its top managers. The second objective of this study was to determine the effect of organizational innovation on the adoption of ICT among the Matatu SACCOs. Organization innovation had the second best correlation, a moderate positive correlation of r=0.549. This implied that the Sacco's ability to integrate ICT in its operations is important in the overall success, survival and growth. The third objective sought to establish the effect of innovative IT expertise in the adoption of ICT adoption among Matatu SACCOs. This implied that integration of ICT in the Sacco operations will still give it an edge over its competitors. The study concluded that, innovative top management had the leading correlation which was a strong positive correlation. The strong relationship indicated the important role the management of the Matatu Saccos plays in decision making in terms of whether the organization is to adopt ICT and grow and prosper or the status quo will remain. Organization innovation had the second best correlation which was a moderate positive correlation to adoption of ICT. It was concluded that the ability or inability of an organization to adopt ICT is an indicator of prosperity or growth problems. The overall success the adoption of ICT by Matatu Saccos will solely depend on the ability of top management to embrace innovation, the organization to be holistic to technology, the ability to positively compete and the effective utilization of innovation and technology expertise to drive the organization to growth. The study recommended that the Government should make ICT more affordable to small enterprises by lowering the tax and regulating their prices so as to curtail dealers inflating prices. The Government through the relevant bodies should initiate and support training programmes to develop the capacity of small and medium entrepreneurs in Matatu Saccos on ICT tools.

Key Words: *Information, Computer Technology, Small and Medium Enterprises*

INTRODUCTION

The significant contribution made by the small and medium-sized enterprise (SME) community worldwide to employment, regional development and innovation is well established. Unfortunately, SMEs are also subject to high rates of business failure and such rates are likely to exacerbate due to the current global economic hardships. Innovative strategies are clearly needed within the SME sector to improve survival and growth and effective deployment of information and communication technologies (ICT) is likely to be a critical part of such strategies (Jones, 2011).

As the major source of employment opportunities, development and commercialisation of innovation, and improvement of marketing competiveness in a globalised economy, small businesses (SMEs) are regarded as the engine of economic development and growth, in particular in developing countries where poverty, uncompetitiveness of economy, and unemployment are still paralysing the society (Cardona et al., 2007; Radas & Bozic, 2009). For example, SMEs are the most important source of job creation in the US economy as it is reported that nearly 98 percent of all businesses are classified as SMEs (Neumark, 2011).

United Nations Economic and Social Council (UNESCO), **(**2009) noted that Road transport is the most dominant mode of motorized transport in Africa, accounting for 80 per cent of the goods traffic and 90 per cent of the passenger traffic on the continent. African countries together had about 2.06 million km of Roads in 2001, resulting in a Road density of 6.84 km per 100sq.km. Whereas the average Road-to-population ratio for the whole continent was 26 km per 10,000 inhabitants, there was a large sub-regional variation. Central Africa and Southern Africa had the highest Road distribution, with 49.5 km and 56.3 km, respectively, for every 10,000 population. UNESCO **(**2009) further observed that Africa has the highest transport costs in the world. Transport services are unaffordable to many African citizens as transport costs are high compared to the average incomes of the citizens. Travel costs in African cities have a share of 21.7 per cent of GDP. The already high transport costs have been exacerbated in the last few years by the energy crisis associated with high and volatile oil prices.

The government of Kenya has made tremendous efforts and invested billions of Kenya shillings in improving the ICT sector of the economy. Some of these investments include the laying of the national backbone fiber optic cable throughout the country to promote Internet adoption and use by businesses and citizens, giving grants and promoting investments and innovations in the ICT sector. The government has established e-government by automating and building infrastructure within government buildings, creating websites and e-mails for various government ministries and parastatals, automating its services and procurement. The government has come up with a national strategy aimed at making the country a middle-income economy by the year 2030, with growth in the ICT sector as one of the key pillars (Society for International Development, 2010).

Matatus are the main public transport in Kenya, it is estimated that it controls 80 per cent of the public transport. The number of “Matatus” is estimated at eighty thousand; twenty and sixty thousand in Nairobi, and upcountry, respectively. Seventy percent of the “Matatus”, which are commonly referred to as “Nissans” and are valued at ksh.50 billion/USD 625million, are fourteen-seat “Matatus”. The Matatu sector constitutes 80 per cent of the public transport system in the country and are estimated to have an annual

turnover of Sh73 billion. The sector contributes Sh4 billion to insurance companies and Sh1 billion in taxes every year (Republic of Kenya, Economic Survey 2011) According to the Ministry of Cooperative Development and Marketing, it is estimated that there are around 25,000 Matatus operating in the country. In some areas like central and Eastern provinces, the 14-seater has long kicked out the buses from the transport business (Ayodo, 2012).

Statement of the problem

Information and Communication Technologies (ICTs) have become an integral part of today's economy. Small and Medium-sized Enterprises (SMEs) have been increasingly enjoying the benefits of ICT adoption. SMEs need information about sources of their commodities, better markets, effective means of reaching their customers and better management of their transactions. This can effectively be done using ICTs. The essential to any business decision is relevant information which an individual uses to make better business decisions. Lack of adoption and usage of such technologies can make SMEs less competitive and lose out on the potential profit margins. Chacko and Harris (2011) noted that the use of ICT adoption techniques has emerged as an efficient gateway for SMEs to take greater advantage of opportunities in global markets.

In Kenya, the government has made a number of intentions at streamlining the Matatu sector as a smooth mode of transport in Kenya. The Legal Notices No. 161 of 2003, No. 83 of 2004 and No. 65 of 2005 was to regulate the public transport sector as part of the Integrated National Transport Policy (INTP) and National Road Safety Action Plan (NRSAP), and to restore order, and safeguard private investment in the public transport sector. This Legal notice has further been strengthened with a new notice which took charge in December 2012 aiming at stiffer penalties for the offences.

Despite these efforts, a major drawback in the growth and performance of the Matatu SACCOS is the lack of the basic skills in the business management and entrepreneurship. Matatu SACCOs experiences the common causes of small business collapse such as lack of capital, experience, poor market research, administrative incompetence, overestimation of market demand and uneven cash flows (Bennet, 2006). Fear of financial loss among Matatu operators is a key factor that has driven them to establish and form Matatu SACCOs, merely to comply with Government requirement although many of them do not understand nor agree with the policy requirements (Ayodo, 2012).

Wanjau, Macharia and Ayodo (2012) have focused on adoption of electronic commerce among Tour and Travel Firms in Nairobi. Sutanonpaiboon and Pearson (2006) have focused on adoption barriers in the transport industry such as financial constraints, lack of IT knowledge, the impact of perceived compatibility and the role of owner/mangers. There are however few studies focusing on business strategies like adoption of ICT in the Matatu SACCOs. They include Kimani, Ndugu , Kibua, Thomas, and Masinde, Muyundo (2004), Mutongi, Kenda, (2009), and Lee-Smith, Diana, T. (2003). This research will attempt to investigate the factors that are affecting the adoption of ICT adoption among Matatu SACCOs in Thika Town.

