EFFECTS OF ENTERPRISE RESOURCE FACTORS ON THE LEVEL OF ADOPTION OF E-COMMERCE STRATEGY AMONG SMALL AND MEDIUM ENTERPRISES IN KERICHO COUNTY - KENYA

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A Thesis submitted to the Institute of Post Graduate Studies and Research in fulfillment of the requirement for the award of the Degree of Doctor of Philosophy in Business Administration (Strategic Management) of Kabarak University

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DECLARATION

I, Bii Kiplang'at John, declare that the Thesis *Effects of Enterprise Resource Factors on the Level of Adoption of E-Commerce Strategy among Small and Medium Enterprises in Kericho County- Kenya,* is my original work and has not been presented for a degree in any other University.

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RECOMMENDATION

This Thesis has been submitted for examination with our approval as University supervisors

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DEDICATION

This Thesis is dedicated to my Family, Parents, Friends and all my well-wishers.

ABSTRACT

The study focused on the effects of Enterprise Resource Factors on the level of adoption of E-commerce Strategy among Small and Medium Enterprises in Kericho County, Kenya. Electronic Commerce is a general concept covering any form of business transaction or information exchange conducted using Information and Communication Technologies (ICT).This phenomenon has been a major challenge for Small and Medium Enterprises given the fast advancement and the ever-growing ICT development throughout the World. SMEs can obtain a wide range of benefits from the use of ICT/e -commerce in the areas of productivity, adoption of new organizational Strategic and Managerial models, enabling access to new environments as well as the generation of new markets and business models. SMEs like larger organizations deploy Human, Financial, Marketing and Technological resources in order to gain competitiveness, improve profitability, growth and generally realign to changes in the internal and external business environments. The study sought to determine the effects of Enterprise Resource factors such as Finance, Technology, Marketing and Human Resources, on the level of adoption of E-commerce strategy among Small and Medium Enterprises (SMEs) in Kericho, Kenya. It is anchored on the Epistemological Philosophy which considers theories of knowledge concerning "…what we can know and how we can know them". The study addresses gaps identified in past related studies. Kenyan SMEs have been documented as high in employment creation yet low in their contribution towards the Gross Domestic Product (GDP).The established empirical knowledge gap therefore inhibit a comprehensive understanding and well informed Strategy and policy making by the SME owners, the County and National Governments. The target population of the study comprised of Small and Medium Enterprises in Kericho County. The theory underpinning the study is the Resource Based View theory with other theories being the Transporter theoretical model, the Adoption Ladder theoretical Model and the E-Channel Utilization in Micro-firms theory. Stratified random sampling method was used alongside systematic sampling covering a sample of 323 SMEs. Questionnaires were used to collect primary data and later analyzed using SPSS. Descriptive and Inferential statistics were used to analyze the data, establish the relationships between the variables and draw conclusions. The findings of the study show that there is a positive relationship between Enterprise resource factors of marketing, technology and human resources on levels of E-commerce adoption. The study recommends support in SME strategy and policy development to reduce cost of ICT hardware and software, support in enabling SMEs access affordable ICT equipment , funding facilitation to enable the purchase of ICT equipment, training of SME owners and their employees and the establishment of internet hotspots for ease of access to the Internet by SMEs. Suggestions are proposed for further research in various areas including the challenges faced by SMEs in the Counties in the use of Electronic Commerce especially in particular enterprise types.

Key words: Kenya, Small and Medium Enterprises, E-commerce, Enterprise Resources, Information Communications Technology.

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LIST OF ABBREVIATIONS AND ACRONYMS

AIDS	-	Acquired Immune Deficiency Syndrome
APEC	-	Asia Pacific Economic Cooperation
BPO	-	Business Process Outsourcing
B2B	-	Business to Business
B2C	-	Business to Consumer
B2G	-	Business to Government
C2C	-	Consumer to Consumer
CEO	-	Chief Executive Officer
CRMs	-	Customer Relationship Management Systems
CUTS	-	Consumer and Unity Trust International
DTI	-	Department of Trade and Industry
EDI	-	Electronic Data Interchange
EC	-	E-Commerce
ERP	-	Enterprise Resource Planning
GDP	-	Gross Domestic Product
HIV	-	Human Immunodeficiency Virus
HTTP	-	Hyper Text Transfer Protocol
HTML	-	Hyper Text Markup Language
ICT	-	Information and Communications Technology
IP	-	Internet Protocol
IPR	-	Intellectual Property Rights
KMS	-	Knowledge Management Systems
KMO	-	Kaiser-Meyer-Olkin
MDGs	-	Millennium Development Goals

MSMES	-	Micro Small and Medium Enterprises
NACOSTI	-	National Commission for Science Technology and Innovation
NRI	-	Networked Readiness Index
OECD	-	Organization for Economic Co-operation and Development
PWC	-	Price Waterhouse Coopers
QOS	-	Quality of Service
RBV	-	Resource Based View theory
SADC	-	Southern African Development Cooperation
SCM	-	Supply Chain Management system
SMEs	-	Small and Medium Enterprises
SPSS	-	Statistical Package for Social Sciences
SDGs	-	Sustainable Development Goals
TAM	-	Technology Acceptance Model
TNCs	-	Trans National Corporations
TCP/IP	-	Transmission Control Protocol/Internet Protocol
UN	-	United Nations
WTO	-	World Trade Organization

OPERATIONAL DEFINITION OF TERMS

Enterprise Resource Factors

For purposes of the study Enterprise Resource factors encompass technological resources, financial resources, human resource factors and the Enterprises' marketing efforts/resources.

E-Commerce

In this study E-commerce refers to any form of business transaction or information exchange executed using information and communication Technologies (Whitely 1998). It involves buying and selling over the Internet and transferring or exchanging products/services and/or information via computer networks, including the Internet, Extranet and Intranet (Turban et al., 2006).

Financial Resource Factors

In this study, a financial resource refers to the status of Government funding, budgeting, firm's financial resources, loans, grants and disbursement priorities within the firm.

Human Resource Factors

In the present study, human resource factors shall refer to ICT competencies/knowledge among Managers and employees, readiness to adopt and use ecommerce, attitude towards ICT and innovativeness; their commitment to E-commerce adoption, managerial attitudes to new technology and risk, resource allocation and e-commerce projects' prioritization and level of training in ICT by employees at various levels e.g. Certificate, Diploma, Graduate, Post graduate etc. In the present study, leadership behavior which is a Human resource factor is deemed to be directly related to successful strategy implementation.

Information and Communications Technology (ICT)

Any technology that enables communication and the electronic capturing, processing and transmission of information. These technologies include products and services such as desktop computers, laptops, handheld devices, wired or wireless intranet, business productivity software such as text editor and spread sheet, enterprise software, data storage and security, network security and so on (Ashrafi and Murtaza, 2008).

Level of E-commerce Adoption Strategy

For the purposes of this study Level of E-Commerce adoption strategy will adopt the meaning of the Adoption Ladder model as developed by Martin and Matlay (2001) and Taylor and Murphy (2004) as it is used by the UK government's Department of Trade and Industry (DTI). The levels of ICT adoption in the model, suggest that involvement of enterprises with the technology of e-business is sequential and progressive (Taylor and Murphy 2004: 283).

Level of E-commerce adoption strategy in the present study therefore refers to the level of use of e-mail, online shopping, e-selling and e-purchasing, online retailing, e-travelling, e-procurement, online banking, online investing and mobile electronic transactions such as MPESA (Martin and Matlay, 2001; Taylor and Murphy, 2004)

Marketing Resource Factors

Marketing resource factors in the present study refer to a firm's overall marketing effort and specifically, the use of internet advertising, ownership of interactive websites, online product sales and online customer care/interaction and use of ICT systems in marketing research and data management.

Small and Medium Enterprises (SMEs)

In this study, SMEs are defined in accordance with the MSE Act 2012. In a Kenyan context, SMEs (referred to as Micro Small and Medium Enterprises (MSMEs) in the

Act), are made up of Micro and Small enterprises and are legally recognized in the MSE Act 2012 in which a Micro Enterprise is a business that has less than Ksh.5million invested in it, or has sales of less than Ksh.500, 000 a year, or has 1 – 9 people working in it. A Small Enterprise is a business that has sales of between Ksh.500, 000 – Ksh.1million a year, or has 10–50 people working in it (MSE Act 2012).In this study the term Small and Medium Enterprises(SME) is used to cover the meaning espoused in the MSMEs Act 2012.

Technological Resource Factors:

In the present study, technological resource factors refer to ICT infrastructure and hardware, current ICT use, their cost, perceived benefits and pressure for globalization and internationalization to expand ICT usage and adopt E-commerce.

CHAPTER ONE

INTRODUCTION

1.0 Overview of the chapter

The present study sought to establish the effects of Enterprise resource factors on levels of E-Commerce adoption strategy among Small and Medium Enterprises in Kericho County, Kenya. The chapter begins with a conceptual discussion and attempts to relate the variables of the study. It provides a brief description of the theoretical anchorage and consequently discusses Electronic Commerce (E-commerce) and its adoption by SMEs together with the strategic value and benefits. This is in an attempt to provide a preview of the dependent variable under scrutiny in the present study. This is followed by a contextual discussion including SMEs in Kericho County and why the SMEs formed the basis of the study.

The wider context of the global development agenda (Sustainable Development Goals), is introduced to provide a world development perspective. Consequently, an outline of the Global development agenda is discussed alongside Kenya's plan to contribute to its goals through the three pillars of Vision 2030 national plan. The Economic Pillar of Kenya's Vision 2030 is singled out as a crucial driver of growth and development and so are its Small and Medium Enterprise (SMEs) component which is part of the context of the study. Information and Communications Technology (ICT) phenomenon is introduced as an enabler of E-commerce together with its attendant role in the development and growth of SMEs. Subsequently, the statement of the research problem, objectives of the study, research questions, hypotheses, justification, and scope of the study follow. The chapter closes with an outline of the structure of the entire Thesis which introduces the reader to chapter headings and their summaries and conclusions.

1.1 Background of the Study

Notable among the key enablers of growth and development of SMEs is the proliferation of Information and Communications Technology (ICT).According to Ashrafi and Murtaza (2008),

ICT refers to any technology that enables communication and the electronic capturing, processing and transmission of information. In line with their explanation, ICT technologies include products and services such as desktop computers, laptops, handheld devices, wired or wireless intranet, business productivity software such as text editor and spread sheet, enterprise software, data storage and security, network security and so on.

E-commerce which is an essential component of ICT and its deployment by large firms, have grown in tandem with the general growth of ICT usage in other fields. E-commerce can be referred to (according to Whitely 1998: 1), as "…a general concept covering any form of business transaction or information exchange executed using information and communication technologies" E-commerce being an essential component of ICT and its deployment by large firms, have grown in more or less the same pace with the general growth of ICT usage in other fields.

E-Commerce can be referred to as "…a general concept covering any form of business transaction or information exchange executed using information and communication technologies" (Whitely 1998:1). Barba-Sanchez *et. al.,* (2007) note that a major challenge for SMEs has been the exploding advancement and the ever-growing ICT development within the past few decades. Further, SMEs can obtain a wide range of benefits from the use of ICT in the areas of productivity, adoption of new organizational, strategic and managerial models, enable the access to new environments as well as the generation of new markets and business models and the improvement of the qualification and specialization of Human resources, which increases their efficiency and efficacy within the SMEs.

There are generally five modes. These modes are: Business to Business (B2B), Business to Consumer (B2C), Consumer to Consumer (C2C), Business to Government,(B2G) and Business Process. E-commerce is not only limited to buying and selling over the Internet but it is also concerned with transferring or exchanging products/services and/or information via computer networks, including the Internet, Extranet and Intranet (Turban et al. 2006). It includes activities such as servicing customers online, collaborating with business partners and exchanging business documents within an organization over the Internet or other private networks. Because of its broad coverage, E-commerce is often referred to as e-business (Barness and Hunt 2001). According to Gunrathe (1997), E-Commerce provides unique opportunities for developing countries to compete in the world economy.

ICT and E-commerce offer benefits for a wide range of business processes. At firm level, ICT and its applications can make communication within the firm faster and make the management of the firm's resources more efficient. Seamless transfer of information through shared electronic files and networked computers increases the efficiency of business processes such as documentation, data processing and other back-office functions (*e.g.* organizing incoming orders and preparing invoices).

As noted by Hashim and Noor (2014) in a study carried out in Malaysia when the internet began to be used commercially in business and in Electronic commerce, it became extremely important, particularly in business and management. It has been suggested that SMEs may adopt e-commerce because of the immense benefits accruing, (Poon and Jevons, 1997; Daniel *et al.*, 2003; Martin and Matlay, 2003). These benefits include SMEs being able to sell 24 hours a day, and seven days a week (Martin and Matlay, 2003). Increasingly sophisticated ICT applications such as KMS (Knowledge Management System) and ERP (Enterprise Resource Planning) allow firms to store share and use their acquired knowledge and know-how. An example is where customer databases with a history of client-specific correspondence help managers and

employees to respond more effectively to customers. A company-wide electronic data source aims to disseminate employees' professional experience, for example tips for winning a contract, from which others in the firm may learn from, (Buhalis &Schertler, 1999).

This study therefore sought to examine the influences of Enterprise Resource factors on E-Commerce adoption which have a bearing on strategy analysis, formulation, support and guidance in the management of SMEs given their crucial role in contributing to Economic development. It is noteworthy that SMEs in Kenya provide 80% employment (Economic survey, 2013) lending heavy credence to the view that the sector plays a Strategic role in the growth of Kenya's economy. Agwu, (2014), while discussing findings of a study of E-commerce among Nigerian SMEs observes that E-commerce can be an extremely beneficial tool among Nigerian SMEs provided that the identified problems are dealt with by the relevant bodies and the government demonstrates that they have the political will to address the barriers that currently stand in the way of widespread adoption. The findings of the Nigerian study have therefore provided a better understanding of the benefits and barriers of E-commerce. According to Agwu (2014),it has also stressed on the benefits which the SMEs can derive from its adoption and its overall impact on the Nigerian economy. The benefits therefore of any attempt to study the Enterprise factors affecting the adoption of E-Commerce among SMEs cannot be gainsaid and it is the position of the present study that SME growth and profitability can be enhanced through scientifically based research findings.

The main aim of the present study was to determine the effect of internal organizational resources on the adoption of E-commerce strategy among SMEs in Kericho County, Kenya. The present study considered Human, Technological, Marketing and Financial resources as the key variables. As noted by Shemi (2012), the unequal distribution of ICT infrastructure, products and services, between the developed and developing countries, or urban and rural SMEs also accounts for differences in how e-commerce is appreciated and applied in organizations.

According to Scupola, (2009), studies have shown that the availability of ICT resources in developed countries have contributed to their having an upper hand in adoption and assimilation of ICT innovation. In developing countries, ICT resources have been difficult to acquire. Shemi (2012), further notes that, it may be appreciated that e-commerce readiness studies provide indicators of what resources are required for organization but in most cases, the ICT or e-commerce readiness tools are merely artifacts that may not offer a direct influence to decision-making process related to e-commerce adoption. The study's theoretical anchorage is the Resource based theory of the firm, the Adoption Ladder Model, the Diffusion of Innovations theory and the Technology acceptance Model theory (TAM).

The present study was undertaken in Kericho County, Kenya which is situated to the South Western part of Kenya (see map in Appendix I). Kericho County covers a total area of 2,454.5 km^2 (947.7 sq miles) and has a population of 752,396 based on the 2009 population census. It forms the context of the study in terms of its SMEs which cut across Agribusiness, Education, Wholesale trade and retail, Transport and Health sectors in its Seven Sub counties. The County was formed in actualization of Kenya's Constitution 2010 which made provision for the establishment of 47 counties in Kenya. It came into being in the year 2013 with its main town being Kericho surrounded by other semi urban centres with a diverse range of SMEs in a rural/county setting .There are four constituencies namely Belgut, Ainamoi, Kipkelion and Bureti. As at June 2013, there were 10,074 registered SMEs in the County carrying out various business activities. The County formed an appropriate context of the study due to the need to have research based policies to support growth and development of SMEs in a rural/county setting and their use of E-Commerce. Most of the studies in E-commerce in Kenya are urban - based and tends to focus on Nairobi, Nakuru and Kisumu Counties, (Wanjau *et al* 2009; Mwangangi 2012,Ongori 2014).Convenience in terms of cost and proximity were part of the key factors considered.

1.1.1 History of E- Commerce

E- Commerce has grown in tandem with advances in the field of Information and Communications Technology (ICT). As defined, E-commerce is an aspect of ICT that utilizes the internet to facilitate business operations. As noted by Hashim and Noor (2014) in a study of SMEs in Malaysia, there are quite a number of e-commerce definitions available in the literature, yet there is no agreed definition of what E-commerce is (Kendall *et al.*, 2001; Daniel and Wilson, 2002). Zwass (1996) defines e-commerce as "…sharing of business information, maintaining business relationships and conducting business transactions by means of telecommunication networks", (Zwass, 1996:1). These are among the first and earlier definitions of Electronic Commerce. As cited by Shemi (2012)… the origin of e-commerce predates the Internet. Early development of e-commerce began in the early 1960s, although most applications associated with innovations surfaced around 1970s in form of electronic funds transfer (EFT) (Turban, King, Lee, & Viehland, 2004). Later, another innovation was introduced, known as Electronic Data Interchange (EDI), which allowed business transactions such as purchase orders or invoices to be passed electronically from one organization to another using standard procedures and documents (Turban et al., 2004; Papazoglou & Ribbers, 2006). The Internet, according to Senn (2004, p.86), is a network of computer networks which began in 1969 by the US government to facilitate academic and scientific research. The rapid evolution of the internet and its graphical component, the World Wide Web (Senn, 2004, p.86) in the 1990s and thereafter , enabled organizations to share and exchange information because it was more affordable than the previous medium of EDI (Turban *et al*., 2004).

In the year 2000, a dot.com crash was experienced whereby several US internet-based businesses collapsed, (Teo & Ranganathan, 2004). Since then, there has been emphasis amongst organisations, governments and practitioners, to try and find the best ways to employ ICT with minimum loss and failure of systems. The growth of e-commerce has however been seen to be

slower than anticipated earlier with B2B becoming more popular than B2C (Humphrey et al., 2003; Gibbs, Kraemer, & Dedrick, 2003).

The use of e-commerce has been very popular in the corporate world with large firms in developed countries harvesting the benefits while its development in small and medium-sized firms has been slow (Mac Gregor & Vrazalic, 2004). Currently E-Commerce is used across the world by large and small organizations. Agwu *et al.,* (2014) in a study carried out in Nigeria notes that some SME's use the internet for variety of commercial and product related purposes; on the average, they have limited understandings of the full range of benefits of electronic commerce. This lack of awareness of the great potential of e-commerce, he asserts, is one important barrier to its adoption. Furthermore, inadequate investment in skills and the relative high initial costs in setting up e-commerce strategies all form solid bedrock for the non-usage.

The advent of internet based electronic commerce offers considerable opportunities for firms to expand their customer base, enter new product markets, and rationalize their businesses. Agwu *et al.,* (2014) maintains that "Although problems of definitions and measurement of electronic commerce make it difficult to gauge the phenomenon, available data indicate impressive growth in the rate of adoption of the internet by small and medium scale industries in the developed countries such as the United Kingdom, USA, Canada, the wider EU, Australia and other emerging markets such as China, India, Brazil, Singapore, etc."

1.1.2 E- Commerce in Kenya

According to the 2009 census Kenya has a population of 38.6 million people. As a country in the East African region which acts as the regional centre in terms of finance and trade, its development is key not only for the benefit of Kenyans themselves but also for the region (2009 Census http://www.eac.int/statistics/). It is noteworthy that the population has now surpassed the 40 million mark. According to Kinuthia *et al*.,(2014) "…the fact that e-commerce or the exchange of products and services and payments through telecommunications systems is rapidly

expanding around the world, the capacity of the country to support e-commerce and the opportunities in this field can be said to be very important in determining the country's continued position as a regional focal point. It is therefore, important to examine the nature and magnitude of barriers militating against e-commerce adoption and diffusion in Kenya in its role as a regional leader for trade and finance in East Africa". The present study considers that based on the global networked readiness rankings (GITR, 2012), Kenya's ranking is 92 out of 144 countries. This ranking is based on the Networked readiness index 2014 an index that measures a country's readiness to operate internet based platforms. Internet penetration in Kenya now stands at 53.3% while Internet users increased to 21.6 million in 2014 compared to 21.2 million in the previous year. (Communications Authority of Kenya Quarterly Statistics Jan- March 2014). This is a phenomenon that cuts across all the Counties in Kenya and therefore signifies a concomitant spread in the utilization of internet based business transactions by SMEs. Technological factors and specifically IT infrastructure among SMEs is one of the key variables of the present study.

As noted by Kinuthia *et al*., (2014), the Government of Kenya recognizes that ICT offers enormous opportunity to exploit e-commerce and the importance ICT services play in economic, social and political spheres. As a result the Government prepared a National ICT Master Plan, covering the period 2008-2012, which outlines the roadmap and implementation strategy to make ICTs more accessible and affordable to the wider population and hence catapult Kenya into a knowledge and information society status. The country aims to establish itself, in the medium to long term, as the hub of industrial and financial activities in the East, Central and Southern African region (Government of Kenya, 2008).

The ICT Master Plan (2008-2012) aims to achieve the following objectives, Enhance Kenya's economic competitiveness through utilization of abundant human resources in Business Process Outsourcing (BPO), Develop a Knowledge-based society and thereby enhance the quality of life for ordinary citizens, Ensure universal access to ICT for sustainable development through Digital

Villages throughout the country, and Strengthen Kenya's learning opportunities and thereby develop capacity to meet future Technological challenges. (Government of Kenya, 2008).

In the ICT Master Plan the Government intends to operationalize and achieve the objectives stated by putting in place strategies such as, initiatives to ensure broadband is available at the most affordable cost to as many Kenyans as possible, development of digital content, leveraging on digital technologies to unlock new opportunities to do business and for the delivery of services and expanding infrastructure that will make Kenya the ICT hub for Africa. Developing rural ICT centers to ensure appreciation of technology throughout the country, aggressively reforming and enhancing ICT research and development in all institutions of higher learning through development of industrial incubation centres (Hardware and Software development) to ensure linkages between industry and the academia, and revamping and extending e-government services throughout the country to ensure exemplary service delivery to citizens are among the initiatives covered. Additionally encouraging ICT entrepreneurship by providing the necessary enabling environment for entrepreneurial growth; and allocating sufficient resources for human resource training and development for the ICT industry (with special emphasis on Business process outsourcing (BPO). (Government of Kenya 2008).

Of concern to the present study is the emphasis of the Master plan to expand ICT infrastructure throughout the country and not just in the Kenyan urban centres. The 'rural' emphasis is in line with the present study's context of being a county based study aimed at supporting E-Commerce usage by SMEs in the rural based counties in Kenya. By developing rural ICT centers the Master plan blends well with the present study's objectives, implications and suggestions for further research given that it supports ICT research to boost the linkage between industry and the academia.

Contained in a UN policy report - 2014 under the banner, "Can E-commerce facilitate the growth of small and medium-sized enterprises in Africa?" The United Nations espouse a position

close to the core of the present study regarding the strategic role played by E-commerce in developing rural based SMEs. As noted "benefits of strategic use of e-commerce in SMEs involves the sale or purchase of goods and services by businesses (business to business (B2B)), individuals (business to consumer (B2C)) and business to Government. "Electronic commerce, commonly known as e-commerce, is the buying and selling of products or services over electronic systems such as the Internet and other computer networks. It draws on such technologies as electronic funds transfer, supply chain management, Internet marketing, online transaction processing, electronic data interchange (EDI), inventory management systems, and automated data collection systems. Modern electronic commerce typically uses the World Wide Web(w.w.w.) at least at one point in the transaction's life cycle, although it may use a wider range of technologies, such as e-mail, mobile devices and telephones as well as government (B2G)) or other organizations, and it is conducted over computer networks. It builds on traditional commerce by adding the flexibility and speed offered by electronic communications (UN 2014). According to the UN report (2014) "This can facilitate efforts to enhance operations that lead to substantial cost savings, as well as increased competitiveness and efficiency through the redesign of traditional business methods". Both SMEs and large businesses have benefited from the adoption of e-commerce as indicated in different studies". Such benefits can be summarized into the following: lower transaction costs; reduction in advertising and promotion costs; rapid communication between buyers and sellers; ability to reach new customers; shortening the traditional supply chains, including minimizing transport obstacles and reducing delivery costs; and eliminating physical limitation of time and space.

