

## **Factors Affecting Adoption of Electronic Commerce among Small Medium Enterprises in Kenya: Survey of Tour and Travel Firms in Nairobi**

**Dr. Wanjau Kenneth**

**Macharia N. Rebecca**

**Ayodo Eunice M. A.**

Jomo Kenyatta University of Agriculture & Technology  
P O Box 62000-00200 Nairobi, Kenya.

### **Abstract**

*The advent of Internet based electronic commerce offers considerable opportunities for large and small firms across to expand their customer base enter new products and rationalize their businesses by competing in the global economies. SMEs have generally been slow to adopt and evaluate electronic commerce. The SMEs have failed to reach the levels of adoption required to realize the benefits associated with it during formative stages of the enterprises. Many SMEs are unaware of the potential of electronic commerce to enhance their business operations which they consider not applicable to the products and service. This paper is a report on the factors that affect adoption of electronic commerce among SMEs in Kenya with particular reference to Tours and Travel Firms. The specific objectives of the study included determining the effect of leadership styles, resources, infrastructure and competition on the adoption of electronic commerce among SMEs in Kenya. The study used survey research design in collecting the data from respondents and simple random sampling procedure to select a sample that represented the entire population. The study population was three hundred and fifty tours and travel firms. This study found out that the majority of Tour and Travel firms have adopted electronic commerce in their daily transaction. The findings also showed the significance influence of leadership style, resources, infrastructure, competition and positioning on the adoption of electronic commerce.*

**Keywords:** Technology, E-commerce, Entrepreneurship

### **1. Introduction**

#### **1.1 Background of the Study**

Electronic commerce can be defined as any economic or business activity that uses Information Communication Technology (ICT) based applications to enable the buying and selling of products and services and to facilitate the transaction of business activities between and among businesses, individuals, governments or other organisations (Fink & Disterer, 2006). This includes using ICTs to strengthen a company's internal operations, such as logistics, procurement, and human resource and contracts management, information and data management, communication functions, and to facilitate the flow of products between businesses and consumers, e.g. marketing, ordering, payment, delivery, and searching for suppliers (McIvor & Humphreys, 2004).

Adoption of electronic commerce offers a great opportunity to SMEs to gain greater global access and reduced transaction costs, provides substantial benefits via improved efficiencies and raised revenues; facilitates access to potential customers and suppliers, productivity improvements, customization of products and services and information exchange and management (UNCTAD, 2002). However, usage patterns among SMEs in Kenya show a slow progression from the use of the Internet for communication (primarily electronic mail) to use of the Internet for research and information search, to the development of websites with static information about a firm's goods or services (Macharia, 2009).

According to WTO (2002) the Internet is revolutionizing the distribution of tourism information and sales. An increasing proportion of Internet users are buying on-line and tourism will gain a larger and larger share of the online commerce market (Wang, & Cheung, 2004). Obviously, the Internet is having a major impact as a source of information for tourism (Buhalis & Schertler, 1999).

However, the Small and Medium Tourist Enterprises are facing more stringent impediments to the adoption of new information technology, in particular, electronic commerce. Part of the problem relates to limited resources and technology capabilities, the scale and affordability of information technology, as well as the facility of implementation within rapidly growing and changing organizations (Raisinghani, Melemez, Zhou, Paslowski, Kikvidze, Taha & Simons, 2005). In addition, new solutions configured for large, stable, and internationally-oriented firms do not fit well for small, dynamic, and locally-based tourism firms (Wang & Cheung, 2004).

However, most of the studies on electronic commerce adoption evaluation and benefits realization that have been done to-date have been carried out in large organizations (Lin, 2005). According to Macharia (2009), there is limited systematic research into the challenges enterprises face in adopting electronic commerce in developing countries and in particular the SMEs in Kenya. Hence this study sought to explore the factors that affect adoption of electronic commerce among SMEs in Kenya, through a survey of tours and travel firms in Nairobi.

## **2. Literature Review**

### **2.1 Tourism Industry**

Electronic commerce has transformed some sectors of SMEs, most notably; the travel and finance sectors which have relatively managed to develop successful stand-alone, online initiatives and integrated electronic commerce applications into traditional business processes (Bernadas & Verville, 2005). Online travel and finance enterprises succeeded because they based their products on information and services that were quickly available 24 hours a day seven days a week, as opposed to selling and shipping tangible goods. Thus, these firms avoided the logistical challenges that affected other types of fledgling electronic commerce companies trying to market, sell and move tangible goods (Forrester, 2001). The growth of on-line travel services was also enabled by the advent of electronic tickets which did not need to be shipped to customers (Reynolds, 2006).

Electronic commerce offers tourism businesses the potential to make information and booking facilities available to large number of tourists at relatively low costs. It also provides a tool for communication between tourism suppliers, intermediaries, as well as end-consumers (Reynolds, 2006). The Organization for Economic Co-operation Development (OECD, 2000) revealed that the advent of Internet-based electronic commerce offers considerable opportunities for firms to expand their customer base enter new product markets and rationalize their business. World Tourism Organization (WTO) 2001 also indicated that electronic business offers SMEs the opportunity to undertake their business in new and more cost-effective ways. According to WTO (2001) the Internet is revolutionizing the distribution of tourism information and sales. An increasing proportion of Internet users are buying-on-line and tourism will gain a larger and larger share of the online commerce market. Obviously, the Internet is having a major impact as a source of information for tourism (Briggs, 2001).