Objective of the study

The general objective of the study was to investigate the factors affecting the adoption of information and computer technology in small and medium enterprises in Kenya, this was supported by the specific objectives which were

To establish the effect of innovative top management support and organizational innovation on the adoption of ICT among the Matatu SACCOs in Thika town.

Research questions

The research questions for this study were:

1. What is the effect of innovative top management on the adoption of ICT adoption among Matatu SACCOs in Thika town?
2. What is the effect of organizational innovation on the adoption of ICT adoption among Matatu SACCOs in Thika town?

Scope of the study

The study was carried out in Thika Town in Kenya. Thika town is largely a cosmopolitan urban area, an industrial hub of central Kenya and with the largest fleet of registered Matatu SACCOs in central Kenya. The study focused on the Matatu SACCOs who had adopted ICT adoption in various spheres of their transactions. In the Matatu SACCOs, 2NK, 4NTE, Chania travellers and Neno were among few 14-seat Matatu SACCOs which were financially strong and with strong presence in Thika town. Chania travellers, for instance, had been posting good performance over the last three years, as indicated by the dividend payout to the members of well over 30 per cent annually. The study concentrated on the effect of the top management support and organizational competence, and their effect on adoption of ICT adoption among Matatu SACCOs in Thika town

THEORETICAL FRAMEWORK

a) Innovations diffusion theory (IDT)

Innovations Diffusion Theory (IDT) has been used since the 1950s to describe the innovation-decision process. There are five functions or stages of the model (Rogers 1995). 1) Knowledge occurs when an individual is exposed to an innovation's existence and gains some understanding of how it functions. 2) Persuasion occurs when an individual forms a favourable or unfavourable attitude toward the innovation. 3) Decision occurs when an individual becomes involved in activities that lead to a decision to adopt or reject the innovation. 4) Implementation occurs when an individual puts an innovation into use. 5) Confirmation occurs when an individual seeks reinforcement for an innovation-decision already made, or reverses a previous decision to adopt or reject the innovation if exposed to conflicting messages about the innovation. Innovation diffusion is a multidisciplinary field with contributions from sociologists, communication researchers, organizational researchers, IT researchers and many others (Kim & Galliers, 2004). The study of innovation diffusion is concerned with three fundamental research questions: What determines the pattern, and extent of diffusion of an innovation? (Fichman, 2000). What determines the likelihood of an organization to adopt and absorb innovations? (Fichman, 2000). What determines the likelihood of an organization to adopt and absorb a particular innovation? (Fichman, 2000)

Rogers (1995) classical model of diffusion greatly shaped the basic concepts, terminology, and scope of the field of innovation diffusion (Fichman, 2000). Diffusion is the process by which an innovation is adopted by members of a certain community. The most frequently used work dealing with diffusion is diffusion of innovation (Rodgers, 1995). This theory is not a single theory but a Meta theory with several perspectives that relate to the concept of diffusion. According to this theory, four factors influence the adoption of innovation by members of an organization. Firstly, the innovation itself, secondly, the communication channel used to spread information about the innovation, thirdly, time

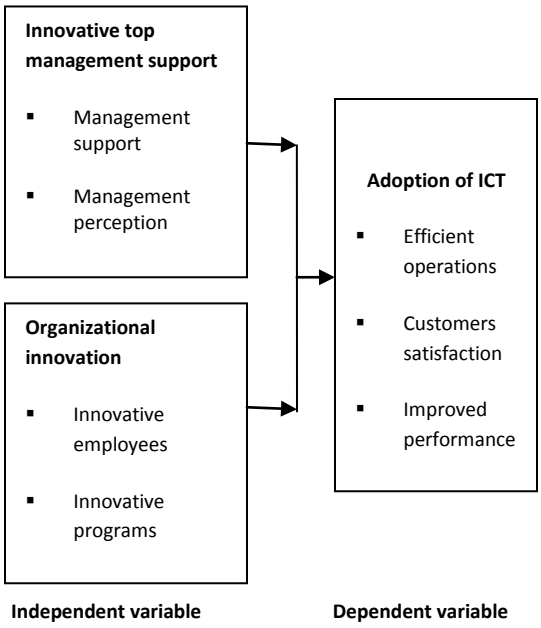
and fourthly nature of the group to which it is introduced (Rodgers, 1995). Diffusion of innovation can be dealt with according to the four major theories (Rodgers, 1995). These are the innovation decision process theory, the individual innovativeness theory, the rate of adoption theory and the theory of perceived attributes. This study will use the individual innovativeness theory and the theory of perceived attributes because they help understand the relationship between the innovator characteristics and the adopters' categories.

b) Individual innovativeness theory

The individual innovativeness theory is based on who adopts the innovation and when. According to Rodgers (1995), there are five categories of adopter. The first category is called the innovators. These are the risk takers and pioneers who lead the way. They are able to adopt despite a high degree of uncertainty about the innovation at the time of adoption and are willing to accept an occasional setback when a new idea proves unsuccessful. The second category is known as the early adopters. They climb aboard the train early and help spread the word about the innovation to others. The third category is the early majority. They are persuaded to adopt by the early innovators and early adopters, and may deliberate for some time before completely adopting the new idea. Their innovation to decision period is relatively longer than that of the innovators and early adopters. The fourth group is called the late majority. They approach innovations cautiously and wait to make sure that the adoption is in their best interests. As a result, they do not adopt until most others have done so. The fifth group is called the Laggards. These are individuals who are highly sceptical and resist adopting until absolutely necessary.

Conceptual framework

Figure 1 Conceptual framework



a) Innovative top management support

In a study by Virginia, Maria and Ana (2007), on drivers, benefits and challenges of ICT adoption by Small and Medium Sized Enterprises (SMEs), the findings revealed that the perceptions of top managers as to the strategic value of ICT adoption related primarily to improving managerial decision making, thereby leaving out ICTs which are viewed to have no direct impact this score of improving decision making. E-commerce can potentially influence the organization's competitive position as well as its business relationships, therefore it is important that top management need to get involved in order to gain a good understanding of the issues surrounding ecommerce and mobilize organizational stakeholders (Epstein, 2004).

A major drawback in the growth and performance of the Matatu SACCOS is the lack of the basic skills in the business management and entrepreneurship. Surveys of small business failure maintain that entrepreneurs often have good ideas and are competent but 'they do not

have clue on how to run a business underlying appreciation of business fundamentals (Barron, 2000). Cant et al (1999) points out that the identification of business problems and development of the appropriate training programs to address these problems which will assist in equipping small and medium enterprise owners with the necessary managerial skills to survive in today's competitive world.