The current 17 Sustainable Development Goals (SDGs) replaced the former 8 Millennium Development Goals. The goals espouse a global development position aimed at attaining a specific level of development worldwide by the year 2030. (United Nations 2015). The former goals had been officially established and ratified by all 193 United Nations member states and

at least 23 international organizations following the Millennium Summit of the United Nations in the year 2000(United Nations 2012). During the October 2015 Summit the same member states ratified the SDGs agenda. (United Nations 2015). Accordingly therefore, a certain pace of growth and development is imperative among the member states in order to enable them attain these goals which cut across issues of poverty and hunger, universal primary education, gender equality and empowering women, reducing child mortality rates, Improving maternal health, Combating HIV/AIDS, malaria, and other diseases, Ensuring environmental sustainability, and Developing a global partnership for development. Notable and related to this study among the current 17 SDGs, is goal number 9 which emphasizes aspects of Industry, Innovation and Infrastructure (United Nations 2015).

Kenya is a UN member state committed to the SDG's agenda, and in its own Vision 2030 development blue print, she has instituted National plans to make Kenya a newly industrializing, middle-income country providing a high quality life to all its citizens by the year 2030. Specifically, the vision seeks to execute through its three pillars namely Economic, Social and Political. The Economic pillar especially aims at achieving an annual economic growth rate of 10% and sustaining it to enable the country generate more resources to meet the SDGs and the Visions goals through the promotion of Tourism, Agriculture, Wholesale and retail trade, Manufacturing, Business Process outsourcing and Financial services. As noted by Kinuthia *et al.*, (2014) who quotes former President Mwai Kibaki during the launch of Vision 2030 in 2008, " ICTs would play a key and leading role in national development efforts, underpinning the recognition by the Government that efficient and adequate ICT infrastructure is a prerequisite for sustainable ICT sector growth". In his speech the former president raised concern that the current state of infrastructure is still a major hindrance to the country's full exploitation of the Economic, Social and Commercial potential of the sector, and to enable the achievement of universal ICT

access in every part of the country, various policy initiatives are being implemented to address the situation.

The present study sought to contribute to the growth of E-Commerce and invariably ICT growth through improving the understanding of the effect of enterprise resources in the deployment of E-Commerce strategies among SMEs in Kericho County- Kenya. In Kenya, economic activities operate across these sectors through large Trans-National Corporations (TNC's), locally owned large firms and Small and Medium enterprises (SMEs).

1.1.3 Small and Medium Enterprises in Kenya (SMEs)

According to Dalberg Global Development Advisors (2011), the term "SME" encompasses a broad spectrum of definitions and different organizations and countries set their own guidelines for defining SMEs, often based on headcount, sales or assets. Egypt defines micro enterprises as those with (1-4) workers, small enterprises with (5-14) workers, medium enterprises being those that have (15-49) workers. (Profile of SMEs in Egypt March 2003) Vietnam considers SMEs to have between 10 and 300 employees. The World Bank defines SMEs as those enterprises with a maximum of 300 employees, $15 million in annual revenue, and $15 million in assets. The Inter-American development bank, meanwhile, describe SMEs as having a maximum of 100 employees and less than $3 million in revenue. (Milken institute 2009).

In a Kenyan context, SMEs are made up of Micro and small enterprises and are legally recognized in the MSE Act 2012 .This act of Parliament defines a Micro Enterprise as business that has less than Ksh.5million invested in it, or has sales of less than Ksh.500,000 a year, or has 1 – 9 people working in it. A Small Enterprise is a business that has sales of between Ksh.500, 000 – Ksh.1million a year, or has 10–50 people working it. According to a Report on the support to SMEs in developing countries through financial Intermediaries by Dalberg Global Development Advisors (2011), the SME sector is the backbone of the economy in high-income countries, but is less developed in low-income countries. The Organization for Economic Co-operation and Development (OECD 2005) reports that more than 95% of enterprises in the OECD areas are SMEs. These enterprises which account for almost 60% of private sector employment, make a large contribution to innovation, and support regional development and social cohesion. The SME business sector development in Kenya has been identified as one of the key elements to Kenya's engine of growth (Sessional Paper No. 2 of 2005) and has become an issue of priority even though many SME(s) are struggling with the establishment and Management of business. According to a policy brief by the Consumer and Unity Trust

International(CUTS 2013), the importance of SMEs in Kenya was first recognized in the International Labour Organization report on 'Employment, Income and Equity in Kenya' in 1972.The report underscored SMEs as an engine for employment and income growth. SMEs create about 85 percent of Kenya's employment (African Economic Outlook, 2011 report).While the subsector constitutes close to 85 percent of employment; it only contributes about 20 percent of the total Gross Domestic Product (GDP). This scenario points towards a slow growing and less developed sector. This is in agreement with Kenya's economic survey 2012 that the informal sector which constituted 80.8 % of total employment created an additional 445.9 thousand jobs in the year 2012. (Economic survey 2012, Kenya National Bureau of Statistics).

In a study under the topic ," Enhancing market access in Kenyan SMEs using ICT" Kiveu and Ofafa (2013) aver that Small and Medium Enterprises (SMEs) are perceived as the engine of growth in Kenya because of their key role in economic development. The sector generates employment opportunities, provides goods and services and steers competition and innovation (KIPPRA, 2002). SMEs comprise about 75 % of all businesses, employ 4.6 million people (30%), accounts for 87% of new jobs created and contributes 18.4 % of the GDP. (GOK, 2009) The Kenyan Government considers the sector as the centre of industrial development and has hinged several development strategies on it (GOK, 2007).The sector however faces binding challenges that make it impractical for it to realize its full potential and deliver to the government's expectations. These challenges include limited market access, limited access to information, finances and technology and unfavorable policy and regulatory environment among others (GOK, 2005).The present study sought to determine the value of Finance ,Technology Marketing and Human resources in the deployment of Electronic commerce practices as part of the SMEs' strategy to gain competiveness, growth and profitability. Given the challenges cited by Kiveu *et a.l.,* (2013) undoubtedly aspects of market access, limited access to information,

finances, technology are issues which are addressed by the current study and recommendations are made touching on these areas.

In the UN policy report (2014) seeking to answer the question, "Can E-commerce facilitate the growth of small and medium-sized enterprises in Africa?" the authors state that in the last few years, the role of SMEs in economic development has grown in importance in Africa as the continent's economic transformation gained momentum. Many countries are directing their strategic development towards industrialization through the growth of the local SME sector. The importance of SMEs in development and poverty reduction cannot be overemphasized. These enterprises represent 99 per cent of all firms in developing countries, as well as play a significant role in creating employment opportunities. Examples of the share of SMEs in employment in Africa are 39 per cent in Malawi, 38 per cent in Kenya, 37 per cent in Zambia, 33 per cent in Côte d'Ivoire, 32 per cent in the United Republic of Tanzania, 21 per cent in South Africa, 20 per cent in Burundi, 19 per cent in Cameroon and 15 per cent in Zimbabwe. (United Nations policy brief 2014).

As noted by the Milken Institute (2009) "Among low-income countries, SMEs contribute just 18 percent of employment and 16 percent of GDP. If barriers to their growth were removed, SMEs would impact economic development by providing jobs and income, expanding the middle class, broadening the tax base and ultimately decreasing poverty levels". The present study recognizes this and seeks to contribute knowledge towards supporting the removal of the barriers cited and to promote economic development. The researcher's argument is that establishing a link between enterprise resources and E-Commerce adoption among SME would provide research based insights which would support policy development and growth among SMEs and subsequently enhance GDP contribution .Additionally the findings on the strength of Human, Technological, Financial and Marketing Resource factors in explaining E-Commerce adoption is bound to determine the aspects to be prioritized in reshaping policy among SMEs in Kericho- Kenya.

1.1.4 Enterprise Resource Factors

In as far as the study is concerned, Enterprise Resource Factors encompass Technological Resources, Financial Resources, Human Resource factors and the Enterprises' Marketing efforts/Resources. These resources held by the SMEs determine their growth; Financial resources would determine essentially the capacity of the firm to purchase equipment, pay for data bundles from internet service providers, employ and to retain highly skilled staff (Martin and Matlay 2005).

In a study among SME s in Nigeria Agwu (2014) cites the internal environment of an SME which includes size, resource availability, organizational culture and trained labour /skill as being among the determinants of E-Commerce adoption. As outlined in his study "……most of the businesses are simple self employed and family businesses. Sizes and resources determine the usage or non-usage of computers in the various businesses. Citing responses from one of his respondents Agwu (2014) explains that , a boutique owner clearly stated that there was no need for a computer as stocks are taken every morning and evening. However, this was in contrast to the views of participant 27, with a chain of motor spare parts. Computers are widely used in both selling and tracking of sales as well as stock-taking. It was also discovered that some organizations lack the requisite skill for the operation of computers.

Accordingly, it is the position of the present study that internal organizational resource aspects of Finance, Technology, Human and Marketing resources determine E-Commerce usage and adoption. While studying the determinant factors of e-commerce adoption by SMES in Indonesia, Rahayua and Daya (2015) found that the organizational context refers to the characteristics of the firm that might influence the adoption of e-commerce technology. According to them, technology readiness is one of the organizational contexts proposed in this study as a determining factor which influences SME's in adopting e-commerce. Technology readiness refers to the extent the technology infrastructure, relevant systems and technical skills

in business can support e-commerce adoption (Zhu *et al.*, 2006). Technology readiness consists of both technology infrastructure and it human resources (Zhu & Kraemer, 2005) and both are needed if the company wants to make e-business an integral part of the value chain (Tiago & Maria, 2010). As a consequence therefore, the greater the technology readiness of an organization the more likely the organization adopts it further and vice versa. Another factor in organizational context among Indonesian SMEs which is identified as a determining factor of e-commerce adoption by SMES is firm size. This is because firm size is related to the ability of business to provide certain resources, both financial and human resources. The larger the size of business means the greater its ability to provide certain resources, and the more likely the adoption of e-commerce technology. (Rahayua and Daya2015)

Further Financial Resources would determine the location of business premises, advertising methods and generally have an effect on the level of adoption of E-Commerce by SMEs

It is the present study's argument therefore that E-Commerce adoption strategy is determined by the resources held by the Small and Medium enterprise; the particular influences are statistically measured by the indicators shown in the Conceptual framework and whose findings are later discussed, Conclusions drawn and Recommendations made.

1.1.5 E- Commerce Adoption Strategy

Pires and Aisbett (2003) define business strategy as "a long term plan of action designed to achieve a particular goal or set of goals or objectives " it will be measured in terms of internal factors, market factors and competitive factors. According to them a Business Strategy is a planning process within the organizational context directly linked to the organizational success as it was considered one of the main dimensions that directly determine the success or failure of a project (Pires and Aisbett 2003). According to Ambler (2003) the aim of the planning stage is assuring a high efficiency and effectiveness in the following factors: Quality, Cost, Schedule, Performance and Supportability.

According to Carnall (2007), managers face complex and challenging pressures and opportunities; they must ensure the effective use of resources and at the same time find ways of guaranteeing long term effectiveness of the organizations for which they work. Long-term planning often entails the application and use of Strategic initiatives to enable a firm's operations to remain efficient and remain relevant in an ever changing environmental context.

Pearce II J. A *et al.,* (2009), note that "Strategic Management is an arm of management which ensures that an objective based responsive approach is defined as a set of decisions and actions that result in the formulation and implementation of plans designed to achieve a company or organization's long and short term objectives". Strategic planning therefore relates to the process whereby organizations, including SMEs, lay out their expected projections into the future and the effective utilization of available resources in order to facilitate growth, develop new products, increase productivity or adopt new Technology. From a study carried out on E-commerce adoption by SMEs in the Tourism sector in Kenya Wanjau *et al.,* (2012) state that leaders among SMEs management were reported to be inclusive, risk taking, open to change, committed and able to communicate. 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. SMEs therefore deploy E-Commerce Strategic initiatives in response to environmental challenges in order to grow and remain relevant in a competitive business environment. The Resource Based View theory, in explaining how a firm maintains a competitive advantage maintains that its resources must be valuable, inimitable, rare, non-tradable, non - substitutable and firm specific (Barney 1999 cited by Finney et al. 2004, Makadok 2001). As a strategy therefore, E-commerce adoption can avail electronic systems and resources in the firm that can accord the firm the qualities described by this theory as rare, valuable, inimitable, and non-tradable, non-substitutable and firm specific. As a consequence the organization or SME can gain a sustained competitive advantage.

1.1.6 SMEs and E- Commerce in Kericho County

According to the Kericho County Revenue office there were approximately 10,074 registered SMEs in the County by the year 2014.The present study was based in Kericho County due to the presence of a suitable number of SMEs, their rural setting, convenience in terms of cost and proximity and their use of Internet based business practices. Kericho County was therefore convenient for the study since it is among other rural based counties whose SMEs use the internet for business; suggestions have been made for similar studies in the rest of the counties bearing similar characteristics for comparison of results. Additionally the advent of devolution in Kenya require that resources are devolved; a phenomenon which affects all sectors including SME growth and development. Notably most studies in E-Commerce adoption have been carried out in Nairobi County (Wanjau *et al.,* 2009 and Mwangangi 2012). In a similar study in Botswana Shemi (2012) argues that SMEs in Botswana are chosen not for any special peculiarities but rather as a developing Southern African and land-locked country with social and economic characteristics that can provide a rich and unique dimension in e-commerce adoption Literature.

According to Mpofu *et al., (*2011), there is still little knowledge about SMEs and E-commerce in developing countries in comparison to developed countries and as such, this study assists in filling the gap. Another reason for situating Botswana for the study, Mpofu *et al.,* (2011) asserts ; is that as a resident of this country over the past ten years, the researcher had established a number of contacts with the industry and SME community that would provide easy access for research. The case of Botswana is congruent to that of the present study in that the researcher has interacted with the County and its SME environment for over ten years and so easy access for research purposes was guaranteed.

1.2 Statement of the Problem

As noted, ICT being a recent phenomenon, it is incumbent upon players in diverse fields to clearly understand the dynamics and the specific ways through which its proliferation can be harnessed for optimum growth and development. The research problem addressed by the present study is the lack of adequate research based, clear understanding of the effects of the resources held by the Small and Medium Enterprises in Kericho County-Kenya on the level of adoption of E- Commerce strategies. This is confirmed by Ochola (2013) who noted that little is known about both the e-commerce environment and the key factors affecting its adoption in developing countries such as Kenya. Most of the studies are carried out in other countries making it a challenge to implement their findings among Kenyan SMEs; where studies are available they relate to urban/city environments (Ochola 2013,Mwangangi *et al*., 2014,Mutua *et a.,l* 2013,Ongori 2014). As documented by the World Bank, SMEs in Kenya are ranked as major sources of employment while contributing dismally to GDP growth (World Bank statistics 2013). The poor contribution to the Country's GDP by SMEs implies a vicious cycle of slow growth and a poor source of wealth to the SME owners and their dependants. This leads to continued low standards of living among SME owners and low contribution towards poverty reduction. If left unattended extreme poverty and its attendant social problems like crime, poor health and low education levels will continue to thrive escalating the conditions already faced by SMEs.

Further, 'the status of e-commerce adoption in developing country SMEs has been scanty in scholarly Literature as confirmed by Shemi (2012) in a similar study in Botswana. As noted by Riemenschneider *et al*., (2003), a key area of concern in previous studies is the lack of detail on how e-commerce adoption in SMEs is undertaken as most researchers have used exploratory research methods such as surveys which lack depth and theoretical foundation. The essence of strategic intent in e-commerce adoption has been scarcely addressed in E-commerce adoption

Literature (Shemi 2012). As noted by Rahayua and Day (2015) "It cannot be denied that there have been studies conducted regarding e-commerce adoption by businesses, however most of these focus on large companies and in developed countries". Studies that focus on SMEs in developing countries are rarely found. Wanjau *et al.,* (2012), in a study on the adoption of e-commerce among Tour firms in Kenya, note that there are still a lot of growth opportunities for SMEs to utilize e-commerce for marketing themselves and their products. The foregoing therefore point to gaps in research based knowledge on the aspect of Enterprise Resources and E-Commerce adoption.

The present study as a result sought to create more understanding on the contribution made by Enterprise resources on the levels of adoption of E-Commerce strategy among SMEs in Kericho Kenya with a view to contributing to the gaps cited. Given the people linkage (Human Resource factors) among the enterprise resources, it is believed that based on the findings and upon their implementation the growth among SMEs as a consequence will contribute in addressing the revenue gap both among the SMEs and in the Country's GDP (World Bank statistics 2013). The problem among SMEs can be bridged through contributions made through empirical understanding of the particular roles played by Enterprise resources in the adoption of E-Commerce strategy among SMEs. Additionally, recent fast paced technological changes in the field of ICT, call for studies to fill the knowledge gap regarding the effects of External and Internal organizational factors in the adoption of E-Commerce strategies. (Barbar-Sanchez et. al 2007).

To contribute to efforts towards addressing the problem therefore, a detailed descriptive cross-sectional study was carried out to determine the effects of Enterprise Resource factors on the adoption levels of E-Commerce strategy among SMEs in Kericho County - Kenya. The findings of the study were intended to generally answer the questions; To what extent do Enterprise resource aspects of Finance, Technology, Marketing and Human Resources determine the

adoption of e-commerce strategy among SMEs in Kericho County-Kenya? What strategies need be put in place to improve E-commerce adoption practices among SMEs in Kericho- Kenya?

1.3 Objectives of the study

1.3.1 General Objective

The general objective of the study was to determine the effects of Enterprise Resource factors on the adoption levels of E-commerce strategy among SMEs in Kericho- Kenya.

1.3.2 Specific Objectives

The specific objectives of this study were;

i. To identify the effects of Financial Resources on the adoption levels of E-commerce strategy by Small and Medium Enterprises in Kericho, Kenya.
ii. To establish the effects of Enterprise Marketing Resources on the adoption levels of E-commerce strategy by Small and Medium Enterprises in Kericho, Kenya.
iii. To determine the effects of Human Resource factors on the adoption levels of E-commerce strategy by Small and Medium Enterprises in Kericho, Kenya.
iv. To explain how Technological resources affect the adoption levels of E-commerce strategy among Small and Medium Enterprises in Kericho-Kenya.

1.4 Research Hypotheses

To analyze how each of the criterion variables(independent) influence the response variable(dependent), the following null hypotheses were tested.

i. $H0_{1:}$ Financial Resource Factors have no statistically significant effect on the levels of adoption of E-commerce strategy by Small and Medium Enterprises (SMEs) in Kericho- Kenya.
ii. $H0_2$: Marketing Resource Factors have no statistically significant effect on the level of adoption of E-commerce strategy by SMEs in Kericho- Kenya.

iii. $H0_3$: Human Resource Factors have no statistically significant effect on the level of adoption of E-Commerce strategy by SMEs in Kericho- Kenya.

iv. $H0_4$: Technological Resource Factors have no statistically significant effect on the level of adoption of E-commerce strategy by Small and Medium Enterprises in Kericho- Kenya.

1.5 Justification of the Study

As noted, the study was necessitated by the need to address issues among Small and Medium Enterprises, Public Sector and Government agencies and among Researchers and Academicians.

1.5.1 Small and Medium Enterprises

The study intended to provide a comprehensive understanding of the effects of Enterprise Resource factors influencing the levels of E-commerce adoption which would in turn enable SMEs to better understand the effects of the factors in order to effectively deploy resources in response to weightings each variable would be determined to have as a result of the findings. Such deployment, it is believed would be cost-effective and will provide guarantees on investment owing to the scientific basis of the findings provided by the present study. As supported by Agwu *et al.,* (2014) in his a study among Nigerian SMEs ,he justifies his study as one which would enable Small and Medium scale businesses, policy makers, future researchers and future generations to assess as well as understand the internet and e-commerce in-depth and apply the same to their daily business pursuits within the Nigerian context and other developing countries. Given that the internet is not yet universally accepted in Nigeria, Agwu maintains that "Nigeria still lacks the necessary policies and infrastructure that would enable widespread usage of the internet". This situation also obtains in the Kenyan context. The researcher agrees with Agwu *et al* (2014) that "…the internet has enormous potential as a tool for economic and social development" and therefore the study of the enterprise factors determining its usage and adoption by SMEs could not have come at a better time.

SMEs are a source of employment, food sustainability, growth in Gross Domestic Product, (GDP) as noted by African Economic Outlook 2011 report. In the report it is noted that SMEs create about 85 percent of Kenya's employment. This phenomenon indicates that SMEs form an important and integral part of national development and therefore it is crucial to study the effects of the factors outlined in this study. The findings of this study would undoubtedly help in policy development towards improving competitiveness, productivity and growth among SMEs, reducing the levels of unemployment, enhancing food security and generally improving the quality of life of the business owners and their employees.

Barbar-Sanchez *et. al.* (2007) states that a major challenge for SMEs has been the exploding advancement and the ever-growing ICT development within the past few decades. Further, SMEs can obtain a wide range of benefits from the use of ICT in the areas of productivity, adoption of new organizational, strategic and managerial models. ICT and invariably E-commerce enable access to new environments as well as the generation of new markets and business models and improve the qualification and specialization of human resources, which increases their efficiency and efficacy. The findings of the present study therefore further support practicing managers in SMEs by considering how such organizations can develop both simple and more advanced E-commerce services, based on the experience of other SMEs. Further, they are intended to support the exploitation of global markets and partnerships through the understanding achieved based on the laid down objectives.

1.5.2 Researchers and Academicians

Knowledge is key in changing perceptions as held by the Technology acceptance Model (Davis 1989). Such acceptance of a new technology Davis (1989) argues, is usually based on perceived usefulness and perceived ease of use. Researchers in the field of Strategy and Ecommerce adoption stand to benefit from data generated which afford an enhanced understanding and provide new avenues for further research.

1.5.3 Public Sector and Government

Given the advent of devolution in Kenya where there are two tiers of Government namely; the National and County governments, the findings are intended to enable policy formulation and implementation by the Kericho County in which the study is carried out. Additionally, the findings will be expected to support further ICT usage and adoption of E-Commerce among SMEs in Kenya and elsewhere.

1.6 Scope of the Study

The study was confined to examining the effects of Enterprise Resources in the adoption of Electronic Commerce among Small and Medium Enterprises in Kericho County. It was restricted to the, internal organizational factors of Technology, Finance, Marketing and Human Resources. It involved collecting information from SME owners and Managers of SMEs in Kericho County on the level of E-Commerce usage, and how it is affected by Human, Technological, and Marketing and Financial factors. In line with Ngai and Wat (2002), the use of E-commerce in this study was also considered to involve the use of other ICT applications like social media platforms which include any electronic transactions with or without a website involving the internet and email. The present study was confined to SMEs operating in Kericho County with a special focus on SMEs in the fields of Agriculture, Financial services, Transport, Wholesale trade, Retail trade, Processing/Manufacturing, Education, Insurance, Professional services, Construction and Health.

1.7 Limitations of the Study

The study was faced by a number of limitations which include the type of SMEs studied which were largely Micro Enterprises with employees between 1-9. Further, the relatively new interactions of SMEs with the Internet in trading meant most SMEs use internet mainly for e-mail and money transfer. Additionally it is noteworthy that a majority of enterprises studied were Wholesale and Retail shop traders and Education based SMEs. This signifies that any

recommendations made would most directly apply to Whole sale and Retail traders and Education based SMEs. Further studies may be called for to specifically address the different sectors separately.

1.8 Structure of the Thesis

This section provides a brief of the chapters and sections in this Thesis. Each Chapter begins with a brief introduction of the issue covered in summary form with the aim of introducing the reader to the aspects discussed.

Chapter one in this Thesis covers Introduction and background to the study, Small and Medium Enterprises in Kericho County, Kenya, Enterprise Resources, ICT and E-commerce, a history of E- commerce, E- commerce adoption strategy, statement of the research problem, objectives of the study, research hypotheses, justification and scope of the study.