Tourism is ranked as one of the world's largest industry, with a global GDP of 11% and also the largest on-line industry (Roger, 2002). Dawson and Edwards, (2008) undertook a survey among tour companies in United States which indicated that online leisure travel bookings reached about \$51B in 2005, or 44% of all online sales, which were around \$122B in the same year. Roughly 30% of all travel bookings currently occur online. According to Laudon and Traver (2004) most companies in the hotel and travel industry consider electronic mail to be very important in gaining international exposure and connecting with potential customers. This is particularly true for companies that either have a website or are listed on hotel/tourism trade sites (Briggs, 2001).

In Kenya, tour companies including travel agencies as well as specialty tour companies such as diving and adventure tour operators, have also been able to obtain a significant amount of new business through the Internet, much of which is organized through electronic mail (GOK, 2010). Tour companies use their websites as their primary channel for obtaining new customers or booking return visits (Scupola, 2008). The most successful websites have generic, easy to find names and have registered with search engines (WTO, 2001). The development of tourism in Kenya has been a success story and the industry has contributed to the growth of the country's Gross Domestic Product (GDP), raised the foreign exchange earning capacity, and has created employment opportunities. There are 1612 (SMEs) registered with the Ministry of Tourism divided into nature trailers, curio entrepreneurs, ecotourism cites, travel agents, tour operators and hotels (GOK, 2010).

### **2.2 Origin of Electronic Commerce**

The Internet began in 1969 as a Department of Defense experiment that involved networking four computers to facilitate communications in the event of a nuclear war (Martin & Matlay, 2001).

Until about 1993, the Internet remained an obscure computer network with few commercial applications. By 2003, Internet users numbered 390 million worldwide because the growth was facilitated by the introduction of technology that provided access to World Wide Web (Zinatelli & Angele, 1996). Internet has four functions; communication, information, entertainment and electronic commerce which is composed of electronic exchanges, extranets and private exchanges, electronic storefronts, online ticketing and auctions (Chieochan, Lindley & Dunn, 2002). Tourism is ranked as one of the world's largest industry, with a global GDP of 11%, and also the largest on-line industry (Roger, 2002). Tourism is its fastest growing sector with an estimated annual growth of 10-30% (Wearing, 1998). The growth in tourism and travel can be contributed to globalization. The Internet is the most common information channel for travel. In 2001, 29% of travellers reported planning their travels online. In 2002 that number rose to 49% (Laudon, 2004).

Africa, with its great wealth and unique resorts, can benefit from the ever increasing population of the Internet particularly in the USA and Western Europe where most of the tourists to Africa come from (WTO, 2001). Beck, Wigand and Konig (2005) undertook a survey to find the nature and extent of electronic commerce adoption by tourism organizations from South Africa, Kenya, Zimbabwe and Uganda which are all popular tourist destinations in Eastern and Southern Africa. Another survey was carried out by WTO (2001) of tourism organizations from USA and Western Europe. In both the surveys a total of 373 websites from the four African countries and 180 from the USA and Western Europe were accessed and then evaluated against a list of electronic commerce features. The surveys revealed that few of the African organizations are embracing electronic commerce and that, although some websites were comparable to those of their western counterparts, the majority had room for considerable improvements (Beck, Wigand & Konig, 2005). The African websites were found to be generally informative but lacked interactive facilities for online transactions (Maswera, 2008).

### **2.3 Tourism Sector in Kenya**

Kenya is one of the most popular tourism destinations in Africa and tourism is a key foreign exchange earner for the country (GOK, 2007). Various government Ministries have had responsibility for tourism since Kenya's independence. They include the Ministry of Tourism and Wildlife; Ministry of Wildlife and Natural Resources; Ministry of Tourism, Trade and industry and currently Ministry of Tourism. A number of parastatal bodies also have a significant influence over the industry including: Kenya Wildlife Service (KWS) which is responsible for Wildlife Management and Conservation; Kenya Tourist Development Board (KTDB) which promotes local investment in tourism enterprises; African Tour and Hotels (AT & H), responsible for hotel management and tours and Kenya Tourism Board (KTB) which, like other national tourist offices, is a marketing and promotions organization (GoK, 2007).

The tour and travel firms are registered by the Ministry of Tourism and then accredited to Kenya Association of Tour Organizations (KATO) which has been representing the interests of Kenyan travel agents since 1979 when its forerunner, the East African Society of Travel Agents, which had been in existence for 22 years was disbanded due to the collapse of the East African Community (KATO, 2009). KATO works to enhance and improve the Travel Industry business climate in Kenya by promoting the services of her members to the general public, protecting their rights and assisting them to optimize their businesses. There are over 1612 Institute Association of Travel Agents (IATA) accredited Travel Agencies in Kenya (KATA).

Electronic commerce is turning out to be a positive tool for the tourism industry in Kenya. Tour operators, the first one to hook on to, have launched innovative websites and portals to zero in on both domestic and foreign clients (O'Biren, 2004). Tourism is one industry which has made use of the Net to the core. The online tourism industry has enormous potential, with many opportunities for the existing companies who have vested interests in the tourism industry, or new companies with an entrepreneurial idea (Forrester Research, 2001). People are already making bookings over the Internet, planning their holidays, reading magazines and newspapers, exchanging information and doing a thousand things they never thought they would be doing electronically (Wang & Cheung, 2004). Emerging Information Technology-based tools require re-engineering of business processes as well as the development of strategic vision and commitment to enable tourism enterprises and destinations to develop competitiveness (Robinsol & Clarke-Hill, 2007).

### **2.4 Theoretical Review**

As the twenty-first century unfolds, the Internet and electronic commerce have become increasingly important to the business world (Maswera & Edwards, 2008).