Ligthelm et al (2002) observed that the deficiencies in the internal environment are the major cause of failures in small and medium enterprises and they revolve around among others management skills. This problem comes from some specific management issues such as lack of business management training and skills, inability to act as an entrepreneur and limited family business culture. They finally point out that management behavior and actions that are lacking; inability to set strategic goals, plan forward, reluctance to seek advice, lack of management commitment and unwillingness to adapt change.

b) Organizational innovation

Organizational innovation refers to the availability of innovative employees with adequate experience and exposure to information and communication technology and other skills (such as business strategy) that are needed to adequately staff ecommerce projects (Molla & Licker, 2005). Chwelos et al (2001) stated that the level of management understanding of and support for using IT to achieve organizational objectives may influence the adoption of IT innovation. Thus, an understanding of ecommerce technologies and business models can facilitate the adoption of ecommerce.

Macharia and Nyakwende (2009) conducted a study on the factors affecting the adoption and diffusion of internet in higher educational institutions in Kenya, whose results show resistance to end-user systems by users such as students is a widespread problem. This phenomenon has created the need to better predict, explain and increase user acceptance of technology in higher education. The study further revealed that since the use of the Internet in higher education is still in its early stages especially in developing countries like Kenya, many issues regarding its adoption, diffusion, infusion and use have not been fully addressed. This is not any different even in SMEs as the end users are important in the adoption and usage of any innovation. SMEs do not operate in isolation; they need to meet the needs of their clients. Baldauf and Stair (2009) observed that the focus of marketing in many organizations is shifting from television and print media to the internet, web, cell phone networks, electronic games and even software. Using these means to advertise will make buyers aware of the products, SMEs carry out market research in order to find what customers need and enable them to access product information through business websites. Baldauf and Stair (2009) further observed that, improved efficiency and closer customer relationship is also another factor that fosters the adoption of ICTs by SMEs.

Customers expect to have a good relationship with the business they get services from, it is therefore important that people engaging in Matatu businesses utilize all the possible techniques to improve their relationship with customers and efficiency of the organization. Syed and Noor (2008) further observed that lack of awareness among owners/managers of what ICTs can do to SMEs has been a barrier together with lack of training on how to use ICTs in running SMEs. A workforce skilled in deployment and use of ICTs by SMEs is crucial to the establishment and

maintenance of viable ICT adoption. Some culture has also inhibited the adoption and use of ICTs by SMEs due to different perceptions towards ICTs. Some look at ICTs as tools for the elite and rich while others look at them as instruments of moral degradation especially the internet.

Alessandro, Sara and Riccardo, (2011), carried out a study on "ICT for logistics and freight transportation: a literature review and research agenda", which revealed that there is a relationship between company features and ICT adoption, they point out company size as a crucial variable to assess ICT adoption (i.e. the bigger the company, the higher the implementation of ICTs). The study revealed that the larger logistics companies are progressively experiencing a higher level of ICT adoption, whereas many of the smaller haulage operators (i.e. smaller operators that run fewer than 11 vehicles) stick to more traditional communication and process systems. The study also revealed that main driver seems to be related to the type of service offered. Indeed, small fleets as well as buses, household movers, small less than truck load carriers, and companies with long average loaded movements seem to be less likely to use satellite or radio-based communication.

c) ICT adoption

Information and Communication Technologies are technologies used to generate process, store and disseminate information. Dzidonu (2010) defines Information and Communications Technologies (ICTs) as a term that cuts across a variety of technologies including computer, microelectronics and related technologies such as microchip and microprocessor-based technologies, multimedia and other information processing technologies and systems; telecommunications technologies and infrastructure (fixed line, wireless, satellite based and mobile infrastructure); and communication network technologies and infrastructure including local and wide area communications and computer networks for voice, data and video.

ICT adoption is the provision of a platform in which businesses can be able to communicate and share resources with one another (B2B), with their customers (B2C), and other stakeholders and establish relationships that will be beneficial to the business. Small and medium entrepreneurs can adopt the Internet to gather timely and relevant information that would be beneficial and useful to their business (Botelho & Alves, 2007; Alam & Noor, 2009). Benefits businesses can gain as a result of adopting Internet include better marketing of the business products and services, ease of use better efficiency as opposed to paper technology, establish e-commerce and e-business, better supply and customer management, increase in sales, reduction of distance barrier, achieve global competiveness, and many others (Passerini, et al, 2012; Ifinedo, 2009; Botelho & Alves, 2007).

E-commerce (e-commerce) is the buying and selling of goods/services or information electronically over the Internet or other computer networks. With Internet and e-commerce, businesses can exchange information and resources with one another (B2B) or with their customers (B2C) and considerably reduce costs on their business processes. E-commerce supports online business transactions, business relationship management, business resource management and electronic payment methods. A business process is logical task performed in an organization with an aim of producing specific business results. An example of a business processes is marketing where a business aims in increasing its market share (Acheampong & Gyawu, 2011).

Internet usage can be referred to how one uses the Internet. For example SMEs can use the Internet for B2B, B2C, e-commerce e-business or gain global competitiveness. E-business or e-biz is the use of Internet and/or computer networks to support all business process of an organization. E-biz replaces paper technology plus the benefits include reduction in time and costs of business processes (Amit & Zott, 2001). E-business can also be defined as the transformation of key business process through the use of Internet technologies (Shi, Porter, Otterson & Barclay, 2004).

Use of Internet by businesses can result in efficient data storage, management, and retrieval. This is because businesses can reduce the time taken in storing and retrieving data by use of indexes, which sort data in order of entry and arrange data in a logical manner. Moreover, through Internet usage, SMEs can remotely store data and access services anywhere in the world through cloud computing. Cloud computing is whereby clients/SMEs entrust their data to dedicated computer service provider over the Internet.

Empirical review

Alessandro, Sara and Riccardo, (2011) studied on the effect of lack of knowledge on pay-back times or unclear return on investment as barriers to the adoption and use of ICTs. The variables were long implementation periods and the perception of risk of rapid obsolescence of technologies. Levy, Powell and Yetton (2002) studied adoption of SMEs in South Africa. The variables were lack of access to information, lack of financing, technical support and expertise, low levels of education and business skills amongst entrepreneurs, limited research on SME sector, poor regulatory framework, lack of a comprehensive entrepreneurial strategy, lack of visibility of small businesses, lack of access to technology, vulnerability to cash flow disruptions, unfavourable tax regime(e.g. Value Added Tax (VAT), skills levy), inability of government to communicate what incentives are available for emerging entrepreneurs and where to go for assistance.

Cruz, Barata and Ferreira (2012), carried out a study on performance in urban public transport systems: a critical analysis of the Portuguese case. The variables studied were the the unavailability of ICT competencies within the firm, and unavailability and cost of appropriate interoperable small-firm systems, network infrastructure and Internet-related support services. Lack of reliable trust and redress systems and cross-country legal and regulatory differences also impede cross-border transactions.