Chapter two in this Thesis introduces the reader to reviews and discussion of studies in E-Commerce adoption among SMEs around the world, E-Commerce Strategy, Enterprise resources, Financial resources, Marketing resources, Human resource factors and Technological Resources .The chapter also discusses the Theoretical underpinnings and anchorage of the study providing critiques of each theoretical model. The theories discussed are the Adoption Ladder Model theory, the Resource Based theory of the firm, the Transporter Model Theory, and the model of E-Channel utilization in Micro firms Theory. Also covered is the conceptual framework and alternative hypotheses.

Chapter three covers the research design, research paradigms and philosophy, target population, sampling methodology, ethical considerations, validity and reliability, data collection procedure and data processing and analysis. Chapter four in the thesis presents the data analysis, interpretation and discussion; the method and tools used in data analysis is outlined and justified. The analysis is divided into respondent's demographics, descriptive statistics, and inferential statistics, Tests of the reliability of the research instrument, the results of hypotheses tests,

findings and their linkage with the Literature earlier reviewed. In the chapter, the findings are related and synthesized with the Literature earlier reviewed.

Chapter five provides a summary of the study's findings, conclusions and recommendations. The chapter summarizes the findings variable by variable and draws conclusions accordingly. Recommendations are made with implications based on theory, policy and practice. Limitations of the study are presented closing with suggestions for further research.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter outlines theoretical and empirical reviews of literature from a diverse range of published research studies in the areas of ICT development and E-Commerce strategy and adoption in Small and Medium Enterprises. The first section of the chapter presents a review of theories underpinning the study followed by the requisite critiques. A summary and critique of theoretical and empirical reviews is done with the purpose of evaluating contributions made and identifying the pertinent knowledge gaps. The last section of the chapter covers a discussion on the conceptual framework which provides details of the interrelationships of the variables under study.

2.2 Theoretical Review

A discussion of theories relevant to the adoption of e-commerce is done in an attempt to outline their limitations, gaps and advantages. According to Gary (2007), a theory is a set of statements developed through a process of continued abstractions aimed at a generalized statement aimed at explaining a phenomenon. A theory can be a body of knowledge, which may or may not be associated with particular explanatory models. To theorize is to develop this body of knowledge.

A model, on the other hand, is a purposeful representation of reality. Both a model and a theory share common elements in their definitions. According to Gary (2007), what differentiates one from the other is that one is aimed at generalized statements (theory) while the other is aimed as a helpful tool to understand a specific phenomena (modelling).Another way to link model and theory is to consider the distinguishing characteristics: a model is often used to describe an application of a theory for a particular case. Sometimes, a model involves a given set of initial and boundary conditions. From an operations research perspective, a model is a representation of reality and can be used in analytics to solve or provide specific optimized solutions to

organizational problems. Some of the theories used in this study are referred to as models but in their nature the models are essentially theories (Gary, 2007). It is noteworthy that the theoretical models have been used in similar previous research studies which are cited accordingly. It is on this basis that theoretical models are used alongside the Resource-based theory to anchor and underpin the present study.

2.2.1 The Resource Based View Theory (RBV)

The Resource Based view Theory as used by Caldeira and Ward (2003) assists in interpreting the successful adoption and use of information systems and technology in 12 Portuguese manufacturing SMEs. The theory identified two factors which, from the empirical evidence, are the determinants of the different levels of success in Information Systems /IT adoption and use. These factors were also primarily associated with the internal context of the organizations. These aspect underline the relevance of this theory as an anchorage for the present study in that the resources held in the enterprise are deemed to be rare ,inimitable ,valuable, non tradable and non substitutable.

In order to manage competitive forces a firm requires a resource structure that can distinguish it from its competitors. The Resource Based view theory by Birger Wernerfelt (1984) explains the uniqueness resources have that are able to keep a given firm more competitive than the rest. The theory explains a firm's ability to have a sustainable competitive advantage based on the resources it possesses. The resources should be managed such that they cannot be imitated by the competition. RBV holds the position that by resources being inimitable, non- tradable, non-substitutable, rare, firm specific and valuable, they position a firm or enterprise in a formidable position which will give it a sharp competitive edge. In the case of this study which concerns itself with the role played by enterprise resources in the adoption of Ecommerce strategies, the resources held by particular SMEs based on their nature are likely to influence E-commerce

adoption. Once the firms adopt E-Commerce practices which are firm specific they will have the capacity to hold some resources that fall along the lines of the Resource based theory.

From a critical perspective it is worth noting that SMEs being young mostly singly owned entities, the likelihood of their possession of rare, inimitable, non-tradable, firm specific resources is in itself rare given their developing country context, limited access to capital among other factors. This does not mean however that the SMEs may not be holding in their ranks skilled and talented people (staff) who are creative and able to create original innovations especially in as far as technology is concerned. Such rare competencies may be learned as argued by Katwalo (2009) in his study on Competence Development in SMEs. He posits that there can only be competence development if the new technologies, new organizational forms, new norms and values that emerge during the process are linked to or part of the individuals learning. E-commerce strategy is part of new technology and hence its role in competence development cannot be underestimated. Largely though, this present study is in agreement with this theory especially in relation to the adoption of ecommerce resources which can be considered as being rare, valuable, inimitable, non-tradable, and non-substitutable and firm specific depending on how they are managed.

2.2.2 The Adoption Ladder Model-Theory

The Adoption Ladder Model-Theory used by Hassen (2012) presents a theoretical anchorage in a study of the Role of ICT for the growth of small enterprises in Ethiopia. The approach by Hassen (2012) compares findings to the Adoption Ladder Model with regard to the extent of E-commerce usage. This approach is one of the e-business adoption level models and is preferred by the UK government's Department of Trade and Industry (DTI). The levels of ICT adoption in this model, when viewed from a purely technological perspective, suggest that involvement of SMEs with the technology of e-business is sequential and progressive (Taylor and Murphy 2004: 283). According to the theoretical model, it usually starts from using the internet for only

communication purposes through e-mail and then to developing websites to be used as an introductory ‘window’ to the global market; then as the utilization level grows to the higher levels, actual transactions of taking orders, buying, selling and payments are made through the Internet, (Martin, &Matlay, 2001).

As the sophistication of the enterprise grows to e-business level and supply chain management comes to picture in easing the flow of materials; this would also decrease processing cost for the businesses by minimizing wastage in resources. The ultimate level of utilization, according to the model, comes with systems built on total integrated engagement in the technology allowing virtually everything that a business organization wants to do with everyone else. It would have open systems for its customers, suppliers and more; and allows inter-working with other organizations and individuals for any business opportunities.

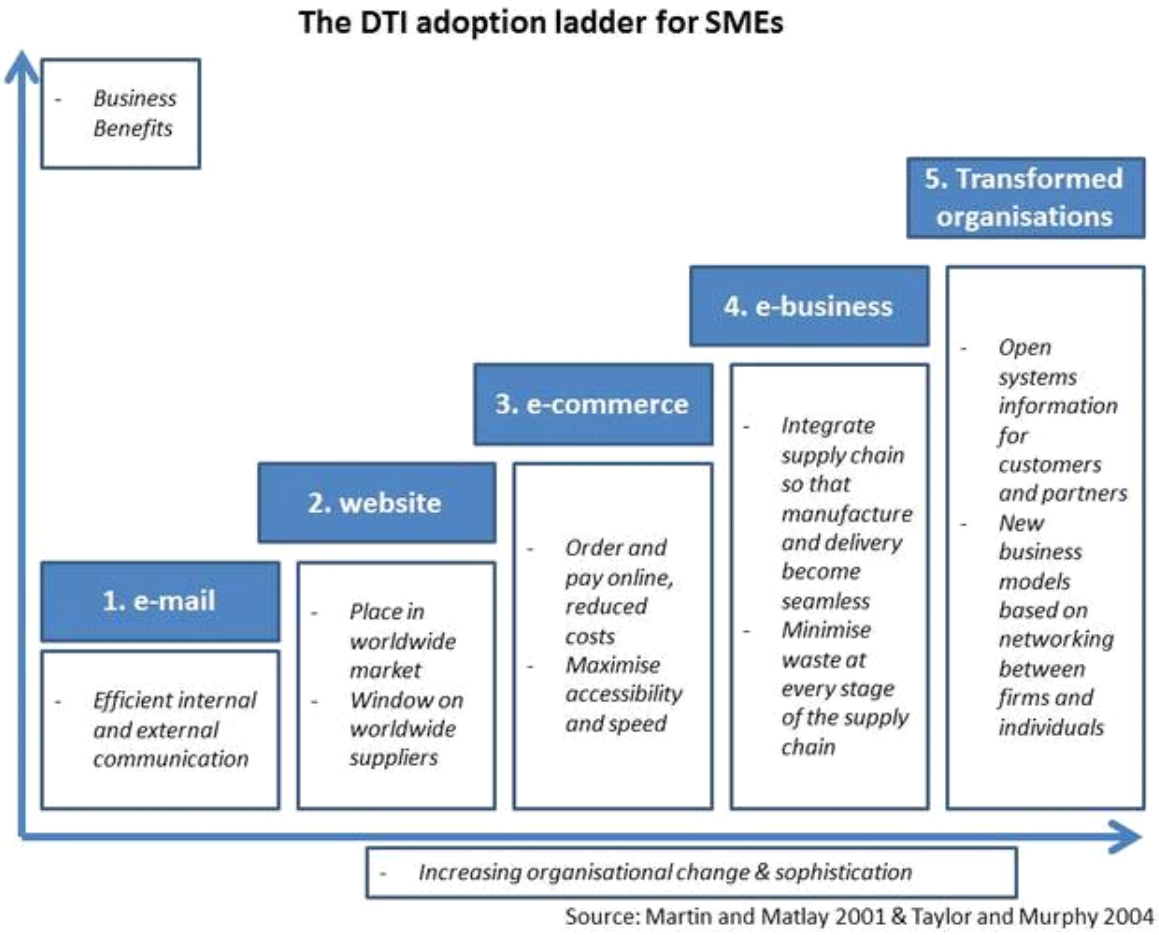

Figure 2.1 Adoption Ladder Model for SMEs

The model implies that advantages of utilization are obtained from the organizational change and the increase in ICT sophistication that the Internet facilitates. It also implies that change is progressive and greater sophistication of businesses arises from the supposed four unique qualities of the Internet namely; its ubiquity in allowing access from anywhere; its interactivity in facilitating collaboration; its speed in helping businesses to grow fast; and its intelligence in providing capability to retrieve, store and process information (Taylor and Murphy 2004, p. 283). The Adoption Ladder Model demonstrates the components of organizational sophistication as typical business endeavors accrue to develop in successive steps to the next level on the ladder. Consequently, as the organizational sophistication increases (the independent variable x-

axis) there is a corresponding increase in the level of utilization and business benefit (the dependent variable y-axis).

Taylor and Murphy (2004: 283) present what the Local Futures Group(2001) suggests (cited in Dixon et al., 2002) that, in order to attain the goal of full sophistication, firms must cross two digital divides. The first one is the possession of basic skills in ICT to operate e-mail and browse simple brochure websites for information. The second digital divide is the doorstep to e-business stage which requires advanced skills in ICT including research and development, as well as a range of specialist business skills and knowledge in areas like management, strategy and marketing. As a critique to the model, a major point mentioned is that the Adoption Ladder approach mainly underlines the evolution of technology take-up and the social processes from which it results, according to the authors (citing Scarborough and Corbett, 1992).Consequently it appears to be a deterministic view of change in implying that all small enterprises have to follow one prescribed course and if they do not finish the course of climbing to the top of the ladder, they have somehow failed in their growth endeavors (Taylor and Murphy 2004: 283-284).

The significance of this theory to the present study is connected to the 'budding" nature of e-commerce in a developing country context. In the case of the present study, most SMEs are yet to cross the second digital dived; they are still using internet for email, browsing websites for information and electronic funds transfer.

2.2.3 Transporter Model

According to this model, the pushes from business requirements and perceived benefits usually lead to Internet development. It argues that though it is widely and intuitively pleaded, there isn't much substantiation that SMEs follow a 'stages of growth' (or 'ladder') model in their adoption of ICT. Instead, it is argued that a 'transporter' model which moves from one level of use to another without the inherent concept of growth could be more useful for understanding the level

of adoption of ICT and the Internet (Levy & Powell 2002,p. 510).This comparative development model presented by Levy & Powell (2002, p. 515) suggests that there are two key drivers in determining the use of the Internet by SMEs. The first one is business growth and the second is business value obtainable from the Internet. According to the authors, business growth occurs in some firms through planning and in some it happens without planning. This attitude to plan and anticipate for growth determines owners' decisions of investment on ICT. On the other hand, business value in the use of ICT is established by the firm's competitiveness and awareness of the developments in the pertinent industry. The authors discuss their findings stating that firms are usually cautious in adopting the Internet and some owners do see its values for their growth but need to know the actual obtainable benefits than merely perceived ones before they put their investment on it. The combination in the different levels of these two drivers results in the four groups of segments in Internet adoption patterns; namely brochure ware, business opportunity, business network and business support. Notably this theoretical model is relevant to the present study because the SMEs studied have indicated their adoption patterns as being in line with those espoused by the theoretical model. Additionally this model has been used by Yassen Hassen(2012) in a similar study in Ethiopia

2.2.4 Model of E-Channel utilization in micro-firms

A further model of how SMEs might develop an e-commerce strategy was developed by Heikki Karjalutoto (2010) from the University of Jyvaskyla and Maija Huhtamaki from the University of Oulu in Finland and published in the Journal of Small Business and Entrepreneurship in 2010. Developed for micro-businesses engaged in retailing, their model is illustrated in Figure 2.2

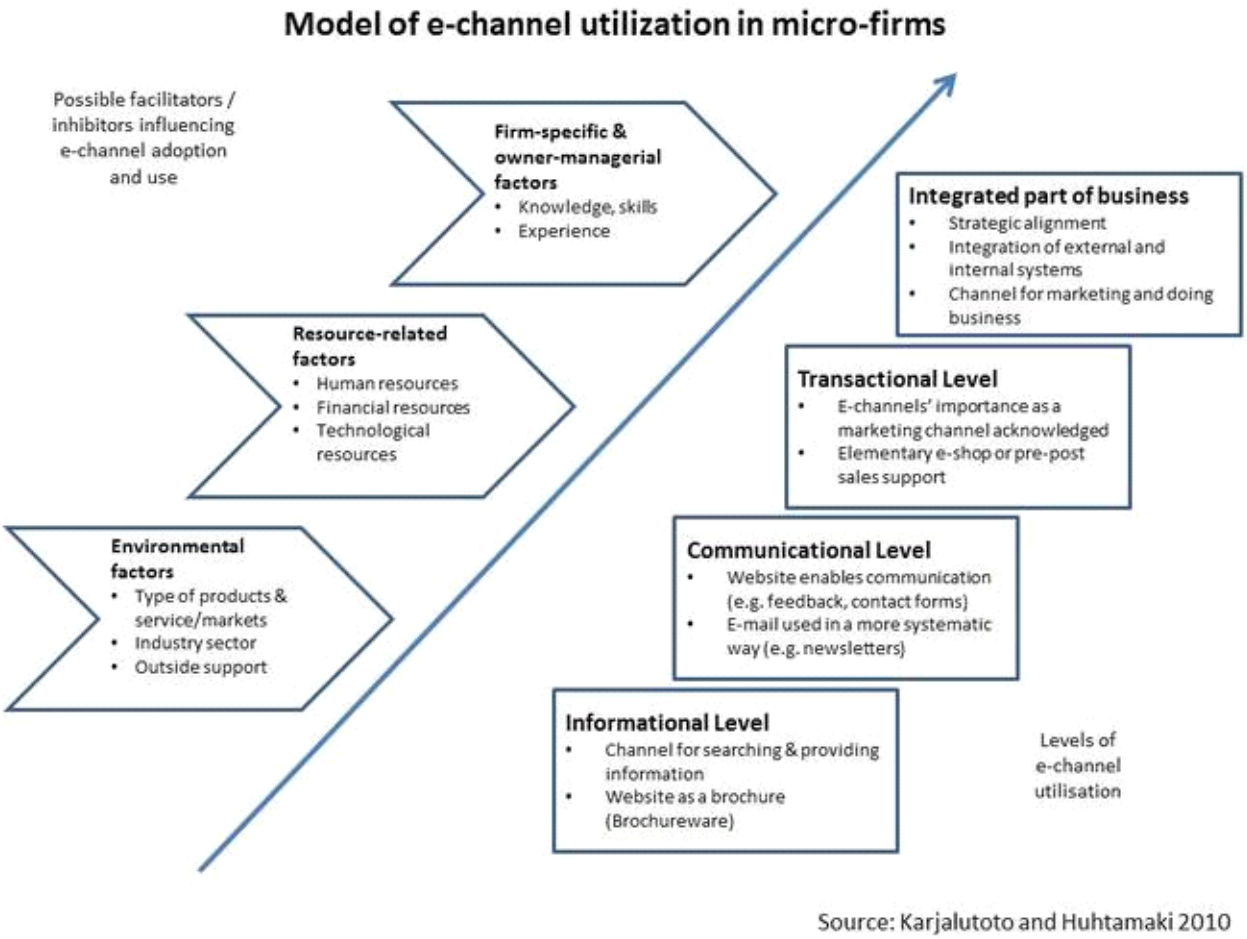

Figure 2. 2. E-Channel utilization in Micro-firms

It can be noted from this model that the business develops through four stages linked primarily to the use of the Internet for information, then communication, then transactions and finally as an integrated strategic part of the business. Driving this development cycle is the three forces of environmental factors, firm resources and the characteristics of the owner-manager and their firm. These three factors can either facilitate or impede the level of adoption of e-commerce within the business. SMEs in the present study were noted as using e-commerce for Information and communication. Most of the SMEs are yet to integrate E-Commerce as and integrated part of the business.

2.2 Empirical Reviews

2.2.1 E-Commerce Strategy and Adoption

Businesses seek every avenue and opportunity to attain competitive advantage, improved market share, enhanced sales and consequently employ strategies with this objective in mind. Notable among the strategies as noted in the Literature reviewed in this study, are E-Commerce Strategies which are not only limited to buying and selling over the Internet, but are also concerned with transferring or exchanging products or services and or information via computer networks, including the Internet, Extranet and Intranet (Turban *et al*,. 2006).

In a study on E-Commerce adoption in Jordan Al-Fawaeer (2014) found that based in Literature reviews, E-commerce adoption was found to impact several factors within the organizational strategy; internal factors, market factors, competitive factors. Further in his view, E-commerce adoption may have both negative and positive effect on business strategy that needs to be verified by more scholars in difference contexts. Several (controllable and uncontrollable) factors impact the final decision that the consumer made within the E-commerce context. More research is needed to highlight the importance of e-commerce adoption in organizational strategy. (Al-Fawaeer 2014).The position of the present study is that strategy as it applies in SMEs requires study and hence the current research seeking to establish how internal enterprise factors affect the adoption of E-Commerce as a strategy among SMEs in Kericho-Kenya a developing country context similar to the studies carried out in Jordan. Further the present study is emphasizing a rural approach especially due to the advent of the devolved system of Government in Kenya.

Agwu (2014) while studying Nigerian SMEs cites certain impediments to E-commerce adoption by SMEs. The findings in Agwu (2014) revealed that the extent of adoption is hampered by a range of other obstacles including lack of government policy frameworks, the lack of micro finance from the banks, and ignorance on the part of possible users about the enormously

beneficial and potentials of e-commerce services. The present study sought to determine the effects of factors like finance, human factors including knowledge and how they promote or hinder the deployment of E-commerce as a strategy. The findings have revealed that Ecommerce can be deployed assisted by National and County governments to remove the hindrances as cited by Agwu in his study of Nigerian SMEs. Agwu (2014) further asserts that, the poor levels of education of most SME operators, as well as poor English language and ICT skills, the cost and maintenance of computers and its accessories all combine to form the formidable barriers to adoption of E-Commerce by small and medium scale industries in the Nigerian context. It is also of interest to note that despite the insurmountable limitations as presented above, it appears that ecommerce can indeed be relevant to the Nigerian SMEs as it has been adopted in full by conglomerates and most large organizations in the country, (Agwu 2014).

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 share of the online commerce market (Wang, & Cheung, 2004). The Internet has had a major impact as a source of information for tourism (Buhalis&Schertler, 1999).This finding is true to tour firms but remains subject to confirmation by the findings of the present study on SMEs.

More specifically, E-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).The study in reference relates to SMEs in the travel and finance sector and undoubtedly the position holds true only in reference to the sectors mentioned and not other SMEs and sectors covered by this study.

While discussing the findings of the study on the magnitude of barriers facing e-commerce businesses in Kenya, Kinuthia *et al.,* 2014 assert that there was very little electronic trading taking place in Kenya at the time of the study. Many people did not know anything about it. Those who knew about it had been hindered from implementing it due to reasons beyond their control, namely, lack of security on the Internet, use of international credit cards, high costs of infrastructure, lack of knowledge and inexistence of laws governing trading on the Internet. The research recommended policies requiring various actions to be taken by government. It required the government to enact laws to govern Internet based trading; investment by the government in education of its people on how to harness the benefits of the Internet for trade; implementation of a clear government policy, promoting electronic commerce in Kenya and providing an enabling environment.

A global explosion had been witnessed in research to investigate factors influencing the adoption and effectiveness of e-commerce in retail businesses (Kraemer *et al*., 2002; , Goyal, 2006; Gikandi & Bloor, 2010). However, little had been done to establish these factors in electronic banking (e-banking) in developing countries. Gikandi and Bloor (2010), there-fore, carried out a research with the aim of investigating the factors that influence the adoption and effectiveness of e-banking in retail banking in Kenya. The study showed that e-banking was the most effective way in reducing costs and remaining competitive in comparison with conventional banking practices. It was noted however that the main question was how to establish it without severe organizational problems. No study had been carried out earlier in Kenya to establish the factors influencing the adoption and effectiveness of electronic retail banking. The study by Gikandi and Bloor (2010) was thus designed to identify these factors. The Gikandi and Bloor (2010) study came up with an array of factors which tended to inhibit the adoption of e-commerce in Kenya. One of these is the lack of resources and that this was one of the reasons why banks had resulted

to alliances in order to pool resources. Another was the constant change in technology and time available to develop systems. They noted also that a major challenge was the lack of spread of accessibility and use of Internet by the general population, especially in the rural areas. They observed that e-banking introduced new risks requiring new risk management strategies, including Internet security, customer and legal related issues. The study concluded by emphasizing the role of Kenya Government in achieving a secure environment for e-banking activities. The government needed to put in place clear laws, rules and regulations, provide relevant technical training to the regulatory authority to empower them to enforce the laws effectively. Thus, organizational, governmental and developmental issues were identified as constraints to the adoption of e-commerce in the banking sector in Kenya.

Using Kenya as a case study, Musau *et al.*, (2011) pointed out that the emerging ICT technology could create solid improvement in offering better services to all nations. This would enable the citizens of the countries to access e-services from the governments based on their trust of the systems. In their report, Musau *et al.*, (2011) stated that things have not been as planned in Kenya because majority of the people do not trust e-government.

In Africa '…the continents IT markets are predominantly in West and East Africa and have seen a rapid surge in the development of E-Commerce' (Wambugu, 2015).Accordingly Wambugu (2015) state "….experts estimate that the market will be worth $50 billion by 2018 compared to $8 billion in 2013"(Appendix 3-How online shops are changing Africa's retail business). Masiero (2013) in a study of M-Farm Ltd, states "….there is a small set of new, successful Kenyan startups in mobile farming. An example is M-Farm Ltd., a "software solution and agribusiness company" whose product concept is based on the necessity of providing relevant, ready-to-use information to farmers across the nation as a whole. Developed in 2009 and led by

Jamila Abass, M-Farm has started its operations with the mission of empowering Kenyan farmers whose problems include misbehavior of middlemen with respect to the price of produce, ineffective mechanisms for information on market prices, and the relatively high cost of farm inputs" The initiatives of Jamila Abass which were recognized by President Obama during the 2015 Global Entrepreneurship Summit confirms that E-Commerce is a phenomenon that is now recognized as a strategic avenue to faster and effective business operations especially among SMEs. In the case of Abass, M –Farm is an innovation used in Kenya which uses the internet to enable farmers know the reigning prices of agricultural produce to ensure that they are not tricked by middlemen. M-Farm has been in service since February 2011 and since then the module that is widely used as the price information service runs on 3535 (Kibor 2015).