In particular, small to medium sized businesses (SMEs) can now overcome some of their major disadvantages, such as size, limited financial, technological and human resources, and limited exposure to the global marketplace, by adopting Internet technologies (Cooper & Burgess, 2000; Riquelme, 2002). There are a number of theoretical Models that seek to explain electronic commerce adoption by SMEs. The literature reviewed in this study include the Change Agency Theory (Grandon & Pearson, 2004; Seyal & Rahman, 2003; Teo & Ranganathan, 2004; Mao & Palvia, 2008), the Stage Model (Elsammani, Hackney and Scown 2004; Raisinghani, Melemez, Zhou, Paslowski, Kikvidze, Taha and Simons 2005), Internet Adoption Model (Mehrtens, Cragg and Mills (2001) on perceived benefits and organizational readiness Technology Acceptance Model (TAM) (Cooper & Burgess, 2000) and Electronic Commerce Business Model (Timmers, 1998). Based on the theories, the study developed a conceptual framework with independent variables being leadership style, infrastructure, resources of the enterprise and competition against the dependent variable of adoption of e-commerce by SMEs.

## **2.5. Leadership Style**

Epstien (2005) conceptualizes leadership in terms of commitment at the top; thorough analysis of a company's electronic commerce position where the company must evaluate its position regarding electronic commerce; significant financial investment which must make resources available and cultural transformation which must make sure the firm culture adapts. With those a firm begins developing and implementing electronic commerce initiative (Caldeira & Ward, 2003). In SMEs, it is the owner/manager who initiates, participates in project electronic commerce and establishes a clear goal for their ventures (Hostager, Neil, Decker & Lorentz, 2004). To move forward owner/managers need to be enthusiastic, passionate and a firm believer of the benefits of electronic commerce and must be committed to considering as playing electronic commerce a significant role in the organization (Jones, 2004). Owner/Manager in SMEs needs to combine elements of both leadership and management in their role during the entire implementation cycle of implementing electronic commerce in their ventures (Rashid & Al-Qirim, 2001).

## **2.6 Resources of the Enterprise**

In an enterprise, the financial, human and technology resources such as computers, telephone lines, cables among others play a very important role in the adoption of new technologies (Rashid & Al-Qirim, 2001). In the case of SMEs in particular, even if the managers perceive the adoption of new technologies and electronic commerce as important, the enterprises often do not have sufficient resources to adopt them (Thong & Yap, 1995b). This is a major obstacle to the integration of new technologies and electronic commerce in SMEs. Severe organizational constraints on financial, technological and human resources often cause businesses in developing countries to lag behind their counterparts in developed countries in using electronic commerce (Huy & Filiatrault 2006).

## **2.7 Infrastructure**

Understanding technology infrastructure – and thus understanding what is and is not achievable is essential to formulating travel and tourism's vision and strategy (Wang & Cheung, 2004). The capital infrastructure relates to how to secure funding for an electronic business and subsequently value that business (WTO, 2001). The media infrastructure is an important issue for all electronic commerce managers because the Internet is a mass communication platform (Daniel, Wilson, & Myers, 2002).

According to Lawson, Alcock, Cooper and Burgess (2001), if electronic commerce is taken up by enterprises in developing countries it would require a number of underlying capacities to be present which may be available within the enterprises themselves while the market can supply some of these capacities. In other cases, though, there may be a case for promotional interventions at a national level as national infrastructure (Mirchandani & Motwani, 2001). One reason why States succeed in establishing a good environment for implementation of electronic commerce is the existence of some common ICT infrastructure, standards and applications. This has made many internal electronic transactions commonplace and well-accepted (Looi, 2005). The infrastructure of a country positively influences the adoption of new technologies (Ling, 2001; Chieochan et al., 2000). In countries with good technological support and a sound infrastructure, adoption is more marked (Tan & Teo, 2000).

## **2.8 Competition**

A number of authors have studied the possible influence of the intensity of competition on the adoption of new technologies or of electronic commerce (Iacovou et al., 1995; Robertson & Gatignon, 2000).

By contrast, Thong (1999) found out that competition influences the adoption of new technologies or electronic commerce very little in small enterprises, while Premkumar and Roberts (1999) findings were contrary; that the pressure of competition is a factor that influences adoption. Intensity of competition can be measured by the number of competitors and the policies of adoption of electronic commerce in these enterprises. Finally, Lertwongsatien and Wongpinunwatana (2003) have found that there is a relationship between the intensity of competition in an industry and the degree of adoption of electronic commerce. According to Kinyanjui and McCormick (2002) ensuring competition and entry opportunities for other market players, particularly smaller ones, must be an ongoing policy priority. Electronic business and Internet strategies appear to be reinforcing market structures and the role of these companies (Rennhard, Sandro, Laurent, Platter & Hutchison, 2004). Auger, BarNir and Gallagher (2003) observe that while Internet commerce provides SMEs with opportunities to participate in new supply chains and markets, they may compete and conflict with established channels and established market structures. There may be explicit or implicit pressures from leading firms to maintain existing channel structures and networks or to refrain from participating in new channels (Chong, 2006). Competition authorities need to monitor possible anti-competitive behaviour as the electronic marketplace evolves. Technological factors also come into play (Dixon, Thompsons & McAllister, 2002).

## **2.9 Empirical Review**

Wang and Cheung (2004) observe that new technologies can produce an essential contribution to tourism development. For tourism businesses, the Internet offers the potential to make information and booking facilities available to large numbers of tourists at relatively low costs. It also provides a tool for communication between tourism suppliers, intermediaries, as well as end-consumers. OECD (2000) reveal that the advent of Internet-based electronic commerce offers considerable opportunities for firms to expand their customer base enter new product markets and rationalise their business. WTO (2001) also indicate that electronic business offers SMEs the opportunity to undertake their business in new and more cost-effective ways.