Critique of literature relevant to the study

It is revealed that in many studies that less attention with SME e-commerce research has been paid to developing countries with different economic, political, and cultural circumstances. SME studies of electronic commerce issues in developed countries (UNCTAD, 2006) indicate that issues faced by SMEs in developed countries can be totally different from those experienced by SMEs in developing countries. Some of the variables studied are the lack of telecommunications infrastructure, lack of skills among consumers needed in order to use the Internet, lack of timely and reliable systems for the delivery of physical goods, low bank account and credit card penetration, low income, and low computer and Internet penetration.

Forrester (2008) reported that SMEs are significant players in business-to-business electronic commerce, which constitutes more than 80 percent of all electronic commerce activities. SMEs that can demonstrate their

capabilities to use electronic commerce will have a competitive advantage in the electronic commerce market place (Grandon, 2004). Most research studies undertaken according to UNCTAD (2004) and WTO (2001) suggest that government plays an important role in facilitating the use of electronic commerce for the transport industry and in increasing their ability to reap the benefits. Governments in partnership with the private sector should establish a more comprehensive and consistent policy approach to the transport industry and electronic commerce, and apply evaluation mechanisms to assess what works and does not work (Wresch, 2003). The studies done by Seyal and Rahman (2003) and Rashid and Al-Qirim (2001) established that the success of the ICT adoption step in transport sector rests on the following considerations: the role of managers in the adoption process in enterprises; the more positive the perception of managers towards new technologies, the industrial environment ; sources of information, infrastructure and pressure from suppliers and buyers can accelerate the adoption process, and internal resources; financial and technical resources are the principal facilitators during the implementation.

Research gaps

Wanjau, Macharia & Ayodo (2012) studied the influence of leadership style, resources, infrastructure, competition and positioning on the adoption of electronic commerce among tour and travel firms in Nairobi. The variables studied were leadership style, resources, infrastructure, competition and positioning on the adoption of electronic commerce. Mokaya & Njuguna (2012) studied factors affecting the adoption and use of ICT by (SEs) in Thika town. The variables studied were the effect of financial capacity, the influence of cost and the effect of the infrastructure on ICT adoption. Kariuki (2012) studied the adoption of ICT by SMEs in Nakuru town. The variables studied were levels of ICT infrastructure, organization innovation and low Internet speeds/ signal levels. Wole and Busola (2011) studied the factors influencing ICT adoption and use by transport SMEs in Nigerian and identified awareness of ICTs, perceived benefit of the technology, leadership innovation, innovation of organization, competition, nature of organization's activities and pressure from suppliers as the main factor promoting the adoption of ICTs in SMEs. Mpofu, Watkins-Mathys and Milne (2012) carried out a research on ICT Adoption and Development of ICT adoption among transport SMEs in South Africa and the results suggested that owner/ manager ICT knowledge and skills, organization attitude to innovation and workers ICT experience played a significant role in ICT adoption. Kimani, Masinde & Muyundo (2010) studied on ICT adoption by Matatus in Kenya. The variables studied were managerial innovation, level of ICT competition and organization innovation. Few studies have been undertaken on the adoption of ICT in the Matatu sector in Kenya which in spite of the sector being the main public transport in Kenya, with the control of 80 per cent of the public transport. This study filled this gap by looking at dependent variable being top management support and organizational competent, and their effect on the independent variable, ICT adoption in the Matatu SACCOs.

METHODOLOGY

Research design

The study used survey research design as it was helpful in indicating trends in attitudes and behaviors and enable generalization of the findings of the research study to be done (Kuter & Yilmaz, 2001). This design was considered appropriate for this study because it saves time, expenses and the amount of quality information yielded is valid, while interviewer bias is reduced

because participants complete identically worded self-reported measures (Adèr, Mellenbergh & Hand, 2008).

Target Population

The population for this study consisted of Matatu Saccos in Thika town where the target population of this study was the Matatu SMEs in Kenya.

Sampling frame

The sample frame consisted of a list 12 registered Matatu Saccos in Thika town. (Ministry of Industrialization and Enterprise Development, 2014)

Sample and sampling technique

Stratified sampling was used to select ten (10) Matatu Sacco that were active in making regulatory and compliance procedures with the government. Stratified sampling was used to select also used to select 2 managers, 4 drivers and 4 conductors from each Sacco. Matatu SACCOs operating at the Thika bus termini. Furthermore, this study used qualitative research while looking for depth and detail data, Teddlie and Tashakkori (2009) point out that the number of participants for this type of research is 6 to 10 but can be larger. The sample size was therefore consisting of 100 respondents from the selected Matatu SACCOs.

Table 1: Sample of Sacco employees

Sacco employees	Number	Sample	Sample size
Managers	2	2×10	20
Drivers	4	4×10	40
Conductors	4	4×10	40
Total	**10**		**100**

Data collection instruments

One set of questionnaire; (managers and a driver's and conductor's questionnaire) was used. It incorporated both open-ended and closed-ended questions items to gather the data. The self-administered questionnaires have the advantage of being flexible because they contain both open and closed-ended questions.

The open and closed questions helped in gathering in-depth information so that the study got a complete and detailed understanding of the issue under research (Kombo & Tromp, 2006). Each question in the questionnaire was developed to address a specific objective or research question of the study. This research instrument was efficient data collection mechanism to ensure relevancy and consistency of information gathered as the responses were objective, standardized and comparabled (Sekaran & Bougie, 2010). The data was collected by the researcher. Data was collected on the two variables to be specific. Data on individual characteristics included age of the respondent, their levels of education, marital status, gender and their occupations.

Data collection procedure

Primary data was collected through a self-administered questionnaire. The respondents were given a time frame within which they were expected to respond to the questionnaires after which the questionnaires were collected by the researcher on the same day. This was to ensure that respondents did not discuss and modify their responses. The researcher obtained informed consent from any subjects used in the study and ensured that all subjects participated voluntarily.

Data processing and analysis

Data analysis is a process of inspecting, cleaning, transforming, and modelling data with the goal of highlighting useful information suggesting conclusions, and supporting decision making. After the data was collected various methods of data analysis were used. For quantitative data, descriptive data analysis techniques was employed through the use of arithmetic mean, standard deviation, percentages and frequencies used to analyze responses to the questionnaires. Content analysis was used for qualitative data analysis using packages such as SPSS, spreadsheets e.g. excel and use of statistical diagrams such as pie charts, bar charts, graphs etc. Data will be presented using pie charts, bar charts and frequency distribution tables.

FINDING AND DISCUSSION

Response Rate

Questionnaires were used as tools for the data collection. The sample size was 100. The researcher distributed 100 questionnaires to the respondents. Response rate was 78 questionnaires returned and were found to be useful for data analysis. The questionnaires return rate was 78%. According to Nachmias and Nachmias (2000), 70% return rate is adequate.

Reliability and validity test

The reliability and validity tests of the research instrument were carried out to determine the consistency of the measures of the research instrument as explained beneath.