While discussing strategy among SMEs in Netherlands, Gulobova (2012) notes that it is interesting to discuss whether SMEs and start-ups should engage in formal or informal planning. Chau (2003) notes that the strategic use of e-commerce by SMEs may be explicit in some cases but frequently it is implicitly implied. The choice for a strategic approach also depends on the industry in which the firm operates. A study by Mohr et al. (2009) for instance showed that strategy formulation might be different in a high-tech environment. In contrast to the neat, orderly process of strategy formation and execution implied by the formal planning approach, rapidly changing customer expectations, competitor actions, and technologies, such as those found in the high-tech environment, do not allow for such a rational process. Often referred to as an emergent planning process, the strategy is improvised or emerges from lower levels of organizations – whether through trial-and-error leaning or incrementally with guidance from the top. In the present study it is the researcher's argument that E-commerce deployment is influenced by "resources" as supported by the Resource Based View theory and other theories and that it plays a key role in growth and competitive strategy by SMEs.

Since the current study seeks to enable findings to support strategy crafting and development among SMEs in Kericho-Kenya parallels can be drawn with studies by Shemi (2012) among SMEs in Botswana where she maintains that the essence of strategic intent in e-commerce adoption has been scarcely addressed in e-commerce adoption literature. Her study took the strategic assumption of e-commerce adoption that aligns with Forman, Goldfarb, & Greenstein's (2003) emphasis on 'enhancement', that is, 'adoption of Internet technology to enhance computing processes for competitive advantage.' Similar to the present study Shemi's study was intended to make recommendations on the strategic direction that SMEs in Botswana can follow. As confirmed in this review, "Some of the reasons put forward from the literature include; cost of acquiring and operating ICT, lack of ICT and e-commerce knowledge, owner/manager low literacy levels, inability to perceive e-commerce benefits, unfriendly regulatory policy and requirements, cultural issues and dependence on customer or supplier preferences. Little is known of how these situations emerge in developing country SMEs as previous studies have leaned on making decisions based on exploratory surveys. This study seeks to fill knowledge gaps along the lines cited.

Concerning growth strategy, a firm should be able to identify its attitude towards e-commerce growth (Gulobova, 2012). An interesting distinction of e-commerce growth potential strategies is given by Jeffcoate (2002: 126), "SMEs may be divided into two main groups on the basis of their attitude towards growth;growth oriented and quality of life. The primary purpose of growth-oriented companies is to grow and create the most valuable company they can. In contrast, quality of life appeals to companies whose primary purpose is to provide an income for the owners".

‘Owners wealth objective’ or the “quality objective” could be true for the current study although studies to confirm this in Kenya were found to be rare.

On E-Commerce strategy, Golubova (2012) expounds on Ansoff’s strategy. The strategic intent in SMEs may be usefully understood using Ansoff’s framework on product/market expansion. Ansoff’s framework has been used by Levy (2005) to consider the strategic intent and to map strategic growth intention of SMEs. This framework identifies four strategies for growing businesses. Market penetration is continuing to sell current products into current markets. Market development is selling current products into new markets. Product development is selling new products into current markets. Diversification is selling new products into new markets**.** The use of Ansoff’s model in its entirety by SMEs especially in Kericho County in the present study cannot be over ruled since they are dealers and distributors of different products and services on behalf of different manufacturers.

While discussing the benefits of E-Commerce, Adelaar (2004) mentioned that e-commerce can be used as a tool to offer added value to existing customers, which helps retain and intensify the relationship with these existing customers. New customers need to be made aware of a firm and its offerings, and will not have as much familiarity with the brand, resulting in higher costs to establish a sale. E-commerce strategies designed to move into unserved markets are considered complicated and costly, due to the necessary scalability of fulfillment processes and a need for in-depth market knowledge. In this study an attempt will be made to determine the linkage between pressure from customers and manufacturing firms on the use of E-Commerce among the target population of SMEs.

The present study attempts to contribute to the amelioration of the effects of challenges in E-Commerce adoption. Such challenges are discussed by the UN policy report on E-Commerce as used by SMEs. According to the report UN (2014) "there are several explanations for the slow diffusion of e-commerce in developing countries, in general, and in Africa, in particular. These barriers can grouped into three categories: sociopolitical, including legal and human preference; cognitive, including literacy, content and language; and economic barriers, such as access and use of ICTs. Studies conducted in Ethiopia and in the Gambia, as well as other studies undertaken across the continent, broadly identify similar challenges pertaining to growth of e-commerce in Africa. These challenges are summarized include, affordable ICT infrastructure, particularly the Internet and broadband, which is one of the key factors affecting the growth of e-commerce. As per the UN Report (2014), a study conducted in 13 African countries involving 3,691 SMEs revealed that 72 per cent of SMEs in general rated the computer as being important, while only 52 per cent of them believed that the Internet was important or very important. This suggests that cost and accessibility may be a consideration when comparing computer and Internet usage to mobile phone usage, which was rated by 95 per cent of SMEs as being important or very important, even though, in the last few years, the cost of access decreased significantly in line with the introduction of an undersea fibre cable network.

According to the International Telecommunication Union (ITU), for example, fixed-broadband prices are by far the least affordable in Africa, with an average regional value of 64.3 per cent of gross national income. The concept of e-commerce has been broadly written and defined in various ways (Mutua, Oteyo, & Njeru, 2013). In this study, Enterprise Resources is an aspect which, depending on the findings, will most likely determine the adoption of E-commerce practices. According to Ajmal F *et. al* .,(2012) "The same goes for enterprise resources as small businesses tend to believe they do not have enough resources to support the e-commerce

implementation in the company. Enterprise resources consist of human, financial and technology (computer, telephone lines, cable, etc).On the aspect of cost of acquisition of the hard and software required Ajmal *et. al.,* (2012) reiterate that the organization sometimes feels that it will be irrelevant for business and will cost too much to implement and the cost will increase with time to maintain the system.

The current study holds a divergent view to this when it relates to the affordability and purchase of mobile phones in Kenya for use in MPESA funds receiving and transfer. This is because the costs of mobile handsets may not be as prohibitive due to the availability of low-priced handsets e.g *kaduda* and *mulika mwizi* brands.

2.2.2 Enterprise Resource Factors

While discussing competence development in SMEs and the role played by internationalization, Katwalo (2009) asserts that internationalization research can only be more comprehensive when internal and external resources available to the SME are identified. Such resources makeup the competitive advantage and defines the logic for internationalization. The present study considers this aspect to be important since internationalization is among the drivers of E-Commerce adoption and more research studies are proposed. Internal resources are identified in this study as possible determinants of E-Commerce adoption which in itself is an aspect of globalization and internationalization. The World Wide Web upon which E-Commerce rides is an international phenomenon. Concerning the learning process in competence development, he posits that there can only be competence development if the new technologies, new organizational forms, new norms and values that may emerge during the process are linked to or part of the individuals' learning. Such learning by individuals form part of the competencies inherent in the collective Human resource factor a variable in the present study.

Similarly, Hashim and Noor (2014) in a Malaysian study affirm that IT resources are said to facilitate e-commerce adoption among SMEs. Almost 100% of respondents in the Malaysian study use computers in their business, regardless of firm size. Only 3 out of the 522 SMEs in the survey do not use a computer. The study confirmed that the firms participating in this study have been using computers for more than 18 years on average and approximately three-quarters of respondents claim that they have been using the Internet for more than 5 years. The Internet can be considered as part of the basic infrastructure in most firms now. In the present study the internet and its availability in the firm constitute Enterprise Resources a phenomenon which is in well aligned to the findings among SMEs in Malaysia. Most SMEs in this study, the authors aver seem to spend little on IT. Only one third of these SMEs allocate more than 5% of their annual budget to IT. Confirming the aspect of Top management's role as a Human resource factor which collectively make up Enterprise resources the authors illustrate the role played by management and explain that one of the managers interviewed stated that he only allocated small amount of money to invest in IT: "I only use a computer to keep information about my customers and the firm inventory. I only browse the Internet during leisure time at home, but not in the office. So, I only allocate a small portion to IT expenditure in my firm's annual budget.

This study finds higher IT spending does not determine e-mail usage among the SMEs.'' However, SMEs with higher IT expenditure are more likely to have a website and buy online. Similarly, SMEs with higher IT expenditure also seems to use more website activities than SMEs with lower IT expenditure.

In a study in Nairobi-Kenya, Mutua *et al.,* (2013) discusses restraining forces towards E-Commerce usage among SMEs and assert that when looking at inhibitors to e-commerce in SMEs, the ignorance about e-commerce benefits inhibits its adoption (Jones, Beynon-Davis, & Muir, 2003). Citing studies in Melbourne the authors posit that Knowledge and awareness play a role in promoting or inhibiting Ecommerce adoption "Researchers agree with this position on e-

commerce and the competitiveness of small enterprises in Melbourne, stating that knowledge and awareness about the benefits of ecommerce motivates small businesses to adopt increasingly sophisticated e-commerce solutions" (Castleman Chin, 2002).Accordingly, the present study's position is that Human resource factors which include knowledge and awareness play a role as an Enterprise resources and do have an influence, as supported by past studies, in the adoption of Electronic Commerce among SMEs in Kericho.

While examining the factors influencing Electronic Commerce adoption in Iranian Family SMEs Jamali *et al* (2015) cite Perceived Organizational Resources as perceived availability of technological, human, financial and informational resources in an organization (Tan, Tyler and Manica, 2007), which in turn undertook the Facilitating Conditions, Organizational Sources, Information Sources, Organizational Awareness , Managerial Time, Lack of Managerial Time, SME's Prior Experience, EC Barriers and Limitations, Lack of Skills and Training, Human Resources, Organizational IT Competence, Adoption Cost/Financial Commitment/Financial Resources/Implementation Cost, Business Resources, Technology Resources, Technological Readiness/ E-Business Technology, Employees' Knowledge of IS/IT E-Commerce/Technical Competence, and Financial/Technical/Technological Resources. As far as the present study is concerned most of the resources are part of the aspects studied.

In a study of factors affecting e-commerce adoption in small and medium enterprises in Botswana, Shemi *et al.,* (2012) describes the Networked Readiness Index (NRI) whereby states are ranked on their preparedness in embracing ICT and E-Commerce. According to the study, The (NRI) is defined as a nation's or community's degree of preparation to participate in and benefit from ICT developments (WEF, 2003). It is argued (WEF, 2003) that 'the Networked Readiness Framework and its components provide not only a model for evaluating a country's

relative development and use of ICT, but also allow for a better understanding of a nation's strengths and weaknesses with respect to ICT.' The NRI has been based upon the following concepts (WEF, 2003),That there are three important stakeholders to consider in the development and use of ICT: individuals, businesses, and governments, That there is a general macroeconomic and regulatory environment for ICT in which the stakeholders play out their respective roles, The degree of usage of ICT by (and hence the impact of ICT on) the three stakeholders is linked to their degrees of readiness (or capability) to use and benefit from ICT.
Thus for each country, NRI measures the key factors relating to the environment, the readiness, and the usage of the three stakeholders in the Networked Readiness Framework (individuals, businesses and governments). Details of the three key factors are as follows, the Environment component index is designed to measure the degree of conduciveness of the environment that a country provides for the development and use of ICT (WEF, 2003).

Furthermore, NRI derives this measure from three sub-indexes, namely; Market, Political/Regulatory, and Infrastructure. It is noteworthy that Infrastructure is an issue pertaining to resource readiness and in this study it is considered under technological factors. These are described as follows; the assessment of the presence of the appropriate human resources and ancillary businesses to support a knowledge-based society. Market forces are varied and include 'fundamental macroeconomic variables like gross domestic product (GDP) and import /export, commercial measures like availability of funding and skilled labour, and the level of development of the corporate environment'

Political/Regulatory: The priorities of a nation are reflected in its policies and laws that in turn influence its rate of growth and direction of development. This component measures the impact of a nation's policy, laws and regulations, and their implementation on the development and use

of ICT; Infrastructure is defined as the level of availability and quality of the key access to infrastructure of ICT within a country. A quality ICT access infrastructure facilitates the adoption, usage, and impact of these technologies which further promote investment in ICT infrastructure. Therefore, it is argued that infrastructure plays a critical role in the networked readiness of a country (WEF, 2003). Readiness**:** The Readiness component measures the capability of the principle agents of an economy (citizens, businesses, and governments) to leverage the potential of ICT. This capability is derived from a combination of several factors such as the presence of relevant skills for using ICT within individuals, access and affordability of ICT for corporations, and government use of ICT for its own services and processes. There are three sub-indexes that measure readiness under individual, business, and government dimensions (WEF, 2003). These are described as follows, Individual Readiness measures the readiness of a nation's citizens to utilize and leverage ICT. Factors that are used to measure this include the literacy rates, mode and locus of access to the Internet, and the degree of connectivity of individuals. Business Readiness measures the readiness of businesses to participate in and benefit from ICT. The aim of this sub-index, according to the WEF (2003) report, is to include not only large corporations but also small and medium-sized firms. Government Readiness measures the readiness of a government to employ ICT. It is reflected in the policy-making machinery and internal processes of the government and in the availability of government services online. Usage as the third major component, aims to measure the degree of ICT by the principal stakeholders of the NRI framework, namely: individuals, businesses, and governments. Individual Usage gives an indication of the level of adoption and usage of ICT technologies by a nation's citizens. This is done by assessing the deployment of connectivity-enhancing technologies like telephones and Internet connections, level of Internet usage, and money spent online. Business usage measures the level of deployment and use of ICT across businesses in a nation. It is determined by factors such as the level of B2B and B2C e-commerce, the use of ICT

for activities like marketing, and levels of online transactions. Government Usage is the level of use of ICT technologies by the government of a given country. Factors used to measure this are; volume of transactions between businesses and governments, and the presence of government services online.

From the above definitions of the elements of NRI, there are two common measures of the NRI: the ranking of countries, from the best-rated country (ranked 1) to the poorest country that obtains the position based on the number of countries participating in the study; and a score that ranges from 1 (lowest) to 7 (highest) based on a criterion of analysis.

In a comparative study among SMEs in the USA, Spain, Portugal and Poland, Wielicki& Arendt (2010) found that a nation's ICT readiness greatly assists its SMEs to apply more knowledge-based ICT in their business. This may also greatly influence the e-commerce readiness of individual SMEs in their countries. Based on the global networked readiness rankings (GITR, 2012), Kenya's ranking is 92 out of 144 countries according to the Networked readiness index 2014. In as far as this study is concerned therefore the results drawn will be assessed against this position.

2.2.3 Financial Resource Factors

While describing the Adoption Ladder Model, Martin and Matlay (2005) state that the lack of resources and expertise available to SMEs due to their size seems to hamper each stage of the adoption, implementation and evaluation of E-commerce. Irefin, (2012) while studying financial resources as a factor affecting the adoption of information and communication technology in Small and Medium scale enterprises in Nigeria describe the element of cost as a coefficient. Accordingly the cost factor is the largest among the significant variables, implying the cost of purchasing computer equipments and establishing a communication network system have relative important effect on ICT adoption. As small businesses are characterized by server

constraints on resources such as finance and in-house technical expertise, the adoption of ICT represents a disproportionately large financial risk which cannot be taken by SMEs. High cost of computers, internet facilities and other ICT equipments which form the core ICT infrastructure is also affecting the adoption of ICT by SMEs. According to the result, government support has a significant and strong positive relation to ICT adoption.

Jain & Jain (2011) describes the Indian context of Ecommerce use which 'consists of transactions for which Internet acts as a medium for contracting or making payment or for consuming the service/product by the end user.' They state that three alternate combinations of these activities; Paying online and consuming online, Paying offline but consuming online, and Contracting and paying online but consuming offline.

In a study of factors influencing e-commerce adoption by retailers in Saudi Arabia Al Ghamdi *et al.*,(2015) cites enablers and inhibitors of E-Commerce among SMEs in Saudi Arabia and singles out setup costs as one of the key inhibitors. In as far as the present study is concerned, financial resource factors include aspects of cost and the SMEs financial strength vis-à-vis its ability to invest in ICT infrastructure and invariably Electronic Commerce.

According to Stoneman and David, (1986) the impact of government policies and initiatives has been shown to have direct and indirect stimulation to the supply of information which produces faster technology diffusion. For example, governmental efforts to establish a national information infrastructure in US, Singapore and Malaysia have shown that governments provide a legitimate and positive leadership role in developing the information infrastructure in its effort to digitize its economy (Kettinger, 1994; Tan, 1998). Business size has negative relationship to the adoption of ICT while management support has positive influence on the adoption of ICT.

Previous studies showed that there is a positive relationship between IT resources and ICT adoption (Ismail and King, 2007; Shiels *et al*., 2003; Ndubisi and Jantan, 2003). Ismail (2004)

classified IT resources in two forms, namely IT expenditure of a firm and IT skills of staff within a firm. SME firms with more IT expenditure tend to adopt more complex ICT (Shiels *et al.,* 2003; Ismail and King, 2007). In addition, the use of advanced systems is significantly related to the IT skills that a firm has, and how much money a firm invests in ICT (Ismail, 2004; Ndubisi and Kahraman, 2005). Furthermore, Ndubisi and Jantan (2003) found that computing skills and technical backing are strong anchors that influence system use.

Hashim and Noor (2014) assert that among Malaysian SMEs there are some other few factors that have not been studied in great details, such as, firms' location and the firms' IT resources, manager ethnicity and experiences of living outside Malaysia. It maybe that most of the studies are based in western countries; thus, these factors are not in a great concern. But for a developing country such as Malaysia, these factors may give an impact in e-commerce adoption.

In a study of E-commerce adoption factors in Ethiopia, Hassen (2012) singles out the MPESA platform by Safaricom Mobile Phone Company in Kenya as an E-Commerce funds transfer service. "It is worthy here to explore a significant success story in the area of mobile cash transfer in Africa, particularly in Kenya by Safaricom". Ngugi, Pelowski, and Ogembo (2010, P1) who conducted a case study on mobile money banking in Kenya "M-PESA", quote Djiofack- Zabaze& Keck, (2009) on the estimate that one in ten Africans have access to mobile phones, while some African countries such as Nigeria, South Africa, Kenya, Egypt and Gambia having an even higher ratio.

According to Safaricom Company, MPESA is an innovative mobile transfer solution that enables customers to transfer money; it is aimed at mobile customers who do not have a bank account, either by choice, because they do not have access to a bank or because they do not have sufficient income to justify a bank account". Ngugi, Pelowski, and Ogembo (2010) explain that 'M-PESA' is an abbreviation for the word mobile –'M', and 'PESA' to mean 'cash money' in Swahili and hence "mobile cash money." They quote Safaricom (2009b) that 'M-PESA'

provides mobile money transfer services including transfer of money between users, paying bills and salaries, purchasing of goods and telephone airtime credits, which by passes the traditional banking system. Kenya is the first country in the world to use this service followed by Tanzania. Quoting Rasmussen (2009), they explain that while M-PESA had 2.7 million users in Kenya in 14 month following its launch, the Tanzanian M-PESA only had 280,000 users by the same time. According to the authors, the growth of money transfer service using mobile phone is transforming how consumers in the developing world are getting financial services, since large proportion of the population couldn't get formal banking services before .Some of the major factors for the success of M-PESA include its removal of the bureaucratic procedures and documentation instituted by individual banks or central bank regulations. The banks require a certain minimum amount to remain in the account at all times, and charged high monthly fees for going below the minimum amount. On the other hand, MPESA requires only national identity cards and phone numbers and no other obligations on the customers.

In addition, most of the banking services were found in the big town centers or economically viable areas whereas M-PESA can operate even in the most remote villages. The demand for simple and reliable method of money transfer to remote areas kept growing thus M-PESA was able to meet this need and to grow quickly as it did in Kenya. Generally, M-PESA solved the problems in existing money transfer methods since it reduced the cost of sending money, eliminated middlemen and utilized technology to make sending money faster, convenient, reliable and safe (ibid: 6).

The present study considers this E-Commerce innovation as a financial resource available to the individual firm to use in its money transactions like paying salaries, purchasing goods, paying bills, receiving payments for goods sold etc. Hassen (2012) state that money transfer systems similar to the Kenyan M-PESA or any other scheme that is practically applicable and requires no or very little infrastructure could be used for e-commerce as an alternative means if the transfer

of goods sold to the buyer can be arranged in some way. The system should allow the transfer of money at least in local currency using existing or cheaply obtainable infrastructure such as mobile phone networks. In the study of the role of Information and Communication Technology Solutions on the Growth of Small and Medium Enterprises in Nairobi County Mwangangi M et al (2014) observed that Mobile payment systems such as Mpesa (provided by Safaricom Kenya Limited), Airtel Money (provided by Airtel Kenya), Orange Money (provided by Telkom Orange) and Yu Cash (provided by Essar Telkom) were the highest adopted by SMEs at 91% of all SMEs surveyed. This was followed by online shopping at 51% and online catalogues for products and services at 40%. Online payment was however not mostly adopted with SMEs indicating adoption at 16%.

Kenya is a cash economy, and the SMEs thrive better by cash transactions. Mobile money transfer systems have therefore improved the conduct of transactions, lowering the cost of doing business leading to business growth. Mwangangi *et al* (2014) in the Nairobi county study, reviewed, found out that it is only electronic payment systems that greatly exceeded the customers' expectations at 78%. The following were ranked as follows; product information at 13 per cent, payment transactions at 15 per cent, product order at a paltry 2 per cent, training at 4 per cent, after sales support at 9 per cent and customers inquiry at 4 per cent. From the study results, 80% of the SMEs used ERP systems in finance/accounting with 56% using the systems in inventory management. The study results also indicated that 51% and 31% used the systems in customer relationship management and human resource management respectively. The health of a firm depends on its financial management. Social media implementation has not left the SME sector with 87 per cent, 71 per cent and 44 percent having adopted Face book, LinkedIn and YouTube respectively. Twitter is not however widely adopted (24 per cent).In the present study whose target is Kericho County, there may be variations based on culture and levels of education and knowledge among employees and managers.

The growth of an organization highly depends on the efficiency of its business processes and effectiveness of the e-commerce tools employed. These tools when widely adopted can enhance sales inquiries, improve payment processing and improve customer loyalty. By adopting CRMs, SMEs would be able to exceed their customers' expectations in providing timely inquiries, as well as elaborate after sales services. These attributes are particularly significant in increasing sales volumes that directly facilitates the growth of the firms. The ERP systems also facilitated the flow of information between all business functions within an organization and external stakeholders thereby providing better financial and stock management of the firms. ERP systems also provide a rich business intelligence and analytics tools which greatly reduce business process turn-around time thereby providing a favorable environment for business growth, (Mwangangi *et al.,* 2014).

Price Waterhouse Coopers (PWC, 1999) conducted a study on small and medium enterprises (SMEs) in the Asia Pacific Economic Cooperation (APEC) area and found that government policies were very important determinants of e-commerce adoption. These policies include improving telecom infrastructure, imposing fair tax policy for online transactions, developing national e-commerce strategy, enhancing government e-commerce use, providing e-commerce training, and promoting e-commerce use. These findings are in agreement with a study in Australia where Chong (2006) notes that finally, the national factor is included in the adoption model in order to provide a macro country-level view of E-Commerce, its adoption behavior and the business environment. The study demonstrates that in addition to the private sector, the governmental sector can also act as a crucial catalyst in stimulating a successful adoption experience for the SMEs.

Previous studies have illustrated that governmental support in funding infrastructure projects, adoption schemes and initiatives have provided direct and indirect stimulation to the supply of information which – as a consequence – produces faster technology diffusion. In the case of the

present study the influences of Government policy especially in influencing the financial resources of the enterprise is hypothesized as positively affecting the adoption of E- Commerce. Governmental subsidy and supports have been demonstrated to have a positive impact on the uptake of IT use and innovative business practice by organizations, especially SMEs (Payton and Ginzberg 2001), [Wagner B.A et al 2003].As noted by Zhang (2005) in a study of Chinese government's work with SMEs, the development of ICT in China's SMEs has experienced four stages.