According to a study recorded by WTO (2001), the Internet is revolutionizing the distribution of tourism information and sales. An increasing proportion of Internet users are buying on-line and tourism will gain a larger and larger share of the online commerce market. Obviously, the Internet is having a major impact as a source of information for tourism. However, the SMTEs are facing more stringent impediments to the adoption of new information technology, in particular, electronic business (Wang & Cheung, 2004). Part of the problem relates to the scale and affordability of information technology, as well as the facility of implementation within rapidly growing and changing organizations (Kinyanjui, & McCormick, 2002).

In addition, new solutions configured for large, stable, and internationally-oriented firms do not fit well for small, dynamic, and locally-based tourism firms (Mirchandani & Motwani, 2001). Despite these challenges, SMTEs with well-developed and innovative Web sites can now have “equal Internet access” to international tourism markets. This implies equal access to telecom infrastructure, as well as to marketing management and education (Buhalis & Schertler, 1999). According to a Forrester Research (2001) survey “it is not the cost of being there, on the on-line market place, which must be reckoned with, but the cost of not being there.” It is certain that embracing digital communication and information technology is no longer an option, but a necessity. Thus, one of the most important characteristics of electronic commerce is the opportunity and promise it holds for SMTEs to extend their capabilities and grow (Wang & Cheung, 2004).

In a study undertaken by Turban, Lee, King and Chung (2000), it was found out that the study of electronic commerce in the tourism industry has emerged as a ‘frontier area’ for information technology. However, the adoption of Information and Communication Technologies (ICT) is only part of the story as there are other important aspects such as network access costs, dissemination of information on electronic commerce, training, skill development and human resources provide big challenges for smaller companies (WTO, 2001).

In tourism, SMEs are mainly tour operators that organize safaris and flexibility and rapid coordination are especially important in this sector while Mobile phones are used to stay in contact with the drivers (Wang & Cheung, 2004). At the same time this is also the sector that is oriented mostly towards foreign customers and some tour operators have even set up their own web pages and can attract customers directly (Shiels, McIvor & O’Reilly, 2003).

In two similar studies done by Buhalis and Schertler (1999) and OECD (1999), it was found out that the difficulty in addressing issues of trust and confidence also makes SMTEs more vulnerable than large firms to problems linked to authentication/certification, data security and confidentiality and the settling of commercial disputes. However, a SME electronic commerce study done by Forrester Research (2001) 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 marketplace (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 tourism 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 tourism 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 innovation adoption step in organizations 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 more quickly the innovation is adopted, 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.

### **3. Methodology**

#### **3.1 Research Design**

Research design is the blueprint that enables the investigator to come up with solutions to problems and guides him in the various stages of the research (Nachmias & Nachamias, 2004). Cooper and Schindler (2003) summarizes the essentials of research design as an activity and time based plan; always based on the research question; guides the selection of sources and types of information; a framework for specifying the relationship among the study variables and outlines the procedures for every research activity. 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).

#### **3.2 Population of the Study**

A population is defined as a complete set of individuals, cases or objects with some common observable characteristics (Mugenda & Mugenda, 2003). Dencombe (2007) defines a population frame as “an objective list of the population from which the researcher can make his or her selection.” A population frame must thus contain an up-to-date list of all those that comprise the target population. This study’s population consisted of tours and travel firms because according to Wang and Cheung (2004) the Internet offers tourism business the potential to make information and booking facilities available to large numbers of tourists at relatively low cost and it also provides a tool for fast communication between tourism suppliers, intermediaries, as well as end-consumers. The target populations was drawn from a population frame of three hundred and fifty (350) Tour and Travel firms who are members of Kenya Association of Tour Operators (KATO) located in Nairobi that are in the category of SMEs.

#### **3.3 Sample Size**

Sampling design refers to a research plan that indicates how cases are to be selected for observation or as respondents (Mugenda & Mugenda, 2003). For small populations, the general rule-of-thumb is that one needs to have at least 30 respondents but for bigger populations, a representative depends on the mode of selection and according to Gay (1981) a sample of 10% is representative. From the target population of 350 a sample size of 10% was taken giving a respondent base of 35 respondents consisting of managers. This sample size is considered representative and comprehensive in the coverage of the study objectives and economical in terms of time and money.

### 3.4 Sampling Technique

The study used simple random sampling procedure to select a sample that represents the entire population. According to Mugenda and Mugenda (2003), simple random sampling is a probabilistic sampling technique which ensures each subject, object or respondents to have an equal chance of representation. A simple random sample is used when a population is heterogeneous making it the most appropriate sample to come up with the target sample. In this study the stratum consisted of management of the selected tours and travel firms.

### 3.5 Data Collection Instruments and Procedure

Questionnaires, incorporating both open-ended and closed-ended questions items were used to gather the study's data. According to Cooper and Emory (2008), the questionnaire is conveniently used because it is cheaper and quicker to administer, it is above researcher's effect and variability, and is highly convenient for the respondents as they could fill them during free times or when workloads are manageable. The instruments incorporated Likert scales to measure perception, attitude, values and behavior. The questionnaires were self-administered.

### 3.6 Data Analysis and Presentation

Quantitative data was edited to eliminate inconsistencies, summarized and coded for easy classification in order to facilitate tabulation and interpretation descriptive statistics was used in describing the sample data in such a way as to portray the typical respondent and to reveal the general response pattern. These statistics were generated with an aid of the computer software, Statistical Package for Social Sciences (SPSS) which offers extensive data handling capability and numerous statistical analysis routines that can analyze small to very large data statistics (Muijs, 2004).