Table 1 summary of reliability test of study variables

Constructs	Composite Reliability
Adoption of ICT	0.710
Top management	0.865
Organization innovation	0.766

The study found that overall cronbach's alpha was; top management (0.865), organization innovation (0.766) and adoption of ICT was 0.710 as indicated in table 2. Sushil & Verma (2010) has indicated 0.7 to be an acceptable reliability coefficient. Thus there was an internal consistence of the variables.

Demographic information of respondents

Gender of respondents

The study asked the respondent to indicate their gender. The study findings revealed that 27 % of the respondents were managers, 46 % drivers and 51% were conductors. This means that the Matatu Sacco's in Thika have conductors as the majority employees**.**

Academic qualification of respondents

The research asked respondents to indicate the highest education attained. The study findings revealed that 77 % of the respondents had secondary school certificate. This implies that majority of matatu operators have the literacy to use ICT in their operations.

Approximate size of the sacco

The study asked respondents to indicate the approximate size of the Saccos. The findings are that, 47 % of the Saccos had an average of 11-49 workers with most of the Saccos (53 %) had above 50 workers.

Name of the Sacco

The study asked respondents to indicate the name of the Saccos. The study findings revealed that Mataara, Chania, and Manchester Sacco's were evenly distributed with a population of between 21-22% of the Matatus in Thika. Kilimambogo and Thika Road Sacco's had a population of between 17 and 19% of the population.

Information on ICT existence in the Sacco

Respondents were requested to indicate the presence of ICTs tools in the Sacco's office the findings were that majority (90%) indicated that they had a phone as an ICT tools in their offices. A few (9%) indicated that they had a computer with only 1% indicating they had internet. The findings indicated that only a few respondents are using internet.

Presence of Sacco's website

Respondent were asked to comment on the availability and presence of Sacco's website. Majority of the respondents agreed with the assertion that knowledge level affects ICT adoption and use (Table 4.7). Only 4% of the respondent disagreed. Further, 46% of respondents do not see the importance of ICT in their business. Approximately 50% of the respondents also do not have prior knowledge on ICT opportunities. However, majority of the respondents agreed with the assertion that they do not understand the importance of ICT. They do not see ICT as necessary in their business.

Correlation of study variables

This section outlines the correlation of the independent and dependent variables as explained in table 4.8.

1.1.1 Correlation analysis on the determinants of growth in enterprises

Table 3 correlation matrix of variables

		Adoption	Innovation IT expertise	Organization innovation
Adoption	Pearson ıtion	1	.645**	.553**
	Sig. (2-tailed)		.017	.549
	N	78	78	78
Top_management	Pearson	-.444**	.027	-.152
	Correlation			
	Sig. (2-tailed)	.000	.826	.219
	N	78	78	78
Organization_innovation	N	78	78	78
	Pearson	.553**	.267*	1
	Correlation			
	Sig. (2-tailed)	.000	.029	
	N	78	78	78

The raw inter-correlation among the variables is presented in table 3. Correlations among variables is used to explore the relationship among group of variables (Pallant, 2010), in turn helping in testing multicollineartity. Based on the table, it was found that all the variables namely; top management, and organization innovation were positively significant correlated to adoption of ICT. Top management had the leading correlation of 0.876 which is a strong positive correlation. This implies that the Sacco growth solely depends on the management skills and innovation of its top managers. Organization innovation had the second best correlation, a moderate positive correlation of r=0.549. This implies that the Sacco's ability to integrate ICT in its operations is important in the overall success, survival and growth. This implies that the ability for a Matatu Sacco to access ICT expertise in its operations is vital as it will be able to gain efficiency and effectiveness in terms of reaching potential

customers and better management of its operations.

Descriptive and qualitative analysis of the study variables

a) ICT Adoption

Which reason can you attribute to the adoption of ICTs in your SACCO

The respondents were probed on their attribute to the Sacco adoption of ICT. The findings are as shown in table 4.

Table 4 reasons for adoption of ICT by Sacco

	Frequency	Percent
To provide faster and better services	55	73
To stay ahead in competition	14	16
Because others did	9	11
Total	78	100

Majority of the respondents 55% agreed with the assertion that ICT adoption in the Sacco provided faster and better service. Approximately 16% of the respondents also supported staying ahead of competition as the reason for adopting ICT. Further, 11% of respondents adopted ICT because other Sacco's did so. The findings support Boek (2009) who stated that competitive pressure and the need for globalisation as an impetus to economic growth compel SMEs to adopt ICT and do business electronically. This implied that the Matatu operators understand the benefits of ICT adoption.

Internal barriers to the adoption of ICTs in your SACCO

The Matatu operators were asked to comment on the internal barriers facing the Sacco on adoption of ICT. The findings are as presented in figure 5.

Table 5. internal barriers to adoption of ICT by Sacco

	Frequency	Percent
Monetary costs of adoption	25	32
Time to implement ICTs projects	16	21
lack of necessary internal skills	16	21
Uncertainty about retains on investment	8	10
Lack of relevant technology	8	10
Lack of top management support/direction/planning	5	6
Total	78	100

Table 5 of the study findings revealed that 32% of the respondents stated that monetary cost of ICT adoption as the barrier to ICT adoption, 21 % stated that time factors and lack of necessary internal skills as the barrier to ICT adoption in the Saccos. The findings agreed with Bennet (2006) who found that lack of capital, experience, poor market research, administrative incompetence, overestimation of market demand and uneven cash flows as barriers to adoption of ICT by SMEs. This means that capital availability is largely the main barrier to ICT adoption.

Strategic value of ICT adoption in the Sacco

The Matatu operators were asked to comment on the strategic value of adoption of ICT. The findings are as presented in figure 6.

Table 6 strategic value of ICT adoption by the Sacco

Strategic value of ICT adoption	strongly agree	Agree	Neutral	Disagree	Strongly disagree
It improves managerial decisions	25(33%)	34(45%)	13(17%)	4(5%)	0(0%)
It enhances managers competence	10(13%)	32(42%)	25(33%)	10(13%)	0(0%)
It enriches the managerial performance	11(14%)	25(33%)	25(31%)	24(31%)	1(1%)
Improves the managerial commitment	4(5%)	25(32%)	22(28%)	24(31%)	3(4%)
It improves customers relations	7(10%)	38(52%)	24(33%)	4(6%)	0(0%)

On being requested to state the strategic value of ICT adoption in the Sacco, 45% of respondents agreed that it improved managerial decisions, 42% stated that it enhances managers competence, 33% agreed that it enriches the managerial performance and 52% agreed also that it improves customers relations. The findings agreed with Chacko and Harris (2011) who noted that the use of ICT adoption techniques has emerged as an efficient gateway for SMEs to take greater advantage of opportunities in global markets. The implication is that the Matatu operators are aware of the value of ICT adoption.

General barrier to ICT adoption in the Sacco

The respondents were probed on the general barriers to adoption of ICT in the Sacco. The findings are as shown in table 6.