The first stage, from the beginning of 80's last century to the end of 80's, some national enterprises have been selected by government as experimental unit to develop the application of CAD/CAM and MIS in different levels such as office work, financial management, human resource and operation management. The second stage mainly aims to drive the popularity of computer and encourage more enterprises access to internet, set up e-mail addresses to do business by using IT and improve Management efficiency. The third stage, in the study shows that the major goal is to integrate business and IT in most of the SMEs from 2008 to 2015. In the fourth stage, from 2016 on the base of application of ERP, most SMEs can use ICT in Supply Chain Managements (SCM) and Customer Relationship Management Systems (CRM).

2.2.4 Marketing Resource Factors

Mwangangi (2014) in a study of information and communication technology solutions on the growth of small and medium enterprises in Nairobi county found out that while management of both actual and potential customers poses a major challenge, the extensive use of Customer Relationship Management systems (CRMs) should be adopted to provide an integrated platform for customer profiling, feedback collection and customer communication interfaces. Improved customer experience is obviously a recipe for business growth.

Gaffney (2007) asserts that consumers are increasingly interested in communicating with companies via new and multiple channels such as voice, email, web chat and short message services(SMS).

Erdener Kaynak (2005) in an analysis of the factors affecting the adoption of electronic commerce by SMEs in Turkey describes the marketing benefits of ecommerce as direct savings such as product promotion, new sales channels, quick product delivery, more satisfaction of customers, inexpensive advertising medium, enhanced company image, new business opportunities, efficiency in information gathering and better support from suppliers (Walczuch et al., 2000; Nath *et al*., 1998; Poon and Swatman, 1999). In agreement with the facilitation of the "global village" experience occasioned by advances in ICT technology, Peixin Li et al (2012) in a study on globalization/internationalization and ecommerce, maintain that firms facing foreign competition are under greater pressure to adopt e-commerce, expand market share and operate more efficiently. In consonance, Kraemer *et al.,* (2002), Jaw and Chen (2006) and Gregory et al. (2007) all found a positive relationship between globalization and e-commerce adoption.

Kiveu *et al.,* (2013) asserts that limited access to markets remains a severe constraint to SME growth and competitiveness in Kenya owing to a shrinking domestic market due to globalization. Limited access to market information makes SMEs less aware of opportunities in the market. Overall aggregate demand for the sector's products is low and markets are saturated due to over production and dumping of cheap imports. Markets do not function well due to insufficient information, high transaction costs and stiff competition for similar products. High transaction costs are due to market inefficiencies and information asymmetry. SMEs face difficulties accessing markets due to limited market information, poor marketing capacity and poor market research leading to a discrepancy between the supply and demand.(GOK, 2005; KIPPRA, 2006).

Additionally, Information and Communication Technology (ICT) is identified as an enabler of other sectors (GOK, 2007), presenting enormous opportunities for SMEs to improve market access. ICT is an indispensable tool in the highly globalised, knowledge economy. Market access constraints facing SMEs include; poor quality products, lack of knowledge to explore niche markets, limited resources to promote their products and poor market research. ICT can improve market access by facilitating communication with customers, competitive positioning, enable information acquisition and production of quality products, generation of market information, reduction in logistic costs, facilitating access to global markets, facilitating market research, networking and market transactions. The researcher in the present study identifies with Kiveu *et al*., (2013) that ICT and invariably Electronic Commerce accords SMEs benefits and strategic resource advantages that can enable them surmount most of the challenges facing them.

According to AL-Fawaeer (2014) in a study of Jordanian SMEs , Market and Competitive factors play a key role in the adoption of E-Commerce additionally international e-commerce has provided organizations with a platform that has helped among others: increase revenues; increase the number of customers and suppliers; provide more information about products and business partners. It has also helped these businesses access better products and services; reduce time of doing business and associated costs and improve relationships with their suppliers and customers. These benefits relate well with the main reasons why these organizations started using e-commerce in the first place which are; e- commerce is faster than traditional commerce, has information richness and would help the organization keep up with other organizations. (AL-Fawaeer 2014).

Concerning the aspect of organizational learning as an element of Competency development in SMEs, Katwalo (2009) maintains that since competence development can be linked to organizational learning, the starting point would be that the organizational learning theory

places as much emphasis on the human element as does the definition of competencies,that the better a group of people are at fulfilling the demands of the customer whether internal or external, the greater the competencies the group of people exhibit along with technology and other elements. It is noteworthy that Human Resource factors collectively act as an SME competency which is an enterprise resource which constitutes a key factor in the present study; it is therefore interesting to note the relationship eventually as this study is concluded.

While discussing competitive parity in the deployment of E-commerce (EC) strategies in SMES in Australia, Sandy Chong (2006) maintains that in order to achieve a greater extent of E-Commerce deployment, it is imperative for SMEs to possess an enduring perception of E-Commerce as being advantageous over preceding legacy systems and that its implementation can give them an advantage over their competitors. Grandon and Pearson (2003) provide a divergent position as they assert that late adopters may not gain competitive advantage as much as they may gain competitive parity because most of the surplus value of E-Commerce implementation would be ceded to the earlier adopters. The adoption time therefore has a bearing on the attainment of competitiveness to the effect that those 'late-in-the-day' E-Commerce adopters lose out and instead gain Competitive parity. Thus, apart from encouraging hesitant firms to stop procrastinating and begin making a commitment, it is also essential for SMEs to possess a sufficient degree of optimism and confidence such that a habit of continued deployment becomes the norm for future adoptions of innovation.

In Chong's (2006) study, competitive pressure was positively related to the extent of deployment of Ecommerce, suggesting that the higher the level of pressure experienced to the firm from its competitors, the greater the extent of its E-Commerce deployment is likely to be. This means that the competitiveness of the environment has been found to provide the "push" for SMEs to deploy their existing capabilities. Firms that fear losing customers or market share may expedite

their learning process or expand the use of new systems in order to keep up with what their competitors are doing.

This position buttresses the current study's stance that competitive pressure may have a significant influence in E-Commerce adoption among SMEs. Further according to Chong, the emergence of competitive pressure as a key variable also underscores the need to electronically integrate business operations both internally and externally with trading partners. By being more efficient in business transactions with their partners through faster and more accurate processing, the competitiveness of a given firm would naturally be strengthened, and better links with its customers would be formed. Further support on the aspect of Pressures from customers and suppliers come from Ching *et al.,* (2004) who maintain that this aspect plays a role in the adoption of E-Commerce. They note that the early adopters find that customers are slow to accept e-commerce and the benefits of early adoption have not been realized.(Dos Santos and Peffers, 1998).

On the other hand, viewed from Davila et al.'s (2003) research, supplier's adoption decision also affect whether one firm takes e-commerce or not. By and large, a firms' decision to adopt e-commerce is affected by the adoption of its supply-chain partners, including suppliers and consumers (Shih, 2008) an angle of argument that supports earlier reviews on the role played by external and Competitive factors in the adoption of E-commerce.

While studying problems, prospects, and development of E-commerce in Southern African Development Community (SADC), Swami and Seleka (2005), note that customer characteristics also impact significantly on the firm's decision to adopt e-commerce. Key issues here are: customers' levels of access to the Internet, levels of computer literacy and internet awareness, gender of company's target customers, and age of company's target customers. Customer's characteristics are particularly instructive in developing countries where the access to internet is

low and the level of Information Systems awareness is equally low. Undoubtedly, customers who are using E-commerce and other computer enabled business systems would encourage the SMEs they are dealing with to adopt ecommerce practices since the dealer SMEs e.g. Wholesalers may want to develop interactive websites in order to market and sell their products online.

From Chong's findings among Australian SMEs, Chong (2006), Non-Trading Institutional Influence was found to have an inverse relationship with the extent of deployment of E-commerce. This suggests that those autonomous early adopters that are less likely to be influenced by the publicity and persuasion of certain institutions (such as governments, banks, telecommunication corporations, media, consulting firms or universities) who may tend to explore the possibilities more widely and with greater initiative. Alternatively, those that tend to follow what others prescribe (e.g. laggards or non-initiators) tend to lack the characteristics or incentives to explore, take risks, adapt to new change, and to venture into different avenues for maximizing the potential of new business practices. These are influences from Non-Governmental civil organizations, trade unions and environmental bodies SMEs are usually characterized by a high level of environmental uncertainty that includes fluctuations in interest rates, reliability of supply, and competition. Related to this factor, are the use of IT and EC is often imposed on SMEs by major customers or suppliers. Such pressure from trading partners plays a critical role in encouraging small firms to adopt ICT and E-Commerce (Sandy Chong 2006). This is in line with the present study's position that Enterprise resources occasioned by support from Government and other organizations do influence E-Commerce adoption. In this instance Environmental influences are acting as intervening/moderating variables.

2.2.5 Human Resource Factors

Duncombe and Molla (2006) while studying Human Resource Factors affecting the adoption of ecommerce assert that the factors that propel change forward arise from either 'agent push' or

'SME pull' forces. SME pull refers to ecommerce adoption driven by a combination of internally perceived benefits and management commitment to change (Daniel, 2003; Mirchandani and Motwani, 2001;Poon and Swatman, 1999). In the SME pull context, SMEs control their own choices,are knowledgeable enough to understand the potential of ecommerce and have developed a need for specific E-Commerce solutions as a route to realizing market opportunities.

Katwalo (2009) on emerging themes and cases in internationalization and competence development in SMEs found that there appeared to be a consensus that all SMEs needed to learn; that the learning process was apparent and present throughout the whole process of internationalization. Katwalo (2009) identifies the reliance of competence development on the interplay between people and technology. The present study, has likewise, through empirical reviews established a consistent linkage between people and invariably Human resource capacities, knowledge and skills and E-Commerce adoption among SMEs. On Organization alability Hostager et.al (1998), pin point awareness, knowledge, skill, creative thinking and experience as critical abilities that help businesses to recognize opportunities in the environment. Grewal et.al (2001) defines ability more simply as a two dimensional construct of learning and capability. Atherton and Hannon (2000) argue that SMEs' effectiveness in managing innovation requires the development of internal capabilities related to technical knowhow. Much research into SMEs and adoption of ecommerce technologies has taken a resource based view, stressing the meshing of internal – human, technological and financial resources – leading to the creation of core competencies and competitive advantage in the market place (Caldeira& Ward, 2003; Cobbenhagen, 2000; Yu, 2001; Yap, Soh& Raman,1992).Kanter (1983) identifies three sets of abilities essential for influencing change effectively. These include: a) persuasive skills to convince others to invest in change initiatives and resources b) participatory management, and c) integrating individual change initiatives to wider organizational orientations.

Campbell (1989) on the other hand, argues that the effectiveness of business incubators as change agents depends upon accumulating slack (underused) resources, developing quality management and service provision capability.

According to Duncombe and Molla (2006), organizational ability can be considered in three main categories. Organizational readiness defines as readiness as the stock of human, technological and financial resources that an SME or change agent possesses. These resources shape the input based competencies required to create and deliver products and services to customers or clients. Iacovou (1995) uses financial (availability of finance to pay for ecommerce solutions) and technological resources (level of sophistication of ICT usage and ICT management) as two key indicators of organizational readiness affecting use of E-Commerce. Organizational readiness can also be expanded to include intangible factors (awareness and commitment) particularly relevant to the uptake of ecommerce in developing country environments (Molla, 2004).

In a similar study to the present one carried out in Malaysia, Hashim and Noor (2014) discuss experience overseas as a human resource factor which influences the adoption of Electronic Commerce. They aver that the benefits of living overseas are exposure to new languages, ways of thinking, and first-hand experience of other cultures (Schulz, 2001). Managers who had overseas experience were able to adapt ideas and concepts proven successful in the developed markets to their own countries, which in turn could bring more advantages to their firms (Rodriguez, 2005). Having overseas experience allows the SME managers to have broad understanding on handling businesses in foreign countries (Inkson *et al*., 1997), thus encouraging them to be more open to e-commerce (Rodriguez, 2005). The present study examines experience as a key construct among Human resource factors which affect the adoption of E-commerce.

Organizational Capability may be defined as the relationship between the tangible resources and other intangible resources that give rise to knowhow. Capability emphasizes invisible assets such as organizational reputation built up over time and embedded in SME routines. Coyne (1986) in Hall (1993) gives a number of highlights: a) Regulatory capability, which arises from the possession of specific knowledge resources primarily intellectual property rights (IPR), contracts (formal or informal) and trade secrets; b) Positional capability, which refers to the unique positions and reputation developed within commodity chains; c) Functional capability, which relates to the knowhow, skills and experience of employees and other members of the SME or SME network (such as clients and suppliers) to do specific tasks.

Ajmal (2012) on Electronic Commerce Adoption Model for Small & Medium Sized Enterprises in Malaya Malaysia found out that the support and enthusiasm of management are very important for SMEs in successful adoption of E-Commerce. Poon and Swatman (1999) and Rashid and Al Qirim (2001) found that the manager or CEO's innovativeness, and IT knowledge has a positive effect toward adoption of e-commerce. Individual characteristics such as age, education, experience, and physiological traits of CEO are essential part toward adoption of internet technology in SMEs. Hassen (2012) found out that according to a manager, businesses in Ethiopia are not catching up with the rest of the world since there are limitations of infrastructure and the services required to utilize the opportunities that could be grasped by utilizing the internet and e-commerce. The manager believes that the opportunities for adopting e-commerce systems are growing very fast in Ethiopia in recent years from the technical as well as banking sector. The remaining step, according to him, is building the infrastructure capacity and introduction of a better policy that allows adoption of online transactions at the same time keeping the intended money flow balance of the country.

In a study of SMEs adoption of E-commerce in Nairobi Mutua *et al.,* (2013), explain the link between managerial attitudes and ecommerce; that research shows a strong link between

management attitudes towards e-commerce and the level of e-commerce adoption. The characteristics of senior management play an important part in the level of ecommerce adoption (Al-Qirim, 2003). The involvement and interest of senior management in e-commerce initiatives would lead to the deployment of additional resources devoted to e-commerce implementation (Al-Qirim, 2003). Hashim and Noor (2014) while discussing the findings of the Adoption of E-Commerce in SMES in Malaysia note the effects of SME Manager's Characteristics as a Human resource factor affecting the adoption of E-Commerce. According to them, it has traditionally been argued in the IT literature, that the organizational characteristics, such as industry sector, size, and age, and managerial characteristics such as manager age and education play an important role in the firm's e-commerce adoption (Scupola, 2003; Chuang *et al.*, 2007). There is an indication that these factors have some positive relationship with e-commerce, particularly ICT adoption. For example, Hashim *et al*. (2011) found that SMEs in the service sector adopt e-commerce readily more than SMEs in the manufacturing sector, buying online is dominated by smaller SMEs and younger SMEs seem to adopt e-commerce more frequent that older ones. On the other hand, managerial factors, such as level education and age of a SME manager, have been found to have to have a positive influence on technology adoption of firms (Cragg and King, 1993; Igbaria *et al.*, 1997; Chuang *et al.*, 2007; MacGregor and Vrazalic, 2007). Managers with a higher level of education would adopt technology in their firms. Level of Education and especially level of training in ICT has been established as having a strong effect in the adoption of E-Commerce among SMEs in Kericho County, Kenya.

Rahayua *et al.,* (2015) while discussing findings from a study of E-Commerce adoption among SMEs in Indonesia maintain that individual factors act as determinant factors of e-commerce adoption by SMEs in developing countries. This is because mostly in SMEs a strategic decision is highly dependent on the manager/owner. (Cloete, Courtney, and Fintz (2002) revealed that the e-commerce adoption by SMEs extensively depends on the acceptance of e-commerce

technology by the owner of business. This is reasonable, because structurally SMEs tend to centralize, hence the owner/manager have an important role in any business decision making (Nguyen & Waring, 2013). In this study, three individual contexts: owner innovativeness, owner IT experience and owner IT ability are identified as determinant factors that influence SMEs in adopting e-commerce. In this study, innovativeness refers to the degree to which a manager who tends to seek a solution by changing the structure where the problem is located is usually considered an innovative manager (Thong & Yap, 1995). It implies that the innovative manager prefers to search for a solution that has never been tried before and therefore is more risky. As a technology innovation, e-commerce also has risk, especially if it is applied in small business and even more in developing countries. Hence, the more innovative the SMEs owner, the more likely they have an intention to adopt an e-commerce application (Ghobakhloo & Tang, 2013). In this study, owners' IT ability and experience are also identified as determinant factors of e-commerce adoption by SMEs in developing countries. As commonly known, insufficient IT skills is one common SME problem. If the SME owner has greater ability and greater experience with IT, they will be confident in adopting IT and it will reduce the uncertainty and risk in that technology adoption. In addition to this, it is also believed that user skill and knowledge can assist and increase the speed of technology adoption (Morteza *et al.,* 2011). More importantly, it assumes that if manager/owner comprehends the function and advantages of e-commerce adoption, they may be more pleased to adopt such technology. The present study is in agreement with the findings which have confirmed Human resource aspects as explaining a high variability in explaining E-Commerce adoption.

Jamali (2015) in a discussion of a study in Iran on Factors Influencing Electronic Commerce Adoption among Iranian Family SMEs agree with Hashim and Noor (2014) that Individual factors and manager characteristics have a significant impact on E-Commerce adoption(Thong, 1999) The individual readiness context in this research encompassed the individual factors as

well as the ‘Perceived Usefulness’, because the electronic commerce awards are not integral to the innovation as such but are related to how are perceived by a CEO as a dominant decision maker in such businesses. It is worth to note that, ‘Perceived Usefulness’ was previously grouped in the ‘Technological’ Context. In Jamali’s study, based on the study of Wu and Wang (2005), the ‘Environmental pressures’ as the forth context of model in the study of Kurnia and Alzougool(2008), which refers to the perceived internal and external pressures by the CEO to comply the electronic commerce adoption, was represented by ‘Subjective Norm’ as the CEO’s perception of people who are important to them should or should not perform the behavior and grouped under the ‘Individual’ readiness context. Moreover, the concept of environmental effects and their related factors in the literature were grouped under ‘National readiness context in the current study. As a result, in this research the related factors were categorized in the four contexts in an E-Commerce adoption framework; in family SMEs, involving Individual, Organizational, Industrial and National readiness contexts. The four main contexts undertook the related factors as results of joining the most used theoretical models in SMEs and the relevant additional factors studied in the prior SMEs and family SMEs literature and/or extracted from the exclusive family SMEs’ literature based on the similarities.

Mwangangi *et al.,* 2014 cites management and employee knowledge and skills as a factor in E-Commerce adoption; that because of the low staff complement, and inadequate specialized skills like in ICT, SMEs should consider outsourcing these tasks to specialized third party organizations. This would ensure cost effectiveness in the provision of ICT services while at the same time enabling the firms to concentrate on their core business activities. Irefin’s study (Irefin *et al*., 2012) of Nigerian SMES confirms that management support has a positive relation to the adoption of ICT in SMEs.

Human resource factors include Management which refers to senior-level leaders including presidents, owners, and other high ranking executive and senior-level managers. Several

researchers have emphasized the effect of management on strategy implementation (Hrebiniak& Snow, 1982; Smith &Kofron, 1996; Schmidt &Brauer, 2006; Schaap, 2006). Most of them point out the important figurehead role of management in the process of strategy implementation. Schmidt and Brauer (2006), for example, take the board as one of the key subjects of strategy implementation and discuss how to assess board effectiveness in guiding strategy execution. Hrebiniak and Snow (1982) find that the process of interaction and participation among the top management team typically leads to greater commitment to the firm's goals and strategies. This, in turn, serves to ensure the successful implementation of the firm's chosen strategy (cited in Dess&Priem, 1995). Smith and Kofron (1996) believe that top managers play a critical role in the implementation – not just the formulation of strategy. This is in agreement with Yang et al (2008) who outline that Managerial attitudes indeed play a critical role in decision-making. Even if two firms have the same level of resources and operate in the same context, they might make different adoption decisions. Here top managers exert a tremendous influence (Molla and Licker, 2005).Early adopters are often headed by risk-taking CEOs and they often hold positive attitude toward new technology. Wang and Cheung, (2004) and Schaap (2006) carried out an empirical study and tested the following hypotheses: effective senior-level leadership behaviors will be directly related to successful strategy implementation. This hypothesis, however, has resulted in mixed support; those senior-level leaders who have been trained in or studied strategic planning and implementation are more likely to meet the performance targets set for the company. This hypothesis also resulted in a weak confirmation. More empirical research is needed to clarify the role of top management for strategy implementation. Accordingly, this study seeks to determine the relationship between E-Commerce adoption and Human resource factors which managers form part of.

In Chong's (2006) study among Australian SMEs she makes this observation; another recurrent observation is that E-Commerce adoption seems to be more of a management issue than a

technical one (Corbit et al 2007). Many researchers have found that if there is a lack of support amongst top executives, technology cannot be successfully adopted (Corbitt *et al*, 1997, Cooper and Zmud 1990,Grandon and Pearson 2003,Lertwongsatien Wongpinunwatana 2003 and Premkumar 1995). The present study based on these empirical findings state that there is a high likelihood of Human Resource factors being confirmed as having a significant influence in E-Commerce adoption.

The characteristics of senior management play an important part in the level of E-Commerce adoption (Al-Qirim, 2003). This is because the present study emphasizes the determining effect of Employee Competencies and Level of ICT knowledge in the adoption of E-Commerce. The involvement and interest of senior management in e-commerce initiatives would lead to the deployment of additional resources devoted to e-commerce implementation (Al-Qirim, 2003).Issues considered by SMES to be strategically important have been assessed (Quayle, 2002). Issues of marketing, leadership and waste reduction have been given highest priority, while supplier development, financial management, time to market and supply chain management have a medium priority. Perhaps unsurprisingly, the lowest priority was given to technology, research and development and customer management – all closely related to e-commerce.

From Chong's (2006) study several factors that influence the adoption of innovation are deduced since E-Commerce in this study is an innovative business practice. Of most commonly investigated characteristics that promote the adoption of innovation, the best known may be those developed by Rogers (1995). These innovation factors have also been the key feature to several other IT adoption studies (Iacovou et al 1995),(Kwon and Zmud 1987),(More and Benbasat 1991),(Tornatzky and Klen 1982). In her study, they are adapted as follows: perceived relative advantage(i.e. the perceived EC benefits and impact relative to its existing practice or system), compatibility (how well EC fits in both technical and organizational processes),

trialability (the degree to which EC can be pilot tested or experimented without high start-up costs), complexity (ease of use or the ease with which EC can be learned) and observability (the extent to which EC advantages or gains are visible to firms).

While discussing organizational factors in their study, Uzoka and Seleka (2007) underline the following organizational factors as major determinants in a firm's decision to adopt e-commerce. Variables such as level of funding available for retail development on the Internet, senior management's level of commitment to e-commerce, company's Internet development strategy, level of human resources available, web design skills of company personnel, management vision of the usefulness of the Internet and conviction about the benefits of e-commerce are key organizational issues identified to affect e-commerce adoption. Knowledge therefore is a factor which affects the use and the decisions to migrate to ICT enabled business systems.

In a study of E-commerce adoption by SMES in Sri-Lanka and while discussing organizational factors affecting E-commerce adoption in Small and Medium-sized Enterprises, Senarathna *et al.,* (2011), explain that the top managers' opinion towards innovation showed a positive relationship with e-commerce adoption. Top managers' opinion towards innovation influences the way of doing business by the firm and having personal computers had not had an impact on e-commerce adoption. E-commerce is not about technology but about a new way of treating customers and suppliers.

A dynamic website, rather than a static one is capable of enabling more e-commerce activities, or enabling a higher level of e-commerce adoption. E-commerce is a paradigm shift that is radically changing traditional ways of doing business; therefore, it is fundamental to change the mindset of management to a dynamic way of doing business. In practice, due to the significant impacts of the organizational factors on the adoption of e-commerce that have been identified here, the SME managers should determine the most effective measures to take in order to advance and promote the adoption, and the degree of use, of e-commerce in SMEs in Sri Lanka.