## 4.0 Findings

### 4.3.1 Age and Education Level

Age and Education level have a large bearing on adoption of electronic commerce. Information technology especially electronic commerce is a recent development and thus young generation is more astute to it. It is therefore expected that age and education level determines the success in adoption of electronic commerce. This points out that the targeted SMEs largely employ university graduates who are well versed in new technology and this implies that they were in a position to give the desired respond.

**Table 4.2: Age and Highest level of Education**

Age	Highest Level of Education			Total
	Secondary	College	University	
21-30	6.7	20.0	13.3	40.0
31-40	0	10.0	23.3	33.3
41-50	0	6.7	20.0	20.0
Over 51 years	0	3.3	3.3	6.7
Total	6.7	40.0	53.3	100.0

### 4.3.2 Management Level

The respondents were spread into 3 different levels of Management these were upper level, middle level and low level managers. Majority of the respondents were in the middle and upper management with 43.3% and 36.7% response respectively whereas 16.7% were in the lower level management. This means that the responses represent the levels of management in the SMEs. This is important in this study due to the electronic adoption for different purposes across the different levels of management of an organization. This is in line with (Du Plessis and Boon, 2004) who states that electronic commerce managers must be responsible for web design and digital content.

### 4.4 Adoption of Electronic Commerce in Business Transactions

Table 4.3 indicates that the majority of the respondents (96.7%) have adopted electronic commerce in their businesses. Related to this, is the ways in which electronic commerce was used by the SMEs. Table 4.3 indicates that at least sixty percent of the respondents use electronic commerce for ticketing, marketing, hotel bookings, email, payments, advertising and Safari tours.

Ticketing had the highest response (70%) while marketing and payments had the least responses, 60% each. These findings are in line with the definition of electronic commerce given by Lerwongsatien and Wongpinunwatana (2003) who defined adoption of electronic commerce as a firm which has attained interactive, transactive or integrated status. However, it is noted from the findings that there is low use of electronic commerce in marketing. This implies that there is still a lot of growth opportunities for SME's to utilize electronic commerce for marketing themselves and their products.

**Table 4.3 Electronic Commerce Transactions by SMEs**

	Frequency	Percent
Ticketing	21	70.0
Marketing	18	60.0
Hotel booking	19	63.3
Safari Tours	20	66.7
Payments	18	60.0
Advertising	20	66.7
Emails	20	66.7

### 4.3 Leadership Support for Electronic Commerce

Table 4.4 indicates that 100% of the respondents reported that management's communication of operational changes to staff and active provision guidance were evident in the SMEs and that the management were committed to the adoption of electronic commerce. Communication of operational changes is in tandem with Durbin's (2004) explanation that leadership encompasses interpersonal influence directed through communication toward goal attainment.

Durbin further explains that this kind of influence goes beyond giving orders and directions by encouraging participation and inclusion of all members. Management commitment to the adoption of electronic commerce as a critical factor to the adoption of electronic commerce according to Umble (2003) boost its acceptance among employees and ensures support and championing of the project. On the contrary, one respondent reported that, some times changes are not communicated to staff, this is a shortcoming that could hinder the adoption of electronic commerce.

Delegation of responsibilities to employees and integration of their ideas was reported by 93.3% of the respondents while 96.7% of the respondents indicated that the management support influenced the perception of the employees to use electronic commerce in business. The ability to influence the employees' perceptions on the use electronic commerce in business transactions shows that leadership is offered by the SMEs' management. This is in line with Kim and Reene (1992) and Koontz (1984) description of leader's as the ability to influence others. Also adds that delegation of responsibilities and integration of employees are evidence for the leadership characteristics exhibited by the SMEs management as recorded by Cope and Wandell (2004).

From the above findings, it can be concluded that management support and leadership is crucial in adoption of electronic commerce. The above findings imply the development of strategic outlook in SMEs in order to cope with the changes that come with the adoption of electronic commerce. This is in line with Teo and Tan's (2003) argument that the adoption of electronic commerce results in changes in the organizations whose aim is to ensure participation and support.

**Table 1:4 Leadership Support for Electronic Commerce**

	Frequency	Percent
Does management delegate responsibilities to staff and incorporate their ideas?	28	93.3
Does the management communicate operational and changes to the staff?	30	100
In your view is management commitment necessary to the adoption of electronic?	30	100
From your assessment does management actively guide and motivate employee to adopt?	30	100
Does management support influence the perception of employees to usefulness of electronic commerce to the business?	29	96.7



### 4.5.2 Leadership Support for Electronic Commerce

Leadership is critical in the implementation of new programs. The respondents were asked to indicate the extent to which the adoption of electronic commerce is affected by leadership style on a five-likert scale of strongly disagree=1, disagree=2, neutral=3, agree=4 and strongly disagree=4. The results are presented in Table 4.5 below.

**Table 4.2 Mean Scores for Leadership in Electronic Commerce**

	Mean	Standard deviation
Focused leadership establishes conducive environment for adoption of electronic commerce.	4.4231	.50383
Leadership characteristics such as inclusiveness, risk taking, openness to change, commitment and ability to communicate determine adoption of electronic commerce.	4.3462	.56159
Leaders need to be enthusiastic, passionate and firm believers of the benefits of electronic commerce.	4.4800	.71414
Leaders expend the time and energy to shape vision and strategies for the adoption and use of electronic commerce and leveraged it into the business processes and activities.	4.2308	.81524
Effectiveness of electronic commerce is dependent on a development of a strategic plan that is adaptable to changing market trends.	4.4000	.95743

The findings show that leadership creation of conducive environment for the adoption of electronic commerce had a mean of 4.42 with significant standard deviation of 0.50. This means that the respondents' opinions were skewed to strongly agree. These findings imply leadership commitment to the adoption of electronic commerce. Chatterji (2002) explains that managements' belief about the benefits of electronic commerce compels them to spend time and resources in the establishment processes, and activities which would promote business environment.