Table 6 general barriers to ICT adoption

Barriers	strongly agree	Agree	Neutral	Disagree	Strongly disagree
Lack of knowledge on the value of ICT	8(11%)	23(31%)	21(28%)	22(29%)	1(1%)
Fear of unknown in case of adopting ICT	29(38%)	17(22%)	9(12%)	21(28%)	0(0%)
Lack of strategic planning by the Sacco management	8(10%)	14(18%)	33(43%)	21(27%)	1(1%)
Management desires to maintain status quo	3(4%)	14(18%)	25(33%)	33(43%)	1(1%)
Absence of innovative management	7(9%)	14(18%)	26(34%)	28(36%)	2(3%)

The results in table 4.12 indicated that 31% of the respondents agreed that lack of knowledge on the value of ICT was a barrier, 38% strongly agreed that the fear of the unknown as a barrier, 43% strongly disagreed that the management desires to maintain status quo as a barrier while 43% disagreed were undecided. The study showed that majority of the respondents strongly disagreed to the statement that absence of innovative management as a barrier to ICT adoption. The findings agreed with Sutanonpaiboon and Pearson (2006) statement that barriers to adoption of ICT in the transport industry include financial constraints, lack of IT knowledge, the impact of perceived compatibility and the role of owner/mangers. The findings implied that there are many barriers affecting ICT adoption in transport sector.

Efficient in operations after adoption of ICT

The respondents were asked to indicate their views on efficiency in Sacco operations after

adoption of ICT by the Sacco. The findings are shown in table 7.

Table 7. efficiency in operations in the Sacco after ICT adoption

Views	strongly agree	Agree	Neutral	disagree	Strongly disagree
Less time from one destination to another	52(67%)	22(28%)	4(5%)	0(0%)	0(0%)
Ease of operations in the Sacco	57(71%)	20(28%)	1(1%)	0(0%)	0(0%)
Improved profits for the owner	45(58%)	23(29%)	11(14%)	10(12%)	11(14%)

Table 4.13 indicated that 67% of the respondents strongly agreed that adoption of ICT led to reduction of time spent from one destination to another. 71% strongly agreed that adoption of ICT eased operations in the Sacco. 58% strongly agreed that adoption of ICT improved profits for the owners. The findings add weight to Al-Qirim (2003) argument that small and medium-sized enterprises (SMEs) are incrementally using information and communications technologies to gain competitive advantages and to have access to global markets. The implications of the findings are that Matatu operators fully understand the benefits of ICT adoption.

Customers satisfaction after adoption of ICT

The respondents were requested to indicate their views on customer satisfaction after adoption of ICT by the Sacco. The findings are shown in table 8.

Table 8 customer satisfaction after ICT adoption

Views	strongly agree	Agree	neutral	disagree	Strongly disagree
More customers in the Sacco	42(54%)	41(28%)	2(2%)	2(2%)	0(0%)
Satisfied customers in the Sacco	37(46%)	40(51%)	1(1%)	3(2%)	1(1%)
Improved profits for the owner	12(15%)	45(58%)	14(18%)	4(5%)	2(3%)

Table 4.14 shows that most of the respondents strongly agreed (54%) agreed that adoption of ICT led to more customers in the Sacco. 46% strongly agreed with 51% agreeing that the customers were satisfied with the Sacco after adoption of ICT. Majority (58%) agreed with 15% strongly agreeing that adoption of ICT improved profits for the owners. The findings support Alam and Noor (2009) who stated that better marketing, ease and efficiency in customer satisfaction. The findings implied that customer satisfaction can result from ICT adoption by the Sacco.

Improved performance after adoption of ICT

The respondents were requested to indicate their views on improved performance by the Sacco after adoption of ICT by the Sacco. The findings are shown in table 9.

Table 9 improved performance by Sacco after ICT adoption

Views	strongly agree	Agree	neutral	disagree	Strongly disagree
Less time from one destination to another	23(29%)	44(56%)	4(5%)	6(8%)	0(0%)
Ease of operations in the Sacco	29(37%)	40(51%)	1(1%)	6(8%)	0(0%)
Improved profits for the owner	59(58%)	23(29%)	11(14%)	10(12%)	11(14%)

Table 9 indicated that majority of the respondents (56%) agreed that less time is spent from one destination to another. 51% agreed that there is ease in Sacco operations while the majority (58%) strongly agreed that adoption of ICT led to improved profits for the owners. The findings agreed with Alam and Noor (2009) statement that benefits businesses can gain as a result of adopting Internet include better marketing of the business products and services, ease of use, better efficiency as opposed to paper technology. This showed that ICT is vital for the maximum operations in the transport industry

b) Information on top managers' innovativeness in adoption of ICT

The innovativeness of top managers in adoption of ICT in Matatu Saccos is discussed in this section.

ICT usage

The findings showed that most of the respondents (44%) used ICT for entertainment, 41% used ICT for business purposes with 10% using ICT for advertising while 5% used ICT for personal communication. The findings implied that the operators in the Sacco's have not fully adopted ICT and they have only benefitted minimally from ICT. Similarly, ICT for them is primarily for entertainment. They are thus late adopters.

Advertising methods

The respondents were requested to state the preferred method of advertising in the Sacco. The study findings revealed that majority of the respondent (54 %) stated that radio was the main advertising medium and 27% pointed that the newspaper was the main medium of advertising. The other 15% and 4% pointed at the internet and fliers as key advertising medium. This means that there is limited embracing of ICT usage in the transport industry.

What do you think is the most prominent reasons for customers not fully using the ICT services in your SACCO

The respondents were probed on the reasons why the customers disliked using ICT in the Sacco. The findings revealed that 68% of the customers lacked the literacy to use ICT, 21% lacked the knowledge to use ICT with 11% missing the necessary ICT tools. The findings contrasts Baron (2000) who stated that the major drawback in the adoption of ICT of the Matatu SACCOS is the lack of the basic skills in the business management and entrepreneurship.. This means that the customers require sensitization on benefits of ICT.

Views on why you think your Sacco is innovative in its operations

The respondents were probed on the innovativeness of the Sacco in its operations in terms of adoption of ICT. The findings are as shown in table 10

Table 10 views on Sacco's innovation

Reasons	strongly agree	Agree	neutral	Disagreed	Strongly disagree
Managers in the Sacco are competent in the use of ICT	19(25%)	12(16%)	25(33%)	14(18%)	6(8%)
The Sacco's use ICT in its daily operation	1(1%)	26(34%)	25(33%)	23(30%)	1(1%)
Employees of the Sacco have knowledge on internet and/or computer apps	1(1%)	7(9%)	38(50%)	30(40%)	0(0%)
There is lack of information on the availability of ICT in their Sacco	4(5%)	11(15%)	23(30%)	35(46%)	3(4%)

Table 10 shows that 33% were undecided on the manager's competence in the use of ICT, 34% agreed that the Sacco use ICT in its daily operation, 50% were undecided that employees of the Sacco have knowledge on ICT. Similarly, 46% disagreed that there is lack of information on the availability of ICT in their Sacco. The findings contrast Molla & Licker (2005) argument that an innovative organization refers to the availability of innovative managers and employees with adequate experience and exposure to information and communication technology. The response showed that the Matatu operators do not fully understand the concept of innovation in Matatu operations.

c) Information on the organization innovation in adoption of ICT

Benefits of your Sacco's adoption of ICT

The respondents were probed on the benefits of adoption of ICT in the Sacco. The findings are as shown in table 11.