In line with Fatima Ajmal (2012), people are considered the most important part toward adoption of e-commerce in SMEs. The individual factors consist of customer, staff, and management of business as they are the ones greatly affected by the adoption of e-commerce. The education and awareness of these people consider being most important, before and after implementation of e-commerce. Many organizations delay the adoption of e-commerce because lack of internal enterprise resources (Tan and Teo 1999). Therefore, education and awareness along with IT skill and expertise is necessary for any organization toward adoption of e-commerce as implementation of new techniques may need change employees work attitude, qualification, performance, knowledge of e-commerce.

If employees have already known about e-commerce, the organization will be more disposed to adopt e-commerce (Thong 1999).The present study underscores the determining effect of Human resource factors on Electronic Commerce adoption among SMEs in Kericho, Kenya which surround people and their management characteristics, attitudes to risk, skills development, innovativeness and decisiveness.

2.2.6 Technological Resource Factors

Irefin *et al*., (2012) in a study among Nigerian SMES posit that the availability of ICT infrastructure is an important factor that inhibits the adoption of ICT by SMEs. If there is adequate ICT infrastructure in the country, it will be easier for SMEs to adopt it rather than running away from it. Kapurubandara *et al.,* (2006), in her study found that the availability of internet facilities, telecommunication services as some of the factors affecting the adoption of ICT by SMEs in a developing economy. Ajmal *et al.,* (2012) while studying Electronic Commerce Adoption Model for Small & Medium Sized Enterprises in Singapore asserts that Technological components involve the various internet technologies including support systems like decision support system and distributed application and algorithm/methodology that assist, enhance or improve E-Commerce application.

Irefin *et al.*, (2012) cites, government support as one of the factors militating against the adoption of ICT by SMEs in Nigeria. It is widely believed that ICT adoption and utilization is predicated on availability of physical infrastructure, legal and regulatory issues, adequate research and development, and proper policy. All these can be put in place only when there is adequate support from the government. According to Mpofu *et al.*, (2011), SME characteristics that may be considered are: ICT readiness; external pressure from customers; suppliers and competitors; the business structure; size; sector, and status; and information intensity. In previous studies, SME e-commerce adoption environments have usually required an understanding of the background and constituents of ICT by undertaking e-readiness studies (Duncombe & Molla, 2009; Mutula & Van Brakel, 2007; Molla and Licker, 2005a; 2005b).

As reported by the UN policy brief (2014) on the strategic role of E-Commerce among SMEs; a survey conducted in Ethiopia in 2008 indicate that 45 per cent of the enterprises sampled had made orders for the purchase of goods and services through the Internet. The respondents believed that using ICTs in their business could help them in (percentage of the respondents that responded positively is indicated): reducing transaction costs (93 per cent); improving customers' satisfaction (75 per cent); expediting transactions (65 per cent); and avoiding corruption (43 per cent). Empirical research shows that small enterprises that adopt e-commerce perform better than those that do not adopt it due to e-commerce's catalytic effect on business performances. One study found that in the 1990s, many SMEs in East Africa, though in a limited scale, started to embrace ICTs as a growth intervention tool. (UN Policy Brief 2014). The present study notes the role played by E-Commerce adoption and usage in reducing instances of corruption, a menace that has been known to be prevalent across businesses in Kenya. Further research is however required to determine the specific manner in which E-Commerce adoption would reduce corruption and other unethical practices.

While discussing the technological context in a study of E-Commerce adoption determinants in Indonesia Rahayua *et al.,* (2015) assert that the technological context refers to those aspects such as perceived benefit, compatibility, and cost, which influence the adoption of e-commerce technology. The perceived benefit refers to the degree of acceptance of the possible advantages that e-commerce technology can provide for the organization (Tiago & Maria, 2010; Iacovou, Benbasat, & Dexter, 1995). Greater managerial understanding of the relative advantages of e-commerce adoption raises the probability of that company allocating some resources, such as managerial resources, financial resources and technological resources, to adopting e-commerce technology. Compatibility refers to what extent e-commerce is appropriate with technology infrastructure, culture, value, and work practices that already exist in the firm (Morteza, Daniel, & Jose, 2011). An innovation will be easily accepted in an organization if it is tune in with the prevailing values of that organization and can meet the needs of organization. Such technological aspects make up the aspects under scrutiny in the present study.

IT infrastructure is the technical base of the ERP system. Just like other information systems, ERP needs stable and effective software, the hardware, the memory and the service and so on (QuFenggeng (2012). Thus, the enterprises must fully consider a series of questions such as software, hardware, service, integration, network design, support systems, resources disposition, and so on. Irefin (2012) in a Nigerian study maintains that the availability of ICT infrastructure contributes significantly to the adoption of ICT in SMEs. This is because if there is proper policy for telecommunication equipments and services in the country there will be increase in the usage of ICT in the businesses.

ICT has provided new ways to store, process, distribute and exchange information within companies and with customers (Kollberg and Dreyer, 2006). Information and Communication Technology (ICT) refers to a wide range of computerized technologies. ICT is any technology that enables communication and the electronic capturing, processing and transmission of

information. These technologies include products and services such as desktop computers, laptops, handheld devices, wired or wireless intranet, business productivity software such as text editor and spread sheet, enterprise software, data storage and security, network security and so on (Ashrafi and Murtaza, 2008). This piece of empirical evidence provides a demarcation and provides boundaries between the infrastructure and the utility aspect and invariably ICT enabled E-commerce. ICT removes distance and time constraint in accessing required information flows and hence improves coordination of activities within organizational boundaries (Spanos *et al*., 2002). It enables the diffusion of organizational data that can be crucial input for effective decision making and control at all levels. ICT helps in organizational planning thereby improving organizational communication and flexibility (Spanos *et al*., (2002).The present study supports this position although it is worth noting the role of top managers in influencing e-commerce adoption since they are the key decision makers.

Erumban and de Jong (2006) explain that ICT has created a revolution by making the world seemingly smaller and improving potential economic growth to the extent that the previously unknown lands, the then African "dark continent", the Far East and all the historically "inaccessible" parts of the world can now be accessed courtesy of technological breakthroughs in ICT. While reviewing literature on Information and Communication Technology adoption, Ongori, H., & Migiro, S. O. (2010) state that ICTs' adoption in SMEs has assisted to provide a means to access, process and distribute greater amounts of data and information quickly, in order to make thoughtful decisions. Their study's limitation however is that it only reviews secondary literature relevant to E-Commerce adoption but there is lacking primary data. This study intends to fill this gap in order to buttress or dispel the positions held by these authors since it will rely on empirical findings based on a sample population of SMEs in Kericho County.

According to Sharon and Squires (2008), advances in technology and communications have created different forms of communication, dialogue and identity. This is in agreement with

Organization for Economic Co-Operation and Development, (2004),whose study notes that ICT and e-commerce offer benefits for a wide range of business processes. At firm level, ICT and its applications can make communication within the firm faster and make the management of the firm's resources more efficient. Seamless transfer of information through shared electronic files and networked computers increases the efficiency of business processes such as documentation, data processing and other back-office functions (*e.g.* organizing incoming orders and preparing invoices). Further, sophisticated ICT applications such as Knowledge Management System (KMS) and Enterprise Resource Planning (ERP) allow firms to store share and use their acquired knowledge and know-how. Customer databases with a history of client-specific correspondence help managers and employees to respond more effectively to customers. A company-wide electronic data source aims to disseminate employees' professional experience, for example tips for winning a contract, from which others in the firm can learn. This position is yet to be ascertained by a Kenyan study and therefore in the discussion of findings of the present study comparisons will be made to ascertain this.

Hassen (2012) found that corporations seem to engage their businesses with high tech ICT equipments and sophisticated systems run by their highly qualified employees. While small enterprises usually adopt only a small portion of technology's vast potentials, some also do business solely on the internet. Among other reasons that determine the extent of ICT usage is the impact of complex interactions that exists in many small firms such as with family, friends, other businesses and e-business solution providers (Parker &Castleman 2007: 22).

2.2.7 Summary of Empirical Reviews and Research Gaps

Table 2 .1 identifies a summary of the key empirical reviews covered; research gaps identified and suggested recommendations.

Table 2.1 Summary of Reviews and Research Gaps

Author, Year	Topic, Focus of study	Gaps	Recommendations
Ajmal, Fatma &Norizan Binti Mohd Yasin (2012).	Electronic Commerce Adoption Model for Small & Medium Sized Enterprises in Malaysia	Internal and external factors Only covers business to consumer E-commerce and not B2B, B2G, C to C. Does not cover Marketing resource factors. A literature Review or internal and external ecommerce adoption factors. Primary study necessary.	Further research is necessary in other parts of the world especially in a Kenyan context to cover B2B,B2G ,Marketing Resource factors and C to C areas of E-Commerce. Future research should consider primary data collection
Agwu M. E, Murray J. P,(2014)	Drivers and Inhibitors to E-Commerce Adoption among SMEs in Nigeria	Carried out in a Nigerian context Considered qualitative study as justified by dearth in empirical data. Sampling method unclear All the SME types are 10% .This is unrealistic; the method used to derive this is not clear. Focused on problems and effects of e-commerce adoption [not the influences]. Among internal Enterprise factors study only covers trained labour, and resource availability	Similar studies proposed in Kenya and other jurisdictions. Future study to be descriptive and quantitative with a clear sampling procedures More studies necessary to cover external or internal factors exclusively.
AL-Fawaeer M.,(2014)	Exploring the Relationship between E-Commerce Adoption and Business Strategy: An Applied Study on the Jordanian Telecommunication Companies,	Study compares Ecommerce adoption and business strategy Restricted to mobile communication companies in Jordan Only compares e-commerce adoption and how it affects business strategy [i.e. Internal factors, market	Similar study in other countries proposed both for comparison of findings and to enable relevant policy support to the industry in question Future studies with clear sampling procedures are proposed especially in Kenya

		factors and competitive factors] Does not consider enterprise resource factors Study covers 100 managers sampling method not clear.	More studies are proposed to cover different SME sectors other than Telecommunications.
Barba-Sánchez, Maríadel PilarMartínez-Ruiz, Ana Isabel Jiménez-Zarco, (2007)	Drivers, Benefits and Challenges of ICT Adoption by Small and Medium Sized Enterprises (SMEs): A Literature Review in Spain	A literature review-no advantage of primary data Analyses SMEs in OECD countries Focuses on the SME Entrepreneur and the benefits of ICT adoption	Proposed similar studies to collect primary data in different regions
Chong, S. (2006)	An Empirical Study of Factors that Influence the Extent of Deployment of Electronic Commerce for Small- and Medium sized Enterprises in Australia	Carried in an Australian context. Uses purposive sampling. Used email, web and mail survey. 23.7 % response rate Covers innovation, communication not internal enterprise resources.	Similar studies proposed in other countries Studies proposed to cover internal enterprise resource factors since the study reviewed only covered innovation and communication. Future studies should involve larger samples A longitudinal study is proposed to establish the soundness of the theoretical frame work of extent of deployment for SMES as proposed by the author.
Chuang, T. T., Nakatani, K., Chen, J. C. H. and Huang, I. L., (2007)	Examining the Impact of Organizational and Owner's Characteristics on the Extent of E-commerce Adoption in SMEs in Malaysia	Covers organizational and SME owner characteristics. Focuses on impact of owners' characteristics. Results indicate that managerial experience exerts a positive influence on E-Commerce adoption. Study Confirmed that extent varies based on enterprise types. Study bears very close similarities to the present study.	Future studies proposed in other jurisdictions to exclusively cover internal organizational factors which then may compare directly with the present study.
Duncombe, R., & Molla, A. (2009)	Formalization of Information Systems in Sub-Saharan African	Identifies internal and external factors affecting e-commerce adoption. Recognizes skills by	Studies proposed on similar lines to scrutinize the formalization of E-commerce which is an

	Small and Medium Enterprises: Case of Botswana.	employees as determining adoption of e-commerce in Botswana. Discusses formalization of Information systems[Human based, paper based , ICT based] Uses such constructs such as Entrepreneur factors, Enterprise characteristics Resource constraints considers external resources.Used interviews and observations.	aspect in Information systems adoption. Since the study used interviews and observations, more studies are proposed which may utilize other scientific methods for comparison of results and to facilitate more precise and specialized policy support for the E-Commerce industry.
Faith-Michael E. Uzoka , Geoffrey G. Seleka, (2007)	Organizational, Environmental and Technological Determinants of E-Commerce Adoption in Botswana	Study area appears too wide; Covers organizational, Technological and Environmental determinants Covers internet marketing, management commitment, funding ,Human Resource competence , Managements vision and Perceived relative advantage.	Future proposed study to focus either on Organizational, Technological or Environmental determinants exclusively in order to reap the benefits of focus and specialization.
Ghobakhloo, M., & Tang, S. H. (2013)	The role of owner/manager in adoption of electronic commerce in small businesses: The case of developing countries. A study of 268 owners/managers in Iran	Study's findings perceived benefits, perceived compatibility , perceived costs and innovative found to be significant determinants of decisions to adopt E-commerce.	Similar studies proposed in both developing and developed country contexts to compare results and enable robust policy support to SME growth.
Golubova, S.(2012)	E-Commerce Adoption and Implementation Strategy for a High-Tech Firm. Studied a high technology firm in Netherlands	Results cannot be generalized since only a case study of one firm was conducted. Results are based on 13 surveys only and three interviews Several conclusions are based on perception Firm assessed only for two months. Considered internal and external factors only.	Studies proposed to cover a diverse number of SME types using a Longitudinal approach as opposed to the study in review which used a case study approach. More large scale survey recommended/proposed to use other scientific research methods Since the firm was studied for only two months future studies are proposed to cover longer assessment

			periods.
Hassen ,Y.A(2012)	Role of ICT for the growth of small enterprises in Ethiopia Study carried out in Ethiopia	Findings may be limited to the five SMEs in Ethiopia Used interviews. Purposively selected Five SMEs	More similar studies proposed in other jurisdictions More research to cover wider range of SMEs and Ecommerce for larger Organizations
Hashim N.A.,and Noor S.M (2014)	An Investigation of Key Adoption of E-Commerce in SMEs in Malaysia. Study covers effects of managers experience of living abroad and SMEs location .	Recommendations; Only covers two Internal enterprise aspects. Limited to Malaysia items of policy . Only uses number of employees only as a definition of SMEs. Only overseas experience and SME location used as factor. Knowledge and skill and Level of education not covered.	Proposed studies in other jurisdictions to cover more factors either in the Internal or external environment. A study using other parameters to determine SMEs other than employee numbers proposed.
Irefin, I. A.,(2012).	An investigative study of the factors affecting the adoption of information and communication technology in small and medium scale enterprises in Nigeria.	Studied 20 Industrial SMEs in Lagos state. Cost, Business size, ICT infrastructure, Government support and management support studied Generalizability of results is limited. SME/E-Commerce conditions may differ from state to state. Missing manager demographics e.g. gender, race level of education. Sample size is rather small;	Proposed studies to cover more states in Nigeria and other parts of the world to improve on the generalizability of results. More studies to include other SME sectors

		total number of SMEs in Lagos state not shown.	
Kapuruba ndara, M., and Lawson, R. (2006)	Barriers Adopting ICT and E-commerce with SMEs in Developing Countries: An Exploratory Study in Sri Lanka. Exploratory study	Studied, owner manager characteristics. Firm characteristics Cost and Return on Investment Studied external and internal barriers . In Colombo District[capital] Study based in a City-not rural/county. Considered enterprises with 10-250 employees.	Further similar studies proposed in rural /county towns as long as ICT and Internet facilities are available. More studies may be necessary to cover SMEs with more diverse/inclusive definitions
Kinuthia J. N. K. and Akinnusi D.M. (2014)	The magnitude of barriers facing e-commerce businesses in Kenya.	Study found telecommunications infrastructure as a key barrier. Covers external and internal factors . Internet survey conducted.. Looks at Individual barriers e.g. employees habits Perceived usefulness, Organizational factors, Finance, Training among the constructs. Covered only 173 respondents in an internet survey Sampling method not clear Most of the respondents covered were in IT and Finance sectors	Given that the study was an internet survey and considering the internet penetration in Kenya ,it is prudent to carry out more studies using more scientific and relevant sampling and data collection methods
Kiveu, M and Ofafa, G. (2013).	Enhancing market access in Kenyan SMEs using ICT	Used secondary data; the author recommends that a field survey be done to collect primary data on the same for further analysis Study scrutinizes the role of general ICT in market access by SMEs and not E-commerce aspects	More studies are proposed which utilize other data collection methods over and above secondary data used by the study under review in order to provide more insights to the understanding policy formulation and subsequent growth of ICT based/E-Commerce Marketing by SMEs. Further research can also be carried out to investigate the correlation of market access

			versus the use of ICT.
Mwangangi, S.M., Ombuki ,C., and Odote, G.,(2014)	Role of Information and Communication Technology solutions on the Growth of Small and Medium Enterprises: Case of Nairobi County.	The study concerns the role of ICT solutions among SMEs and not E-commerce aspects Covers customer Relationship Management systems (CRM), Enterprise Resource Planning (ERP) systems, and use social media technologies in the growth of SMEs Study covers Nairobi City.	Studies proposed to cover rural environments and E-Commerce aspects in areas covered by internet access
Mpofu, K.C., & Watkins-Mathys, L. (2011).	Understanding ICT adoption in the small firm sector in Southern Africa.	Study covers Information and Communications technology (ICT) adoption among small hotel businesses in South Africa, Botswana and Zimbabwe. It is qualitative research based on seven case studies that fall within the South African and European Union small and medium enterprises (SMEs) definitions. - Case studies are constructed on the basis of 60 semi-structured interviews and supporting secondary data. Urban locations of Johannesburg, Gaborone and Harare covered in the study giving its findings an urban skew.	More studies required among rural based SMEs especially in Eastern and Western Africa given that the study in review covered cities in Southern Africa
Mutua,J., Oteyo,I.N., Njeru, A.W., (2013)	The Extent of E-Commerce Adoption among Small and Medium Enterprises in Nairobi, Kenya	Carried out in Nairobi City as opposed to rural based SMEs The study only covers the external factors affecting the extent of e-commerce adoption. No assessment of internal resource factors affecting	Given that the study covers external factors affecting the extent of e-commerce it is necessary to propose studies covering other factors e.g organizational/internal affecting E-commerce adoption. The study in review is urban based. It is proposed

		adoption of ecommerce carried out. Present study being urban based presents gap and lack in that its findings cannot be generalized to rural/county settings.	therefore that studies are required to cover rural based SMEs akin to the present study.
Ngugi, B, Pelowski, M, Ogembo, JG 2010	M-PESA: A case study of the critical early adopters' role in the rapid adoption of mobile money banking in Kenya	Considers the outstanding challenges experienced by users, possible solutions and future trends. Covered through a critical review of existing literature, secondary data and a survey targeting mobile phone users living in the major urban centers	More studies proposed in Kenya given that Electronic funds transfer, MPESA service is an e-commerce aspect pioneered in Kenya. Studies in rural Kenyan counties proposed since the study under review was carried out in major urban centers deemed to be early adopters
Ochola P.B.O., (2013)	E-commerce adoption among Micro, Small and Medium Sector in Nairobi County, Kenya.	Considered Organizational, environmental, and Technological Factors. Carried out only among non manufacturing firms Study is urban based(carried out in Nairobi Kenya)	More studies proposed to cover varied SME sectors since the study under review was carried out only among non manufacturing firms Rural based studies proposed since the study under review was carried out in Nairobi Kenya.
Rahayua, R., Daya,J. (2015)	Determinant Factors of E-commerce Adoption by SMEs in a Developing Country: Evidence from Indonesia	The only relevance to the present study are individual and organizational factors. Study conducted in Indonesia; a South East Asian Environment. Technological factors covered are Perceived Usefulness and Perceived Ease of Use.(owner characteristics) It Combines technological readiness with IT human resources A very low response rate of 8.9% Used online questionnaire presupposes ability to fill questionnaire online.	Studies are proposed to cover other- country environments to facilitate specific generalizations. The gap resulting from the very low response rate (8.9%) and possibly the use of online questionnaire needs to be cured through other studies using other scientific data collection tools.
Shemi A.P., (2012)	Factors Affecting E-commerce Adoption in Small and Medium	Used interviews, telephone –website content. In-depth case studies on 9 selected SMEs in Botswana.	Studies proposed to cover other countries using diverse and clear scientific data collection methods

	Enterprises: An Interpretive Study of Botswana.	Selection method not mentioned. Only relevance to present study is managerial characteristics, perception and use of ICT.	
Seyed Kaveh Jamali (2015)	Factors Influencing Electronic Commerce Adoption: A Case Study of Iranian Family SMEs	Study covered only family owned SMEs only in Iran It used qualitative data analyzed through deductive content Only purposive sampling used Six persons interviewed by phone	Study required to cover all SME sectors regardless of ownership. Study required probably using longitudinal methods and more objective data collection and hypothesis testing methods
Tiago, O., & Maria, F. M. (2010)	Understanding e-business adoption across industries in European countries. Industrial Management & Data Systems,	Study covers factors that affect the adoption of e-business by firms belonging to European Union (EU) countries Covered two different industries: telecommunications and tourism.	Studies proposed to cover other countries and a more diverse range of SMEs
Wanjau Kenneth, Macharia N. Rebecca Ayodo Eunice M. A.(2009).	Factors Affecting Adoption of Electronic Commerce among Small Medium Enterprises in Kenya: Survey of Tour and Travel Firms in Nairobi	Study covered Tours and Travel Firms. Covered the effects of leadership styles, resources, infrastructure and competition on the adoption of electronic commerce Covered 350 tour firms using survey method.	Although it is a key and relevant study in Kenya ,more studies are proposed to cover a diverse range of SMEs preferably in a county setting.
Ali R., A., Ali M Mostafa J [2013]	Factors affecting E-commerce adoption in SMEs in the Industrial towns of Zayan-Iran; managers perspectives - Carried out in Iran	Factors affecting adoption process covered by the study include Intensity of competition, organizational characteristics' strategic orientation and of innovation managers Sampled 98 managers out of 185 SMEs	More studies recommended in other-country contexts covering non industrial towns and varied SME sectors

2.3 Conceptual Framework

A conceptual framework is a figurative, organized depiction of the causal and response factors in a research study, (Shields and Hassan Tajalli, 2006). Baum, K. (2003) and Shields, *et al.*, (2013) assert that conceptual frameworks are useful as organizing devices in empirical research. Some scholars use conceptual framework in deductive, empirical research at the micro- or individual study level. According to Mugenda and Mugenda (2008) a conceptual framework is a concise description of the phenomenon under study accompanied by a graphical or visual depiction of the major variables of study. For this study, the Conceptual framework in Figure 2.2 outlines the relationship between different factors influencing the adoption of E-commerce by SMEs.