There were two statements on leadership characteristics. A statement on inclusiveness, risk taking, openness to change, commitment and ability to communicate characteristics had a mean 4.34 while enthusiastic, passionate and firm believers of the benefits characteristics were rated higher with a mean of 4.5 these characteristics are in agreement with Lertwongsatien and Wongpinunwatana's (2003) characterization of a leader needed to spearhead change in an organization. This means that the leaders needed to lead change in other activities in the organizations are similar to those needed to lead in the adoption of electronic commerce.

In addition, the need to spend time shaping the vision and strategies for the adoption and use of electronic commerce and leveraging it into the business processes and activities had a mean of 4.23 while the development of strategic plans that is adaptable to changing market trends were reported to influence the adoption of electronic commerce with a mean of 4.40. According to Rashid and Al-quirim (2001), there is need to combine management and leadership in the implementation of electronic commerce. The statement on the vision shaping and development of strategic plans represent leadership and management roles respectively. This means that in the adoption of electronic commerce among the SMEs there is a mix of leadership and management in the implementation cycle. All the rated statements means greater than 4 with an average of 4.26 indicating that leadership play a significant role in the adoption of electronic commerce. All these factors had significant standard deviation greater than 0.5. From these factors, development of a strategic plan that is adoptable was the most significant standard deviation.

### 4.6.1 Resources of the Enterprise

Table 4.6 indicates that, all the respondents unanimously reported that resource availability affect the adoption of electronic commerce. However, the availability of resources required in the adoption of electronic commerce was reported to be adequate by 80% of the respondents. Table 4.7, indicates that 10% of the respondents cited financial constraints experienced by firms as a hindrance to the adoption of electronic commerce.

Table 4.7 also indicates that 3.3% of the respondents explained that failure to include the adoption of electronic commerce in organization budget was reported as another challenge faced in the adoption of electronic commerce.

Another 3.3% of the respondents explained that the adoption of electronic commerce requires time and accumulation of resources to ensure adoption in all management levels and processes. This means that as much as resource availability is a key factor, the adoption of electronic commerce could be handicapped by limited resource availability.

These findings are supported by Rashid and Al-Qirim's (2001) argument that SMEs find the adoption of electronic commerce important hence the need to include them as budget items and set aside resources to support it. However, Thong and Yap (1995b) explain that electronic commerce adoption is hindered by the lack of sufficient resources.

Table 4.6 also indicates that majority of the respondents (86.7%), explained that the adoption of electronic commerce was centred on its ability to reduce costs or the need by organizations to increase profits. This response was supported by the findings presented in Table 4.7 which indicate that 16.7% of the respondents viewed electronic commerce's aim was cost reduction because it improves efficiency. However, 3.3% of the respondents differed with the arguments explaining that there were other factors which influenced the adoption of electronic commerce.

The cost reduction by electronic commerce according to McIvor and Humphreys (2004), are costs associated with initiation, negotiation and enforcement of contracts referred to as external costs. Internet use in this processes results in cost reduction. This finding is in line with Ling's (2001) presupposition that businesses adopt electronic commerce only if the benefits outweigh the costs of developing and maintaining the system. In this case when costs are reduced it implies an increase in profit, however the profits must exceed cost reduction and cost of the development and maintenance.

Similarly, the findings presented in Table 4.6 indicates that 90% of the majority of respondents indicated that human, technological and cultural factors were determinants in the adoption of electronic commerce while effect of the change in management style was reported by 80% of the respondents. Table 4.7 indicates that adoption of electronic commerce is a purely management strategy reported by 3.3% of the respondents while the argument that human and technological factors play a major role in the adoption of electronic commerce however, the effect of cultural factors was reported to be limited was reported by 3.3% of the respondents.

This is in line with (Rashid & Al-Qirim, 2001) financial, human and technology resources play a very important role in the adoption of electronic commerce. In the case of SMEs in particular, even if the managers perceive the adoption of new technologies and electronic commerce as important, the enterprises often do not have sufficient resources to adopt them (Thong & Yap, 1995b).

**Table 3:6 Resource availability and for Electronic Commerce Adoption**

	Frequency	Percent
Availability of resources affect the adoption of electronic commerce	30	100.0
Adoption of electronic commerce is dependent on cost reduction or the need to increase profit	26	86.7
Availability of adequate resources to adopt electronic commerce	20	80.0
Human, technological, and cultural factors determine the adoption and subsequent institutionalization of electronic commerce	27	90.0
Changes in the management and organizational structure affect the adoption of electronic commerce?	24	80.0

**Table 4.7 Reasons for Resource Availability Effect on Electronic Commerce Adoption**

	Frequency	Percent
Lack of finances	4	16.7
Electronic commerce in the budget	1	3.3
There are other factors that influence the adoption of electronic commerce other than cost reduction	1	5
Human and technological factors play a major role but the effect of cultural factors is limited electronic commerce	1	3.3
Management style and structure has no effect it is purely a management strategy	1	3.3

Results in Table 4.8 were from the five-likert scale of strongly disagree=1, disagree=2, neutral=3, agree=4 and strongly disagree=4. The findings agree with Rashid and Qirim (2001) that financial, human and technological resources affected the adoption of electronic commerce to a great extent with mean of 4.41 and 4.46 with significant standard deviations respectively. Budget constraints also had a mean of 4.5 with significant standard deviation. Management and organizational structure were also reported to of great influence on the adoption of electronic commerce shown by a mean of 4.1. These findings are consistent with the findings presented in Table 4.6 and 4.7.