Table 4. 2 benefits of adoption of ICT by Sacco

Views	strongly agree	Agree	neutral	disagree	Strongly disagree
Presence of improved efficiency in operations	27(36%)	32(42%)	14(18%)	3(8%)	0(0%)
Presence of innovative staff who have embraced ICT	11(15%)	26(34%)	27(36%)	12(16%)	0(0%)
Improved customer relations from the staff	5(7%)	33(44%)	21(28%)	16(21%)	0(0%)
More profits from adoption of innovative operations	4(5%)	33(44%)	18(24%)	19(25%)	1(1%)
Efficiency and effectiveness in overall performance	12(16%)	12(16%)	35(46%)	17(22%)	0(0%)
ICTs are important tool in any organization in this modern era	51(68%)	20(27%)	0(0%)	4(5%)	0(0%)

Table 11. shows that on the benefits of adoption of ICT, 42% of the respondents agreed that it improved efficiency in operations, 36% were undecided that it led to innovative staff who had embraced ICT, 44% agreed that it improved customer relations from the staff, 44% agreed that it led to more profits and innovative operations, 46% were undecided that there was efficiency and effectiveness in overall performance, while 68% strongly agreed that ICTs are important tool in proper running of any organization in this modern era. The findings are in support of Chacko and Harris (2011) who noted that the use of ICT adoption techniques enables SMEs to take greater advantage of opportunities in global markets. The response showed that

there is mixed feelings on ICT adoption and operators require sensitization on the benefits.

Did you adopt ICTs after seeing other Matatu SACCOS within your area of operation?

The respondents were probed on the reasons of adoption of ICT in the Sacco. The findings indicated that majority of the respondents 80% adopted the use of ICT after copying from other Matatu Saccos. Only 20% of the respondents stated that they willingly adopted ICT. Mpofu, Watkins-Mathys and Milne (2012), further observed that there is a significant influence of personal friendships in ICT adoption among SMEs in South Africa. This implied that the support and use of ICT are mostly influenced by the adoption and innovation from other users.

Barriers your Sacco encounters in terms of ICT adoption and usage.

The respondents were probed on the barriers to adoption of ICT in the Sacco. The findings are as shown in table 12

Table 12 barriers to ICT usage and adoption

Barriers	strongly agree	Agree	neutral	Disagreed	Strongly disagree
Lack of managerial awareness on the benefits of innovation as a result of ICT adoption	29(38%)	28(36%)	9(12%)	11(14%)	0(0%)
Lack of technical skills on the use of ICT in the Sacco	7(9%)	30(39%)	29(38%)	11(14%)	0(0%)
Fear of the unknown in case of adopting ICT by the Sacco	7(9%)	20(27%)	31(41%)	17(23%)	0(0%)
Lack of training on the benefits of ICT adoption	6(8%)	26(35%)	20(27%)	23(31%)	0(0%)

Table 12 shows that 38% of the respondents strongly agreed that lack of managerial awareness on the benefits of ICT was a barrier, 39% agreed that lack of technical skills on the use of ICT was a barrier, 41% were undecided that fear of the unknown in adopting ICT was a barrier, while 35% agreed that lack of training on the benefits of ICT was a barrier. The findings supports Mpofu, Watkins-Mathys and Milne (2012) who observed that the adoption of ICT and growth strategy appeared to be mainly inhibited by financial constraints, lack of time to implement ICTs and the frequently experienced power outages across South Africa. The findings showed that there are mixed understanding among Matatu operators on ICT adoption barriers.

1.1.2 Outsourcing of ICT skills

The Matatu operators were asked to comment on the Sacco's outsourcing of ICT skills. The findings indicated that majority of the respondents (85%) agreed that the Sacco outsourced skills while a few 15% were in disagreement that the Sacco outsourced skills. The finding adds weight to Mbonyane and Ladzani (2011) argument that SMEs struggling with financial and other limitations usually get ICT services at a fee from others.

Innovation aspects in your Sacco

The Matatu operators were asked to comment on innovation aspects of the Sacco on adoption of ICT. The findings are as presented in figure 13.

Table 13 innovation aspects by the Sacco

Innovation aspects	strongly agree	Agree	Neutral	disagree	Strongly disagree
The Sacco has regularly been adopting ICT	1(1%)	28(37%)	12(17%)	17(22%)	19(25%)
The Sacco use ICT to sell its products and services	0(0%)	39(51%)	20(26%)	18(23%)	0(0%)
The Sacco uses the Internet to order for products/services.	0(0%)	28(37%)	35(47%)	12(16%)	0(0%)
The Sacco use the Internet to market its business' products	0(0%)	31(40%)	30(39%)	14(18%)	2(3%)
The Sacco use the Internet to manage and communicate with its customers	4(5%)	24(32%)	36(47%)	10(13%)	2(3%)
The Sacco use the Internet to store business data online	0(0%)	14(19%)	36(48%)	24(32%)	1(1%)
The SACCO uses the Internet to interact with government agencies, for example KRA, TLB, e.t.c	2(3%)	31(42%)	33(41%)	8(11%)	0(0%)

On innovative aspects in the Sacco, table 13 shows that 37% of the respondents agreed that the Sacco has regularly been adopting ICT, 51% agreed that the Sacco use ICT to sell its products and services, 47% were undecided that the Sacco uses the Internet to order for products/services, 40% agreed that the Sacco use the Internet to market its business' products, 47% were undecided that the Sacco use the Internet to manage and communicate with its customers, 48% were undecided that the Sacco use the Internet to store business data online while 42% agreed that the SACCO uses the Internet to interact with government agencies, for example KRA, TLB, e.t.c. The findings support Syed and Noor (2009) who noted that small businesses tend to avoid ICTs in their business if they are seen as complex to use, this is not surprising because SMEs usually lack skills amongst the work force to use ICTs. The findings showed that the operators have some understanding on the innovation aspects of ICT adoption.

Testing Regression Model Assumption

Before regression analysis was done, the assumptions of multivariate analysis were tested to ensure that there was no violation of multivariate analysis assumptions. The data was checked for normality, outliers and multicollinearity.

Regression analysis

The regression analysis of the study variables was, presented, outlined and discussed in this section.