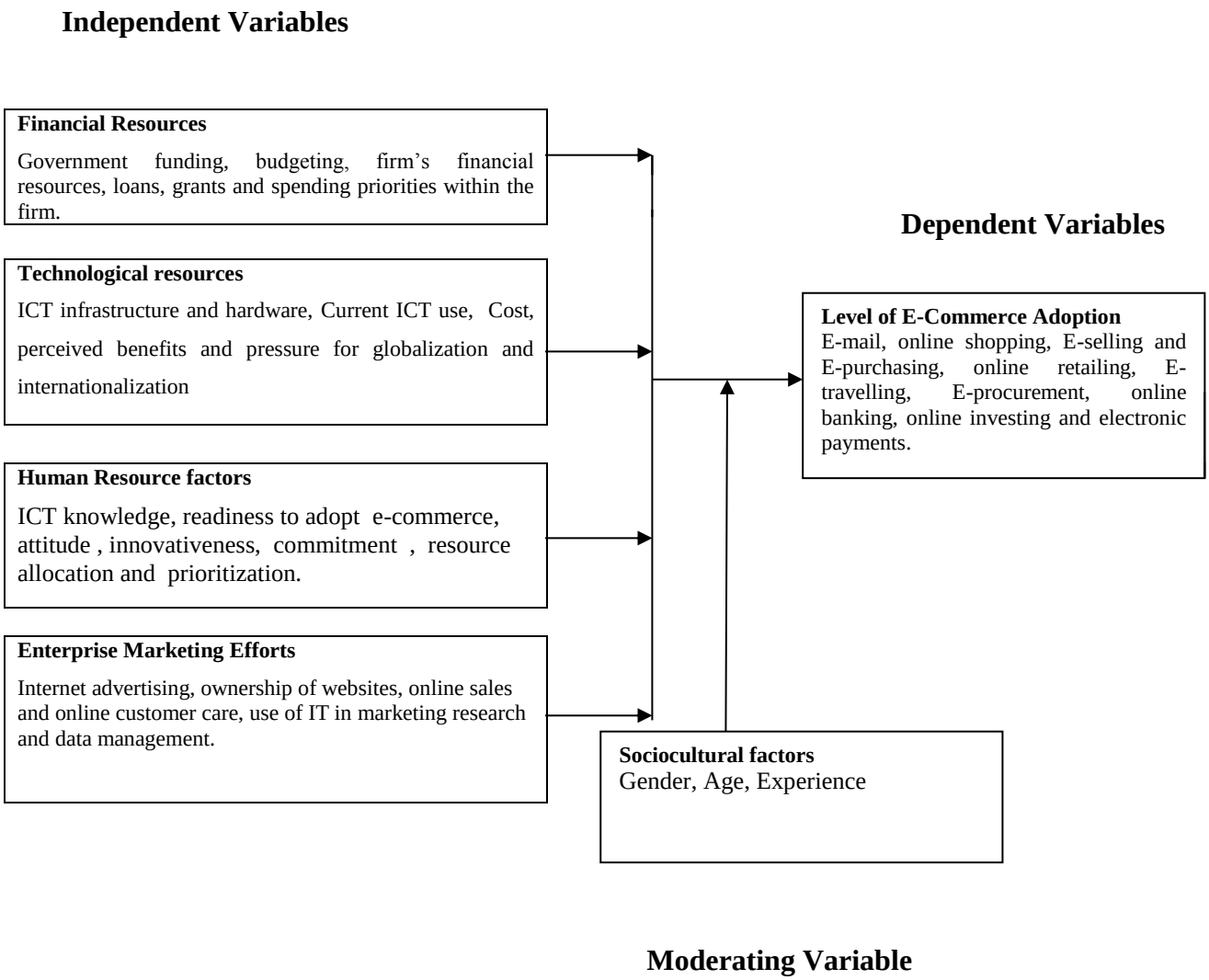

Figure 2.3 Conceptual Framework

2.3.1 Relationship between Variables

2.3.2 Financial Resources and Level of E-Commerce Adoption

Financial Resources availability and usage determine the equipment, systems and people deployed in any organization. This implies that the manner in which budgets are prepared and implemented will determine whether certain objectives are met or not. As noted by Irefin (2012) in a study of the financial resources as a factor affecting the adoption of information and communication technology in small and medium scale enterprises in Nigeria, the element of cost is a significant one. Accordingly the cost factor is the largest among the significant variables, implying that the cost of purchasing computer equipments and establishing a communication network system has a relative important effect on the level of ICT adoption; further, as small businesses are characterized by server constraints on resources such as finance and in-house technical expertise, the adoption of ICT represents as disproportionately large financial risk which cannot be taken by SMEs. Additionally high cost of computers, internet facilities and other ICT equipments which form the core of ICT infrastructure also affect the adoption levels of ICT usage by SMEs. Based on this conceptual model, the researcher therefore presents the alternative hypothesis HA_1 that: *Financial Resources have a significant effect on levels of E-commerce adoption among SMEs in Kenya.*

2.3.3 Technological Resources and Level of E-commerce Adoption

Technological resources refer to the availability of ICT infrastructure and hardware, current ICT use, their cost, perceived benefits and pressure for globalization and internationalization to expand ICT usage and adopt E-commerce. According to the conceptual model, these aspects affect E-commerce adoption levels among SMEs as noted by Irefin *et al.,* (2012) who in a study among Nigerian SMES upholds that the availability of ICT infrastructure as an important factor that inhibits the adoption of ICT by SMEs. If there is adequate ICT infrastructure in the country, it will be very easy for SMEs to adopt it rather than running away from it. Kapurubandara *et al.,*

(2006), in her study found that the availability of internet facilities and telecommunication services as some of the factors affecting the adoption of ICT by SMEs in a developing economy. The researcher therefore presents the alternative hypothesis HA_2 that: *Technological Resources have a significant effect on levels of E-Commerce adoption among SMEs in Kenya.*

2.3.4 Marketing Resources and Level of E-Commerce Adoption

In this study, marketing efforts refer to a firms overall marketing effort and specifically, the use of internet advertising, ownership of interactive websites, online product sales and online customer care/interaction and use of ICT systems in marketing research and data management. Gaffney (2007) asserts that consumers are increasingly interested in communicating with companies via new and multiple channels such as voice, email, web chat and short message services (SMS). Kaynak (2005) in an analysis of the factors affecting the adoption of electronic commerce by SMEs in Turkey describes the marketing benefits of E-commerce as direct savings such as product promotion, new sales channels, quick product delivery, more satisfaction of customers, inexpensive advertising medium, enhanced company image, new business opportunities, efficiency in information gathering and better support from suppliers (Walczuch *et al*.,2000; Nath *et al*., 1998;Poon and Swatman, 1999). Mwangangi (2014) confirms this in a study of information and communication technology solutions on the growth of small and medium enterprises in Nairobi County and observes that while management of both actual and potential customers poses a major challenge, the extensive use of Customer Relationship Management systems (CRMs) should be adopted to provide an integrated platform for customer profiling, feedback collection and customer communication interfaces. Improved customer experience is obviously a recipe for business growth.

This variable as operationalized and in relation to the conceptual model shown, affects E-commerce adoption among SMEs in Kenya. This is captured in the alternative hypothesis HA_3

that: *Marketing Efforts have a significant influence on levels of Ecommerce adoption among SMES in Kenya.*

2.3.5 Human Resources and Level of E-Commerce Adoption.

In the present study Human Resource factors refer to ICT competencies/knowledge among Managers and employees, readiness to adopt and use ecommerce, attitude towards ICT and innovativeness; their commitment to E-commerce adoption , managerial attitudes to new technology and risk, resource allocation and ecommerce projects' prioritization. Level of training in ICT by employees at various levels e.g. Certificate, Diploma, Graduate, Post graduate etc forms part of this variable. In the present study, leadership behaviour which is a human resource factor is deemed to be directly related to successful strategy implementation. As espoused in the Technology Acceptance Model (TAM), Davis (1989), the acceptance of a new technology is usually based on perceived usefulness and perceived ease of use. Perceptions by users and especially the decision makers hinge upon knowledge. ICT knowledge among employees further determines adoption since it influences understanding and the perceived benefits envisaged.

Based on the conceptual model presented, the researcher presents the alternative hypothesis HA_4 that**:** *Human resource factors have a significant influence on levels of Ecommerce adoption among SMES in Kenya.*

2.3.6 Moderating Variables

The moderating effect of socio-cultural factors like gender, age and experience as shown on the conceptual framework explain other effects on levels of E-commerce adoption. As explained by Vinkatesh (2003) in the Unified Theory of Acceptance and Use of Technology (UTAUT). In this model which aims to explain user intentions of an information system and subsequent usage behavior, Vinkatesh *et al* (2003) posit that the four key constructs: performance expectancy, effort expectancy, social influence, and facilitating conditions are the first three direct determinants of usage intention and behavior, and the fourth a direct determinant of use behavior. Gender, age, experience, and voluntariness of use are posited to moderate the impact of the four key constructs on usage intention and behavior. This applies in the levels of adoption of E-Commerce and hence it's worth for inclusion in this study's conceptual model.

Agwu *et al*., (2014) in a study in Nigeria notes that only few SMEs in the developing countries such as Nigeria have not really understood the importance of electronic commerce adoption. These difficulties notwithstanding, very few SMEs have embraced electronic commerce but are hampered by the general national infrastructure such as poor education, communication, ICT, political/legal framework, etc. The findings of the present study confirm the positive relationship between Age and E-Commerce adoption much as age was not a key variable under study.

From findings by Chong (2006) relating to Australian SMEs, non-trading institutional influence was found to have an inverse relationship with the extent of deployment of E-commerce. This suggests that those autonomous early adopters that are less likely to be influenced by the publicity and persuasion of certain institutions (such as governments, banks, telecommunication corporations, media, consulting firms or universities), may tend to explore the possibilities more widely and with greater initiative. Alternatively, those that tend to follow what others prescribe (e.g. laggards or non-initiators) tend to lack the characteristics or incentives to explore, take risks, adapt to new change, and to venture into different avenues for maximizing the potential of

new business practices. These are influences from Non-Governmental civil organizations, trade unions and environmental bodies SMEs are usually characterized by a high level of environmental uncertainty that includes fluctuations in interest rates, reliability of supply, and competition.

Shemi ,P.,(2012) identifies the factors affecting e-commerce adoption and confirms that these may themselves change over time and are dependent upon other societal factors such as language, culture, and beliefs and other issues inherent in the business environment. Orlikowski and Baroudi (1991) add that interpretive researchers recognize that as meanings are formed, transferred, and used, they are also negotiated, and hence that interpretations of reality may shift over time as circumstances, objectives, and constituencies change. It is the present study's position that the aspects of Age, Gender and Experience act as moderating effects .Their discussion in the findings of the study show their relevance and role as moderating variables.

Related to this factor, are the use of IT and E-Commerce aspects which are often imposed on SMEs by major customers or suppliers. Such pressure from trading partners plays a critical role in encouraging small firms to adopt ICT and E-Commerce (Sandy Chong 2006).

This is in line with the present study's position that Enterprise resources occasioned by support from Government and other organizations do affect the various levels of E-Commerce adoption. In this instance Environmental influence is acting as part of the intervening/moderating variables.

CHAPTER THREE

RESEARCH DESIGN AND METHODOLOGY

3.0 Introduction

This chapter describes the philosophical foundations of the study, its design and methodology, location and population of study. It also covers aspects of sampling, data collection, reliability and validity of the research instrument and data analysis and presentation. The chapter also gives a discussion of the target population, sampling method, data collection tools and instruments, validity and reliability. Finally, the chapter presents the methods used for data processing, analysis and presentation.

3.1 Research Design

Research design is the conceptual structure within which research is conducted; it constitutes the blueprint for the collection, measurement and analysis of data (Kothari 2004). It refers to the ways the researcher plans and structures the entire research process. The research design provides guide-posts to keep the research headed in the right direction. In this study a descriptive cross-sectional approach was adopted. Relevant data was collected at one point in time owing to the size of the sample and the limitation of time. The researcher also dealt with phenomena that had occurred and had no control over the variables in line with the study's philosophy. Further, as confirmed by Orodho (2003), a descriptive survey is a method of collecting information by interviewing or administering a questionnaire to a sample of individuals. The rationale for such an approach was the description of the state of affairs as it exists. Descriptive studies are not only restricted to fact finding, but may often result in the formulation of important principles of knowledge and solution to significant problems (Kerlinger, 1973).

3.2 Research paradigms and philosophical assumptions

A research paradigm is defined as a set of beliefs about the nature of the world and the individuals placed in it (Guba and Lincoln 1994). In the present study, the underlying belief espoused is that enterprise resources interplay to promote or impede the adoption of e-commerce strategy and understanding. The key enablers in this process are people, systems, materials, knowledge and skills and other internal organizational aspects; that would through the study yield empirical knowledge crucial for policy reformulation and development.

Shemi *et. al., (*2012) cites three research paradigms namely Interpretive, Positivist, and Critical paradigms. An interpretive study assumes that reality can be accessed given or socially constructed and can only be done through social constructions such as language, consciousness and shared meanings. A positivist study is one which is anchored on the existence of fixed relationships within a phenomenon which are typically investigated with structural instrumentation (Orlikowski & Baroudi, 1991:5). p.5). According to Shemi (2012), studies that favour a positivist approach in e-commerce adoption research in Small and Medium Enterprises align with the assumption that there is an objective reality that can be methodically modeled, quantified, statistically measured and tested. In critical research, the main task is seen as being one of social critique, whereby the restrictive and alienating conditions of the status quo are brought to light (Klein & Myers, 1999). Positivism is also considered as Scientism and is the oldest and most popular research paradigm (Oates, 2006, p. 285). Auguste Comte (1798–1857) is credited with founding the philosophy of positivism (Moore, 2010). Moore (2010) states that Positivism assumes that scientific knowledge is the highest form of knowledge, and that scientific knowledge comes from studying directly observable and measurable events. According to Shemi (2012), other knowledge claims, for example, those based on religious or metaphysical assumptions, are held to be imperfect because they are not derived from actual publicly observable experiences. According to the positivism paradigm, then, the world consists

of laws and principles that are discovered through direct observation. Accordingly, if we do not know enough about some aspect of nature, we must study, measure, and otherwise directly observe our subject matter more closely.

Additionally, scientific knowledge has the degree of certainty necessary to be regarded as foundational, for example, as a basis for structuring society and thereby improving it.' Further, positivist studies can be classified as such '…if there were evidence of formal propositions, quantifiable measures of variables, hypotheses testing, and the drawing of inferences about a phenomenon from the sample to a stated population (Orlikowski & Baroudi, 1991:5).' The present study adopted a positivist paradigm due to the belief in the assumption that there is an objective reality that can be '…methodically modeled, quantified, statistically measured and tested.'

Philosophical assumptions relate to systematic studies of knowledge; what is known, acquired and appropriated by humans (Wyssusek, Schwartz & Kremberg, 2002). E-commerce adoption's philosophical assumptions have always been embedded in information systems research (Shemi 2012). In the present study, E-commerce adoption was viewed from the perspective of strategy and the deployment of ICT-based business applications by Small and Medium Enterprises for purposes of growth, profitability and competitiveness. According to Wyssusek *et al*., 2002 and Guba & Lincoln, (1994), at a high level of abstraction, four broad categories of inquiry include the following philosophical assumptions; Ontological, Epistemological, Anthropological (human nature) and Methodological. Ontological assumptions relate to theories of existence or the reality of being of a phenomenon (King & Kimble, 2004), Epistemological assumptions consider theories of knowledge, which are concerned with issues of '…what can we know and how we can know it' (King & Kimble, 2004). Anthropological assumptions concern (anthropology) human nature, in particular, the relationship between human beings and their environment. The methodological assumptions have direct implications on the manner in which studies are carried

(methodological) out and the manner in which knowledge is acquired and investigated (Roode, 2007). These four sets of assumptions are referred to as assumptions about the nature of social science (Burrell & Morgan, 1979). The present study adopted an epistemological philosophy and a positivist research paradigm.

3.3 Target population

The population of this study comprised SMEs in Agribusiness, Education, Wholesale trade and retail, Transport and Health in Kericho County, Kenya. These formed the range of SMEs registered by the Kericho County Government based on the preliminary studies carried out at the County's Headquarters. This target population of SMEs is relevant to the study because each SME is composed of owners and managers, who comprise crucial teams that support the SME leadership in crafting and implementing change strategies within their enterprises. These were the actual respondents. The particular SMEs were identified through a profiling process based on the SMEs who had renewed their licenses by the year (2014) at the Kericho county licensing offices. Such registration for the year is used as an indication of the SMEs activity and continuity in business because using an alternative SME register such as the at the Chamber of Commerce offices may not have led to finding active respondents. This method of targeting has been used by Shemi (2012) in a study of E-commerce adoption by SMEs in Botswana.

Kericho County was chosen for the study since it is home to a wide variety of rural-based SMEs. It is noteworthy that most studies in E-commerce adoption in Kenya have been carried out in urban areas especially the city of Nairobi (Wanjau *et al*., 2009,Ongori 2014 and Mwangangi 2012). Additionally, given that the devolved system of government recently put in place in Kenya in 2013, the researcher's position is that studies directly related to County environments are now critically needed.

3.3 Sampling Methodology

The SMEs are in different areas within the County headquarters. Partly for this reason, stratified random sampling together with systematic sampling from a sampling frame of 4,721 SMEs was used. This is in line with the method used by Njanja (2009) where she investigated management strategies affecting performance of micro, small and medium enterprises (MSMES) in Kenya. In her study of SMEs in fourteen Kenyan towns, selected from the then eight provinces, Njanja (2009) used stratified sampling to get information from different sizes of the MSMEs. Within the different sizes, systematic sampling was used to arrive at the final sample.

The SMEs which were identified for the study were those which conformed to the provisions of Kenya's MSE Act (2012), those who had up to - date licenses and those who used Internet and e-mail applications in their business. This is in line with studies undertaken among SMEs in Botswana where, '…The SMEs so chosen would suit the characteristic of being able to provide such explanatory detail relating to the purpose of the study. From the minimum level of e-commerce adoption, a participating organization needed to have adopted the Internet and e-mail applications to be able to participate' (Shemi 2012). The SME Act is a legal provision in Kenya which categorizes SMES in Kenya in terms of annual turnover and employee numbers. According to Macorr Research solutions online (2014), sampling is the foundation of all research. Reliable sampling helps one to make business decisions with confidence.

In the present study, a sample of 323 (Table 3:1) the number of respondents was determined using Macorr's (2014) formula which is $n= Z*P (1-P)/C^2$ where;

n = Sample size

Z= Z value obtained from statistical table (e.g 1.96 for 95% confidence level)

P= Percentage of picking a choice expressed as a decimal (30%)

C= confidence level (in this study it was 0.05 at 95% confidence level)

Thus computed as ;

$$n = 1.96*0.3(1- 0.3) / 0.05^2$$

$$= 0.806736 / 0.0025$$

$$=322.69$$

$$=323$$

Macorr's formular uses similar parameters as Cochran's(1975) sampling formular which constitutes an equation to yield a representative sample for proportions of large samples;

$N^0 = Z^2 p q / e^2$.

Where N^0 = Sample size,

Z=Z value obtained from statistical table,

p=Percentage of picking a choice expressed as a decimal,

q=1-p and e= the margin of error.

Using Stratified random sampling the study only considered active SMEs based on their current licenses to operate from the County Government.

Table 3:1 Samples per area within Kericho County

Area	**Number of SMEs**	**Percentage**	**Sample using Strata formula** [ns= (Ns/N) n]
Nyagacho	661	14%	45
Kericho CBD	2219	47%	152
Tengecha	354	7.5%	25
Kapsoit	661	14%	45
Majengo	283	6%	19
Brooke	71	1.5%	5
Ainamoi	472	10%	32
Total	**4,721**	**100%**	**Cumulative sample=323 respondents**

Source: Research Data, 2015

The strata formula [ns= (Ns/N)n] was used to determine number of respondents in each strata where;

ns= sample size of each stratum s

Ns= Population size for each stratum s

N= Total population size

n= Total sample size

s= representing each stratum where (h=1, 2, 3, 4, 5, 6&7)

3.4 Data Collection Instrument

According to Cooper and Emory (2008), a questionnaire is conveniently used because it is cheaper and quicker to administer; it is above the 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. Specifically, and in relation to strategic management research, questionnaires are the main tools used since they are popular and appropriate in studies in Strategic Management (Ngechu, 2008).

In the present study, questionnaires were used after initial enquiries and discussions with the County Director of Trade, Chairman of the County Chamber of Commerce and the County Minister of Trade. The discussions related to basic information regarding the nature and number of active SMEs in the County and their level of usage of ICT/Ecommerce.

The data collection instrument was made up of six sections A.B, C, D and E having multiple items covering the respondents' general details and specific areas based on the variables of the study. Specifically, sections B, C, D, E and F of the research tool were concerned with testing the variables of the study namely, Level of E-Commerce Adoption, Financial factors, Marketing Resource Factors, Human Resource factors and Technological factors.

In the questionnaire Level of E-commerce adoption as the dependent variable comprised such constructs such as use of email, electronic planning and electronic enabled production – (computer enabled production/manufacturing systems, designing posters, letterheads, wedding cards, business cards etc). Such constructs as Online advertising using platforms like OLX, Pigia-me, Face book, and Whatsapp. Electronic sales, Electronic purchasing, Electronic funds

transfers; payments and receipts e.g MPESA, Airtel money, Orange were also covered by the research tool.

The human resource factor variable included such constructs like, Allocations of funds for E-Commerce facilities, Purchase of ICT hardware and software (phones/computers), E-commerce and ICT training and Priority for E-commerce projects (decisions on use of internet using phones and computers for business). The Financial Resource Factor variable in the research tool used such constructs as Financing/loans from National or county governments, Budgets for E-commerce Infrastructure (Computers, Smart phones, Internet charges/connection), Firms financial strength or capability, Spending priority by the business and availability of Other Loans from other sources to the SMEs.

The technological resources variable was tested by using constructs such as Availability of ICT infrastructure and hardware(computers, phones, cybercafés),Cost of e-commerce facilities(internet, computers, phones, cybercafé charges), Pressure to communicate and buy or sell from other countries(globalization and internationalization) and Expected benefits of E-commerce.

The marketing resources factor was tested using constructs such as use of internet advertising(promotion/selling through email, OLX, Whatsapp, Face book etc),Ownership of websites, Online product sales, Use of online customer care/communication, Level of Use of internet(thru phones ,Computers, Cyber) in Marketing research and information storage . A Likert's scale of 1= Very great extent, 2= Great extent, 3 = Moderate extent, 4 = No extent and 5= not at all was used. This is in line with Letting and Letangule (2012) who used a similar method while studying the effects of performance contracts on organizational performance in Kenya. The study aimed at establishing the level of agreement on various statements that related to the effect of Performance Contracting on performance. In a study of Firm-Level Institutions and Performance of publicly quoted companies in Kenya, Machuki, Aosa and Letting'(2012)

successfully deployed a similarly constructed tool in their study. Additionally, this approach was used by Njuguna and Abdalla (2014) in the study of challenges to strategy implementation of ICT, computer-based Management and educational support systems in Universities in Kenya. The specific items in the present study's questionnaire enabled the rating of the extent to which a particular SME has adopted the varying levels of E-commerce.

3.5 Validity

A pretest and pilot survey was conducted to test the accuracy, robustness and versatility of the research instrument. Based on the outcome the research tool was revised to address concerns raised by the respondents and the shortcomings noted. This was done with a view to improve its capacity to elicit empirical responses devoid of ambiguity and bias. (Refer to Appendix 3;Pilot study results).

3.6 Reliability

The reliability of the instruments was tested using Cronbach's alpha a method used as a coefficient of internal consistency (Cronbach's, 1951). It is commonly used as an estimate of the reliability of a psychometric test for a sample of examinees by checking inter item correlation matrices and eliminating non critical items. An alpha of 0.7 and above is considered acceptable for the present study. The actual value obtained when a validity test was carried out for the present study was at an alpha of 0.942; it was therefore deemed suitable and reliable.

3.7 Data Collection Procedure

The research was initially carried out by the researcher individuality where preliminary information was gathered from the County Chamber of Commerce. The main data was collected later with the assistance of six research assistants who were properly briefed on the study and its objectives. The researcher and the assistants administered the questionnaire on the SME owners and their supervisors/managers by dropping and later collecting them. In instances where the respondents needed clarification the assistants were available to provide the clarifications sought.

The study was conducted in three phases over a period of about four months starting with enquiries with the Kericho County Trade offices where a sampling frame of SMEs was identified from a register from the Kericho County Revenue office. A pilot study was conducted to pretest the research tool among 34 SMEs and the findings indicated that there is a significant relationship between level of E-Commerce adoption (dependent variable) and Enterprise resource factors of Technology, Human Resource and Finance.(see Appendix III)

3.8 Data Processing and Analysis

3.8.1 Quantitative Data Analysis

Quantitative data collected was checked for completeness and consistency and thereafter coded and entered into the system for data reduction and analysis. Data processing and analysis was done using the SPSS version 20 analysis software where Descriptive and Inferential statistics were analyzed. The main data findings are discussed and conclusions drawn. The data was based on a sample of 323 SMEs identified based on Macorr's formula (Table 3.1).A response rate of 229 was realized which represents a 76.3 % return. For reliability the instrument was tested using Cronbach's alpha. Descriptive analysis tools together with Linear Regression among other tools were used to establish relationships and test hypotheses.