**Table 4.8: Resource Availability and Electronic Commerce**

	N	Mean	Std. Deviation
Financial, human and technological resources play important role in the adoption of electronic commerce	29	4.4138	.56803
Financial, human and technological resources constraints often cause SMEs to lag behind in the use of ecommerce	30	4.4667	.50742
Budget constraints determine the ability to invest in e-commerce	30	4.5000	.50855
Human and infrastructure resources related to the management and organizational changes required for adopting e-commerce	29	4.1034	1.01224
Valid N (listwise)	28		

#### 4.7 Infrastructure Issues

All the respondents unanimously agreed that availability of electronic infrastructure constituents were computer hardware and software, servers, routers, network technologies and human capital. The unanimous agreement followed through to another three factors: the establishment of competitive electronic infrastructure, standards and applications environment is essential for adoption and implementation of electronic commerce, laws and regulations affect the adoption of electronic commerce and the price and availability of infrastructure tools and other communication services on the type of technology adopted. The findings are also supported by Rashid and Al Qirim (2001). Technology infrastructure was reported by 96.7% of the respondents to influence the adoption of electronic commerce. This means that the type, cost and availability of infrastructure significantly affect the adoption of electronic commerce. This is because infrastructure supports electronic commerce processes and activities (McIvor & Humphreys, 2004).

The above findings are congruent to Ling (2001) and Chiochan (2000) who found out that the infrastructure of a country positive influences the adoption of electronic commerce. Also understanding technology infrastructure in terms of the available and lacking components reported to be essential to formulating travel and tourism's vision and strategy also support the above finding (Wang & Cheung, 2004). This is because if electronic commerce is adopted by enterprises availability of some underlying capacities is required to be present and if absent there should be an existing supplier capacity (Lawson, Alcock, Cooper & Burgess, 2001).

The effect of infrastructure, broadband connections availability and reliability, and cost of telecommunication influence the adoption of electronic commerce (OECD, 2001b) shows the means of these variables which each was at least 4.20 and standard deviations of at least 0.506. Also the creation of supply chains and good technological support and a sound infrastructure support the uptake of economic commerce (Wresch, 2003) . These findings are consistent with the earlier findings on the infrastructure and electronic commerce presented in table 4.9.

**Table 4.9 Infrastructure and Electronic Commerce**

	N	Mean	Std. Deviation
Efficient ICT infrastructure is a requisite for the adoption of electronic commerce	29	4.5517	.50612
Good technology support and a sound physical infrastructure, is necessary, though not sufficient, condition for electronic commerce uptake of SMEs	29	3.9310	1.03272
Availability of broadband connections affect SMEs' decisions to adopt electronic commerce	29	4.2069	.55929
Electronic commerce adoption determine the creation of new local, regional and international supply chains and markets	30	4.3000	.74971
Reliability and cost of telecommunication services and equipment determine the adoption of electronic commerce	30	4.3333	.71116
Valid N (listwise)	28		

#### 4.8 Competition and Electronic Commerce

Figure 4.3 below indicates that, 100% of the respondents reported that competition influences the adoption of electronic commerce, and the adoption of new technologies by SMEs. This means that competition significantly influences the adoption electronic commerce. This finding is supported by Lertwongsatien and Wongpinunwatana's (2003) findings that there is a direct relationship between the intensity of competition in an industry and the degree of adoption of electronic commerce. This finding is also contrary to Thong's (1999) findings which reports that competition influences very little in small enterprises. This difference could be due to the technological advancement that has been realized between the time of this study and Thong's. Also, a unanimous response also prevailed on the determination of the uptake of electronic commerce by the creation of new local, regional and international supply chain markets. This finding is in tandem with Looi's (2005) explanation that the existence of ICT infrastructure, standards and application that support many internal transactions creates a good environment for the adoption of ICT. This is because infrastructure has a direct relationship with the development and implementation of new programs and technologies (Ling, 2001).

In addition, Kinyanjui and McCormick (2002) explain that competition and new entrants to the market to a business is an ongoing policy priority. Therefore, the creation of new supply chains determines the uptake of electronic commerce since it ensures capacity in the supply of the needed infrastructure. On the contrary, SMEs' participation in the supply chain and markets may result in conflict in the existing established channels and market structures resulting in competition (Auger, BarNir & Gallagher, 2003). Competition in this context can either be aimed at maintaining the established channels by refraining from new channels or defence of both the new and the established channels. Depending on the ability of the SMEs to compete if the competition is in line with the uptake of electronic commerce, this would imply that the established Tour and Travel firms will outdo the SMEs resulting in the reduced growth rate and consequently the adoption of electronic commerce will be slowed down.

Faster and more reliable electronic communication increase SMEs adaptability to changes in the market and the production cost reduction and increase in economies of scale resulting from the use of electronic commerce lowers costs of production and increases economies of scale were each reported by 96.7%. These findings are in line with OECD (2001b) argument that the slow Internet connection and data transfer discourages users. This means that speed and reliability are accrued to the usage of SMEs in carrying out business transactions. Also, the findings imply that cost reduction and creation of business opportunities by electronic commerce are the point of attraction to its adoption. OECD (2000) explains that competition in the telecommunication industry has been driving down access cost. This implies that the usage of electronic commerce by SMEs indicated in earlier findings is as a result of the reduced access costs.

Other factors related to competition that influence the uptake of electronic commerce that are structure of the company, innovation and product positioning which were reported by 6.7% and 3.3% of the respondents respectively.