Table 14 summary of overall model

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.864[a]	.746	.730	.4990209	1.699

Dependent variable: adoption

Predictors: (Constant), organization innovation, competition, top management, innovation IT expertise. The model explained that the four independent variables that were studied, explained only 74.6% of the factors affecting the adoption of ICT in Matatu Saccos in Thika town as represented by the R^2. This means that other factors of adoption of ICT not studied in this study contributes 74.6% of adoption of ICT among Matatu Saccos in Thika town. More investigation need to be undertaken to cater for the other

35.4% of the factors affecting the adoption of ICT in Matatu Saccos in Thika town.

Analysis of Variance (ANOVA)

Table 15 analysis of variance (ANOVA)

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	143.002	2	31.274	56.285	.000[b]
	Residual	79.048	167	.581		
	Total	213.007	189			

a. Dependent Variable: EI

b. Predictors: (Constant) Top Management, organisational innovativeness.

The significance value is 0.000 which is less that 0.05 thus the model is statistically significance in predicting how organization innovation, competition, Top management, innovation IT expertise as determinants of adoption of ICT among matatu Saccos in Thika town. Since F calculated is greater than the F critical (value = 56.285), this shows that the overall model was significant.

Coefficients[a]

Table 16 Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.018	.061		.294	.170
	Top management	.509	.063	-.429	-6.490	.000
	Organization innovation	.436	.065	.351	5.190	.000

a. Dependent variable: adoption of ICT

Based on the table 4.31, the regression equation for adoption of ICT is

Adoption = 0.018+ 0.509_{X1} + 0.436_{X4}

The equation indicated that, top management, competition and organization innovation are positively correlated with adoption of ICT. However, innovative ICT expertise had a negative relationship to adoption of ICT. From the findings of this study, it is correct to state that top management was the predictor variable that contribute the highest to the adoption of ICT in the Matatu Saccos. Thus, every unit increase by top management will increase a total of 0.509 adoption of ICT provided other variables remain constant. The second highest predictor was organization innovation (β, 0.436.

SUMMARY OF FINDINGS

This study investigated the factors affecting the adoption of information and computer technology in small and medium enterprises in Kenya; a case of Matatu Saccos in Thika town. The study aimed at researching on the objectives; innovative top management, organizational innovation, innovative IT expertise and competition on the adoption of ICT. The study attempted to answer the question on why there is lack of adoption of ICT by Matatu Saccos. Scholars have stated that the problem of growth and performance of the Matatu SACCOs is the lack of the basic skills in the business management and entrepreneurship. Despite the efforts to solve the problems of inadequate adoption of ICT, a major drawback in the growth and performance of the Matatu SACCOs is the lack of the basic skills in the business management and entrepreneurship. Matatu SACCOs experiences the common causes of small business collapse such as lack of capital, experience, poor market research, administrative incompetence, overestimation of market demand and uneven cash flows.

A response rate of 78% was obtained from the study participants with 27 % of the respondents being managers, 46 % drivers and 51% were conductors. The study findings revealed that 77 % of the respondents had secondary school certificate. At the same time, 47 % of the Saccos had an average of 11-49 workers with most of the Saccos (53 %) having above 50 workers. The study findings revealed that 2NK, Chania, and Manchester saccos were evenly distributed with a population of between 21-22% of the Matatus in Thika. 4NTE and Thika road sacco had a population of between 17 and 19% of the population. Majority of the respondents agreed with the assertion that knowledge level affects ICT adoption. Approximately 50% of the respondents also do not have prior knowledge on ICT opportunities. However, majority of the respondents agreed with the assertion that they do not understand the importance of ICT.

Reliability test was conducted and all factors had cronbach alphas of 0.7 and therefore measures were internally consistent. The study found that overall cronbach's alpha for top management (0.865), competition (0.735), innovative IT expertise (0.702), organization innovation (0.766) and adoption of ICT was 0.710. The questionnaire was validated using discriminant validity tests. The measures of convergent validity met threshold of more than 0.5 AVE. Discriminant validity was tested to see if the square root of every AVE was much larger than any correlation among any pair of latent construct. To ensure that there was no violation of the data before analysis test for outliers, normality, multicollinearity were performed.

The first objective of this study was to establish the effect of innovative top management support on the adoption of ICT adoption among the Matatu SACCOs in Thika town. Innovative top management had the leading correlation of 0.876 which is a strong positive correlation. Factor loadings of the items retained under innovative top management were 0.865. This indicated that the measures were internally consistent and reliable. Majority of the respondents agreed with questionnaire items. Innovative top management had a strong relationship with adoption of ICT. This implies that the Sacco growth solely depends on the management skills and innovation of its top managers.

The second objective of this study was to determine the effect of organizational innovation on the adoption of ICT among the Matatu SACCOs. Organization innovation had the second best correlation, a moderate positive correlation of r=0.549. It explained above average variation to

adoption of ICT. Factor loadings on all the items under this factor was 0.766, therefore, the measures used were internally consistent and reliable. Majority of the respondents agreed with questionnaire items. Organization innovation had a moderate positive correlation with adoption of ICT. This implies that the Sacco's ability to integrate ICT in its operations is important in the overall success, survival and growth.

Conclusions

This study investigated the factors affecting the adoption of information and computer technology in small and medium enterprises in Kenya; a survey of Matatu Saccos in Thika town. Two predictor variables namely; innovative top management and organizational innovation and their effect on adoption of ICT were studied.

The study concluded that, innovative top management had the leading correlation which was a strong positive correlation. The strong relationship indicated the important role the management of the Matatu Saccos plays in decision making in terms of whether the organization is to adopt ICT and grow and prosper or the status quo will remain. A proactive and innovative top management will always try to be always ahead of competition which will automatically increase the survival and growth rate of the organization. Progressive management in Matatu Sacco should therefore opt to adoption of ICT.

Organization innovation had the second best correlation which was a moderate positive correlation to adoption of ICT. It can be concluded that the ability or inability of an organization to adopt ICT is an indicator of prosperity or growth problems. An organization must embrace innovation in all spheres of its operations to survive in the competitive business world. A Matatu Sacco that is innovative through the adoption of ICT will have a guarantee of a better future. Innovation in an organization is therefore a vital parameter to growth and expansion.

It can therefore be concluded that Matatu Saccos in Thika are late adopters of ICT as viewed from the lifecycle model. The overall success the adoption of ICT by Matatu Saccos will solely depend on the ability of top management to embrace innovation, the organization to be holistic to technology, the ability to positively compete and the effective utilization of innovation and technology expertise to drive the organization to growth.

Recommendations

The Matatu entrepreneurs should adopt and ensure that ICT readily available to the workers. The entrepreneurs through their umbrella bodies should initiate and support training programmes to develop the capacity of their workers in Matatu Saccos on ICT tools.

Areas for future study

A study should be carried out to evaluate the effect of adoption of ICT in Matatu Saccos for each of the four variables in this study. This will give the true value of the variable to adoption of ICT. The study on the adoption of ICT by Matatu Saccos should be carried out in other towns in Kenya to compare the measures to the findings in this study.

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