**Table 4.10 Total Variance Explained on the Factors that Affect the Adoption of Electronic Commerce Results**

Component	Initial Eigenvalues			Extraction Sums of Squared			Rotation Sums of Squared		
	Total	% of	Cumulative	Total	% of	Cumulative	Total	% of	Cumulative
		Variance	%		Variance	%		Variance	%
1	7.123	37.489	37.489	7.123	37.489	37.489	5.222	27.484	27.484
2	4.222	22.220	59.709	4.222	22.220	59.709	3.495	18.397	45.881
3	2.727	14.355	74.064	2.727	14.355	74.064	2.929	15.418	61.299
4	1.442	7.588	81.652	1.442	7.588	81.652	2.853	15.017	76.316
5	1.123	5.911	87.563	1.123	5.911	87.563	2.137	11.247	87.563
6	.902	4.746	92.309						
7	.727	3.828	96.137						
8	.407	2.143	98.280						
9	.236	1.241	99.521						
10	.091	.479	100.000						
11	.000	.000	100.000						
12	.000	.000	100.000						
13	.000	.000	100.000						
14	.000	.000	100.000						
15	.000	.000	100.000						
16	.000	.000	100.000						
17	.000	.000	100.000						
18	.000	.000	100.000						
19	.000	.000	100.000						

Extraction Method: Principal Component Analysis.

The Rotation matrix enables identification of the factors that were extracted. As highlighted in the table above, five (5) factors that affect the adoption of electronic commerce among small and medium enterprises (SMEs) in Tours and Travel firms in Nairobi were identified as follows:

Factor/Component one: The first component consisted of leadership characteristics, conducive business environment for the implementation of electronic commerce. This can be explained by leadership characteristics of leaders. Through their leadership, conducive business environment for adoption of electronic commerce were established and strategic plans that are adoptable to changing market trends were developed also supported by Teo and Tan (2002). Leadership characteristics such as inclusiveness, risk taking, openness to change, commitment and ability to communicate determine adoption of electronic commerce in tandem with Cope and Waddel (2004). Effectiveness of electronic commerce is dependent on a development of a strategic plan that is adaptable to changing market trends. Leaders expend the time and energy to shape vision and strategies for the adoption and use of electronic commerce and leveraged it into the business processes and activities.

Factor/Component Two: 2 can be described by the following 4 components: Electronic commerce requires a substantial hardware, software and networks IT services in line with Teo and Pian (2004). Human and infrastructure resources related to the management and organizational changes required for adopting new electronic business strategies. Reliability and cost of telecommunication services and equipment determine the adoption of electronic commerce and exposure to information technology affects the utilization of electronic commerce in SMEs also supported by Wresch (2003).

Factor/Component 3: Infrastructure. Availability of required infrastructure is the third component which is explained by: The use of ICT increases the competitiveness of SMEs as they enable the creation of more flexible links with trading partners because of faster and more reliable communication channels. Good technological support and a sound physical infrastructure, is a necessary, though not a sufficient, condition for electronic commerce uptake of SMEs in tandem with Tan and Teo (2000). Availability of broadband connections may affect SMEs' decisions to adopt electronic commerce. Budget constraints determine ability to invest in electronic commerce.

Factor/Component 4: Competition. It is composed of the following 3 components;

Internet commerce provides SMEs with new opportunities to participate in new supply chains and markets, thus competing with established channels and established market structures this also according to Auger, Barnur and Gallagher (2003). Efficient ICT infrastructure is requisite for adoption of electronic commerce, and financial, technological and human resources constraints often cause SMEs to lag behind in using electronic commerce.

Factor/Component 5: Technological positioning: The adoption of new technology enables businesses to increase market share and ensure business sustainability. This factor is explained by: Electronic commerce helps to properly position a product thereby stimulating demand on the part of the potential customers also acknowledged by Epstien (2005). Financial, human and technology resources play a very important role in the adoption of electronic commerce. Intensity of competition is measured by the number of SMEs that have adopted the use of electronic commerce in their enterprises.

## **5. Discussions**

Of all of the four firms surveyed have adopted the use of electronic commerce in their business transactions in Hotel Booking, Safari Tours, Emails and Advertising. However, it is noted from the findings that there is low use of electronic commerce in marketing. This implies that there is still a lot of growth opportunities for SME's to utilize electronic commerce for marketing themselves and their products. Leaders among SMEs management were reported to be inclusive, risk taking, open to change, committed and able to communicate in line with Cope and Waddell (2004). The leadership also spent time shaping the vision and strategies for the adoption and use of electronic commerce and leveraging it into the business processes and activities. These activities and characteristics influenced the adoption of electronic commerce. Resources play important role in the adoption of electronic commerce however; their limited availability hindered the adoption of electronic commerce. Financial constraints experienced by SMEs limits the realization of electronic commerce adoption by SMEs supported by Huy and Filiatrault (2006). Failure to budget for the costs associated in the adoption of electronic commerce accounted for the limited availability of funds needed in the adoption of electronic commerce. Also the adoption of electronic commerce among the SMEs was based on the ability to reduce operations costs and increase profit. The effect of infrastructure, broadband connections availability and reliability, and cost of telecommunication influence the adoption of electronic commerce. In addition, the creation of supply chains and good technological support and a sound infrastructure support the uptake of economic commerce. Internet commerce provides SMEs with new opportunities to participate in new supply chains and markets, thus competing with established channels and established market structures, hence a boost to withstand competition. Other than the four studied variables, the study established a fifth factor; innovation and product positioning as an influence to the uptake of electronic commerce. Positioning electronic commerce helps to properly position a product thereby stimulating demand on the part of the potential customers.

### **5.2 Area for Further Studies**

This study identified a fifth factor named positioning. A study should done to establish the extent to which positioning affects adoption of electronic commerce.

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