3.8.2 Qualitative Data Analysis

The qualitative data collected was grouped into specific themes to enable analysis, interpretation and comparison to the other findings of the study. Given that respondents were required to give suggestions on how to improve the extent and use of E-Commerce among Small and Medium enterprises, the data from open ended questions in the questionnaire was organized into subthemes based on recurrence to enable comparison with findings of the Quantitative data and to draw conclusions. Further ,content analysis was carried out which entailed a scrutiny of the size and frequency of the responses concerning the aspects under study and specifically with

regard to suitable recommendations aimed at dealing with issues concerning the extent and use of E-Commerce among SMEs in the target population.

3.9 Ethical Considerations

Ethics are norms or standards of behaviour that guide moral choices about our behavior and our relationships with others, and as such all parties in research should exhibit ethical behavior. (Saunders et al., 2003). Privacy of respondents, voluntary participation and the right to withdraw, consent and the possible deception of participants, maintenance of confidentiality of data provided by individuals or identified participants and their anonymity (Mathooko, et al., 2011). Ethical considerations in the present study were adhered to accordingly including acquiring a Research Permit from the National Commission for Science Technology and Innovation and adhering to its terms conditions and requirements (NACOSTI - Appendix 4; Letters from Kericho County –Appendix 6).These aspects built value to the study and bolstered its reliability and validity.

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION, INTERPRETATION AND DISCUSSION

4.1 Introduction

This chapter presents the results and discussion of the research findings which are a result of analysis using SPSS. The results are within the framework of the research objectives and hypotheses outlined. The interpretation of the results maintains sight of the overall objective of the study which was to determine the effects of Enterprise Resource factors on the adoption levels of E-commerce strategy among SMEs in Kenya.

4.2 Requisite Analysis

The data collection instrument was made up of six sections each having multiple items covering the respondents' general details, E-commerce and ICT followed by the sub-sections relating to human, finance, marketing and technological factors. The population of this study comprised SMEs in Agribusiness, Education, Wholesale and retail trade, Transport and Health in Kericho, Kenya. The research was carried out in three phases starting with enquiries with the Kericho County trade offices where a sampling frame of SMEs was identified from a register from the Kericho County Revenue office. A pilot study was conducted to pretest the research tool and the findings indicated that there is a significant relationship between level of E-commerce adoption (dependent variable) and enterprise resource factors of technology, marketing, human resource and finance. (see Appendix III). The main primary data collection followed whose findings are discussed and conclusions drawn. A sample of 323 SMEs was identified based on Macorr's formula (Table 3.1) and a response rate of 229 was realized which represents a 76.3 % return. For reliability the instrument was tested using Cronbach's alpha. Descriptive analysis tools together with Linear Regression, and Correlation analysis among other tools were used to

establish relationships and test the study's hypotheses. This chapter therefore analyses the data, interprets and discusses the findings.

4.2.1 Reliability Analysis

Cronbach's alpha is a method used as a coefficient of internal consistency (Cronbach, 1951). It is commonly used as an estimate of the reliability of a psychometric test for a sample of examinees by checking inter item correlation matrices and eliminating non critical items. The data collection tool in the current study was subjected to reliability analysis and it was found to be highly reliable and acceptable at an alpha of 0.7 and above (Table 4.2.1). This is in keeping with the threshold set for the study at a limit of alpha 0.7

Table 4.2.1 Test of Reliability

Model	No. of Items	Cronbach's Alpha
Financial Resource Factors	6	0.70
Marketing Resource Factors	6	0.854
Human Resource Factors	12	0.834
Technological Resource Factors	5	0.832

Source: Research Data, 2015

4.2.2 Test of Sampling Adequacy

Kaiser Meyer Olkin & Bartlett's Test of Sphericity are used to measure sampling adequacy and strength of relationships between variables. KMO & Bartlett's test play an important role for accepting the sampling adequacy. In this study KMO values of over 0.6 (Table 4.2.1) were obtained through SPSS Factor analysis; a prove of strength and confirmation of the correlations described in Table 4.4.9. These values satisfy the sampling adequacy for the present study since they are above the minimum recommended KMO value of 0.5

Table 4.2.2 Kaiser-Meyer Olkin and Bartlet's test

Model	Sig	Df	KMO
Financial Resource Factors	.00	15	.661
Marketing Resource Factors	.00	15	.830
Human Resource Factors	.00	105	.782
Technological Resource Factors	.00	10	.870

Source: Research Data, 2015

4.2.3 Tests of Multico-linearity

Multi co-linearity refers to is a situation where two or more predictor variables are highly correlated with a Variance Inflation Factor (VIF) over 5 and a Tolerance of less than 0.2. The Correlation coefficients should be below 0.8. (Cooper and Schindler 2008). As depicted in Table 4.2.3 below, the test for Multico-linearity and the Tolerance and Variance Inflation Factors (VIF) show an inverse relationship where in each case where the higher the Tolerance, the lower the Variance Inflation Factor(VIF) and vice versa. Multico-linearity is deemed to be present if the VIF is greater than 5.0 and if tolerance is less than 0.2 (Kothari and Garg, 2014). Table 4. 2. 3 shows that all the VIF values are below 5.0 indicating the absence of Multi-colinearity. The Tolerance levels are also higher than 0.2 confirming that there is no aspect of Multi-colinearity. Additionally Correlation analysis shown on Table 4.4.9 depict correlation coefficients below the threshold of 0.8; any values higher would indicate presence of Multi-colinearity. The significance of this test for the present study's findings confirm that the predictor variables are not highly correlated and reliable inferences may be made without any hesitation.

Table 4.2.3 Test of Multi Co-linearity

Model	Tolerance(1/VIF)	VIF
Human Resource Factors	.515	1.943
Financial Resource Factors	.586	1.707
Technological Resource Factors	.458	2.183
Marketing Resource Factors	.533	1.876

Source: Research Data, 2015

4.3 Descriptive Statistics

According to Kothari and Garg (2014), '…the major purpose of descriptive research is the description of the state of affairs as it exists we quite often use the term *ex-post facto* research for descriptive research studies .The main characteristic of this method is that the researcher has no control over the variables; he can only report what has happened or what is happening.' This holds true for the present study and hence the use of descriptive statistics to explain the relationships between the variables under study.

Table 4.3.1 Respondents' Demographics (in percentages)

Age /Level of Education	Secondary Certificate	College Diploma	Higher Diploma	Bachelor	Masters	PhD	Total
18-25	19.2	16.6	3.5	7.9	3.5	0.9	52.4
26-35	14.0	10.9	5.2	3.9	2.2	0.4	36.7
36-45	3.5	3.1	1.3	0.4	0.9	0.0	9.2
46-55	0.9	0.0	0.0	0.4	0.4	0.0	1.7
Total	**37.6**	**30.6**	**10.0**	**12.7**	**7.0**	**1.3**	**100.0**

Source: Research data, 2015

Table 4.3.1 indicates that a majority of the respondents 89.1% had a Secondary school certificate and College Diploma as their highest levels of Education. The results show that a majority of the respondents were aged between 18-35 years. This establishes their level of understanding and ability to provide reliable responses. These findings are in tandem with the results of Wanjau *et*

al., 2012 in a study of E-Commerce adoption among Tour firms in Kenya. The study established that age and level of education have a relationship with the levels of E-Commerce adoption in the sense that the younger members of the population in Kenya tend to adopt the use of the internet and invariably e-commerce faster than the older generation**.** This also indicates that the SMEs under study are owned by or employ relatively younger employees who are more likely to embrace emerging technologies including E-Commerce. It is worth noting that the age factor in the present study has a moderating effect on the adoption of E-Commerce.

4.3.2 Levels of Management

Table 4.3.2 Levels of Management

Level of Management	Frequency	Percent
Director/owner	90	39.3
Manager	40	17.5
Supervisor	41	17.9
Assistant Supervisor	58	25.3
Total	**229**	**100.0**

Source: Research data 2015

Table 4.3.2 shows the Levels of Management held by the specific respondents; a cumulative percentage of 56.8 were Directors and owners of the SMEs .The majority 39.3 % are Directors an aspect that builds in to the reliability of the study's findings. It also bolsters any recommendations made especially given that the Directors and managers will be instrumental in implementing the recommendations based on the findings of the study. Further, this agrees with the findings of Fatima Ajmal (2012) who while studying an electronic commerce adoption model for Small & Medium Sized Enterprises in Malaya, Malaysia found out that the support and enthusiasm of management are very important for SMEs in successful adoption of E-commerce.

4.3.3 Duration of Operation in the Industry

Table 4.3.3 Duration of Operation in the Industry

Duration in the Industry	Frequency	Percent
less than a year	37	16.2
1-5 years	116	50.7
6-10 years	56	24.5
11-15 years	12	5.2
15 years and above	8	3.5
Total	**229**	**100.0**

Source: Research data, 2015

As shown on Table 4.3.3 a majority of the respondents 50.7 %, who were mostly Directors and managers had operated in the industry for between 1-5 years. The period is long and adequate in building experience, capacity and expertise to reliably respond to issues regarding the effects of enterprise resources in the adoption of E-commerce.

4.3.4 Enterprise Nature and Type

Table 4.3.4 SME Classification

Response		Frequency	Percent
	Yes	174	76
	No	53	24
Total		**227**	**100.0**

Source: Research data 2015

Given that the target population of the study was the Small and Medium Enterprises (SMEs) in Kericho County, Kenya, it is note- worthy that a significant group of SMEs (76%) in this study were Micro Enterprises employing between 1-9 employees and with investments of less than Kshs 500,000 (Table 4.3.4). This is in line with Kenya's Micro and Small Enterprises act of 2012 which defines SMEs as those Enterprises with less than Kshs.5million invested in it, or has sales of less than Kshs.500, 000 a year, or has 1 – 9 people working in it. An SME is according to this Act, a business that has sales of between Kshs.500, 000 – Ksh.1million a year, or has 10-50 people working in it (MSE Act 2012).

Table 4.3.5 Number of Employees

No. of Employees	Frequency	Percent
1-9	190	83.0
10-20	33	14.4
21-50	6	2.6
Total	**229**	**100.0**

Source: Research data, 2015

Table 4.3.5 shows that 83 percent of the respondents are in the category of Micro Enterprises as defined by the MSE Act 2012 in which a Micro Enterprise is a business that has less than Ksh.5million invested in it, or has sales of less than Ksh.500, 000 a year, or has 1 – 9 people working in it. Generalizations therefore are more appropriate to Micro Enterprises although the study's findings also apply to Small and Medium Enterprises.

Table 4.3.6 Enterprise Type

Enterprise Type	Frequency	Percent
Agribusiness	16	7.0
Education	36	15.7
Wholesale trade	35	15.3
Transport	17	7.4
Health sector	5	2.2
Professional Service	29	12.7
Construction	6	2.6
Small manufacturing	20	8.7
Hospitality	17	7.4
Retail shop	48	21.0
Total	**229**	**100.0**

Source: Research data 2015

The study sought to determine the effects of enterprise resources in the adoption of e-commerce among Small and Medium Enterprises. It is noteworthy that a majority of enterprises studied were wholesale and retail shop traders (36.3 % Table 4.3.6).This signifies that recommendations made will apply more directly to this majority although a significant number (15.7%) of SMEs studied fall under the Education sector. Further studies may be needed to specifically address the different sectors separately.

4.3.5 Level of E-commerce Adoption

Levels of E-commerce adoption in this study refer to the level of use of e-mail, online shopping, e-selling and e-purchasing, online retailing, e-travelling, e-procurement, online banking, online investing and electronic payments such as Mpesa, Moneygram, PayPal, (Martin and Matlay, 2001; Taylor and Murphy, 2004). In the present study, the respondents were asked to rate the extent to which their enterprise used the aspects of E-Commerce stated on a five point-Likert scale of 1-very great extent,2-great extent,3-moderate extent,4-low extent,5-none.Table 4.3.7 show that a cumulative percentage of 63.8 indicated that the extent of use of computers, and the internet in their enterprise is at a great, to very great extent .This lends credence to the findings shown on Table 4.3.8 that among the SMEs under study the Level of E-Commerce adoption is at a great extent especially in the use of E-mail, Money transfer and Internet web browsing.

Table 4.3.7 Extent of use of Computers, Mobile phones and the Internet

Extent	Frequency	Percent
Very great extent	112	48.9
Great extent	34	14.8
Moderate extent	23	10.0
Low extent	17	7.4
None	43	18.8
Total	**229**	**100.0**

Source: Research data, 2015

4.3.6 Effects of Financial Resource Factors

Table 4.3.8 shows the effect of availability of Financial Resources on the use of E-commerce in the Enterprises under study. A majority of the respondents at 36.2% indicate that Financial resources or funds availability influence the use of e-commerce at a very great extent. Most of the operations in the SMEs depend on funds availability and hence are constrained under this aspect. Previous studies by Martin and Matlay (2005) cite the lack of resources and expertise available to SMEs due to size as hampering each stage of the adoption, implementation and

evaluation of E-Commerce. Further concurrence is identified in studies by Irefin (2012) who while studying the financial resources as a factor affecting the adoption of information and communication technology in Small and Medium scale enterprises in Nigeria describes the element of cost as a coefficient. The cost factor appears to be the largest among the significant variables, implying the cost of purchasing computer equipments and establishing a communication network system have relative important effect on ICT adoption.

Table 4.3.8 Effects of Financial Resource Factors

Indicator	Extent of Adoption	Frequency	Percent	Test of Significance (Chi-Square)	
Financial Resources Availability	No extent	6	2.6	Chi-Square	115.699
	Low extent	20	8.7	Df	23
	Moderate extent	54	23.6	Sig.	.000
	Great extent	66	28.8		
	Very great extent	83	36.2		
	Total	229	100.0		
Finance/Loans from National or County Government	No extent	111	48.5	Chi-Square	122.550
	Low extent	37	16.2	df	4
	Moderate extent	23	10.0	Sig.	.000
	Great extent	19	8.3		
	Very great extent	39	17.0		
	Total	229	100.0		
Budgets for E-commerce Infrastructure	No extent	46	20.1	Chi-Square	5.170
	Low extent	54	23.6	Df	4
	Moderate extent	35	15.3	Sig.	.270
	Great extent	52	22.7		
	Very great extent	42	18.3		
	Total	229	100.0		
Firms Financial Strength or capability	No extent	27	11.8	Chi-Square	89.712
	Low extent	32	14.0	Df	4
	Moderate extent	51	22.3	Sig.	.000
	Great extent	56	24.5		
	Very great extent	63	27.5		
	Total	229	100.0		
Spending by the business	No extent	15	6.6	Chi-Square	66.524
	Low extent	21	9.2	Df	4
	Moderate extent	50	21.8	Sig.	.000
	Great extent	63	27.5		
	Very great extent	80	34.9		
	Total	229	100.0		
Effect of Other Loans	No extent	39	17.0	Chi-Square	11.284
	Low extent	30	13.1	Df	4
	Moderate extent	48	21.0	Sig.	.024
	Great extent	54	23.6		
	Very great extent	58	25.3		
	Total	229	100.0		

Source: Research data 2015

Table 4.3.8 shows how finances/loans from the National or County governments affect the adoption of E-commerce among the respondents under study. 48.5% of the respondents

indicated that the financing/loans from the National & County governments have an insignificant effect on E-commerce adoption among their enterprises. This percentage comprises mainly the respondents who indicate that the financing/loans from the two forms of government do not contribute at all in the adoption of E-commerce among their enterprises at 48.5%. Chi-Square test of significance is, however, is within the significance level of p 0.05 pointing to the rejection of the null hypothesis. This could be attributed to non availability of such loans/Financing from the county or National Governments. According to Stoneman and David, (1986) the impact of government policies and initiatives has been shown to have direct and indirect stimulation to the supply of information which produces faster technology diffusion. For example, governmental efforts to establish a national information infrastructure in US, Singapore and Malaysia have shown that both governments provide a legitimate and positive leadership role in developing the information infrastructure in its effort to digitize its economy (Kettinger, 1994; Tan, 1998).

Similarly, Table 4.3.8 shows the extent to which budgets for E-commerce infrastructure such as computers, smart phones, internet charges/connections affect the adoption of E-commerce in the enterprises under study. A low extent, that is 23.6%, is portrayed as the influence of such budgets on the introduction of E-commerce in these enterprises. A test of significance fall within the confidence level set .This finding is consistent with the test of hypothesis. As underscored by QuFenggeng (2012), IT infrastructure is the technical base of Enterprise Resource Planning (ERP) system. Just like other information systems, ERP needs features such as stable and effective software, the hardware, the memory and the service. The low effect of budgets in E-commerce in the present study may be related to cost and lack of awareness and skills in budgeting. It is also noteworthy that the majority of SMEs under study were small enterprises employing between 1-9 employees. Irefin (2012) in a study in Nigeria maintains that the availability of ICT infrastructure contributes significantly to the adoption of ICT in SMEs,

because if there is proper policy for telecommunication equipments and services in the country there will be increase in the usage of ICT in the businesses.

As concerns a firm's financial strength or capability and its effect on the level of adoption of E-commerce, Table 4.3.8 shows that 27.5% of the respondents (i.e. the majority) confirm that this aspect's effect is significant. A cumulative percentage of 52.0 indicated that this aspect has a significant effect on E-Commerce adoption among the Enterprises under study. This confirms that the adoption of E-commerce in the SMEs is heavily dependent on their financial strength/capability. Similarly tests of significance as shown indicate a value within the 0.05 level of significance set for the study. Such dependence on a firm's financial strength could be due to the fact that E-commerce infrastructure (computers, smart phones, i-pads among others) are expensive to purchase and also to maintain.

With regard to spending by the SMEs, Table 4.3.8 shows how the spending by the Enterprises under study affect the introduction of E-commerce. It is indicated that spending by these enterprises affect the adoption of E-commerce significantly (34.9 per cent). This can be contrasted to 6.6% of the respondents who indicated that the influence of spending by their enterprises in the adoption of E-commerce is not significant. The spending aspect of SMEs therefore is an important factor which contributes highly to the adoption of E-Commerce.

The extent to which loans from other agencies other than Government affect the introduction of E-commerce is shown on Table 4.3.8. The responses revealed that other loans apart from those from the two levels of Government influence the introduction of E-commerce in the Enterprises under study at a percentage of 25.3. These loans are important to the SMEs since it is observed that the introduction of E-commerce is heavily dependent on the enterprises' financial strength/ capability.Generally, a test of significance using Chi square indicate that the valuesare less than the set $p<0.05$, an aspect that supports the key findings of the study.

4.3.7 Effects of Marketing Resource Factors

Table 4.3.9 shows how marketing resource factors affect the adoption of E-commerce in the enterprises under study. 33.2% of the respondents shows that marketing resources affect adoption of E-commerce significantly while 5.7% of the respondents indicate that these factors do not affect the adoption of E-commerce in a significant way.

Table 4.3.9 Effects of Marketing Resource Factors

Indicator	Extent of Adoption	Frequency	Percent	Test of Significance (Chi Square)	
Enterprise Marketing Resource Factors	No extent	13	5.7	Chi-Square	55.039
	Low extent	28	12.2	Df	4
	Moderate extent	54	23.6	Sig.	.000
	Great extent	58	25.3		
	Very great extent	76	33.2		
Internet Advertising	No extent	54	23.6	Chi-Square	13.948
	Low extent	25	10.9	Df	4
	Moderate extent	44	19.2	Sig.	.007
	Great extent	49	21.4		
	Very great Extent	57	24.9		
Ownership of websites	No extent	65	28.4	Chi-Square	17.004
	Low extent	36	15.7	Df	4
	Moderate extent	48	21.0	Sig.	.002
	Great extent	51	22.3		
	Very great extent	29	12.7		
Online Product Sales	No extent	68	29.7	Chi-Square	14.428
	Low extent	44	19.2	Df	4
	Moderate extent	43	18.8	Sig.	.006
	Great extent	38	16.6	Chi-Square	14.428
	Very great extent	36	15.7		
Online Customer care/Communication	No extent	73	31.9	Chi-Square	21.459
	Low extent	34	14.8	Df	4
	Moderate extent	44	19.2	Sig.	.000
	Great extent	41	17.9		
	Very great extent	37	16.2		

Source: Research data, 2015

In Table 4.3.9, a considerable number of the respondents at a cumulative percentage of 46.5 have their E-Commerce usage/adoption affected significantly by internet advertising through e-mail, online advertising like Jumia, OLX ,Whatsapp, Facebook etc. This response is followed by the respondents who indicate that this affects their enterprises moderately (19.3%). A percentage of 23.7 indicate that the influence was not significant at all.

Table 4.3.9 also shows the extent to which ownership of websites affect the extent of E-commerce in the enterprises under study. The majority of the respondents (28.5%) indicated that owning of websites do not in any way affect the extent of E-commerce in their enterprises. Only 21.1% of the respondents indicated that this aspect affects the adoption of E-Commerce moderately. This finding contradicts the findings by Gaffney (2007) who asserts that consumers are increasingly interested in communicating with companies via new and multiple channels such as voice, email, web chat, short message services (SMS).

On the extent to which online product sales affect the extent of E-commerce adoption in the SMEs under study, the findings indicate that 29.7 % noted that this activity is not significant as an effect on E-commerce adoption in their enterprises, (Tables 4.3.9). This shows how minimally e-selling as an E-commerce project is utilized by these SMEs. This could be attributed to the lack of expertise and resources to set up websites let alone using them for marketing. Based on the Adoption Ladder model theory, the enterprises studied are still to cross the first digital divide; i.e. possession of basic skills in ICT to operate e-mail and browse simple brochure websites for information (Taylor and Murphy 2004, p. 283).The authors posit that the Adoption Ladder model for SMEs demonstrates the components of organizational sophistication as typical business endeavors accrue to develop in successive steps to the next level on the ladder. Consequently, as the organizational sophistication increases (the independent variable x-axis) the level of utilization and business benefit (the dependent variable y-axis) increases with it. Taylor and Murphy (2004: 283) hold the view that in order to attain the goal of full sophistication, firms must cross two digital divides. The first one is the possession of basic skills in ICT to operate e-mail and browse simple brochure websites for information. The second digital divide is the doorstep to e-business stage which requires advanced skills in ICT including research and development, as well as a range of specialist business skills and knowledge in areas like management, strategy and marketing.

In Table 4.3.9, a majority of the respondents (31.9%) indicated that online customer care/communication does not significantly affect the extent of E-commerce adoption in their enterprises. This shows that the SMEs may not be using E-commerce platforms for customer care/communication. Mwangangi (2014) in a study of information and communication technology solutions on the growth of Small and Medium enterprises in Nairobi County found out that while management of both actual and potential customers poses a major challenge, the extensive use of Customer Relationship Management systems (CRMs) should be adopted to provide an integrated platform for customer profiling, feedback collection and customer communication interfaces. Improved customer experience is obviously a recipe for business growth. This recommendation appears to be based on low adoption of CRMS by SMEs in Nairobi County.

Concerning the use of internet through phones, computers and cyber cafes in marketing research and information storage, Table 4.3.9 shows that this activity affects the adoption of E-commerce moderately (44.1per cent).This is in line with the Kenya's level of internet penetration which now stands at 53.3% while internet users increased to 21.6 million compared to 21.2million the previous quarter, (Communications Authority of Kenya Quarterly Statistics Jan- March 2014), a phenomenon that cuts across all the Counties in Kenya. Chi-square tests of Significance are within the set $p<0.05$ a confirmation that the constructs under study have significant influences on levels of E- Commerce adoption among the SMEs studied.

4.3.8 Effects of Human Resource Factors

Table 4.3.10 Effects of Human Resource Factors

Indicator	Extent of Adoption	Frequency	Percent	Test of Significance (Chi Square)	
Allocation of Funds	No extent	30	13.1	Chi-Square	28.620
	Low extent	27	11.8	Df	4
	Moderate extent	43	18.8	Sig.	.000
	Great extent	65	28.4		
	Very great extent	64	27.9		
	Total	229	100.0		
Purchase of ICT hardware and software	No extent	35	15.3	Chi-Square	15.083
	Low extent	29	12.7	Df	4
	Moderate extent	50	21.8	Sig.	.005
	Great extent	57	24.9		
	Very great extent	58	25.3		
	Total	229	100.0		
E-Commerce and ICT Training	No extent	51	22.3	Chi-Square	6.961
	Low extent	41	17.9	Df	4
	Moderate extent	59	25.8	Sig.	.138
	Great extent	40	17.5		
	Very great extent	38	16.6		
	Total	229	100.0		
Priority for E-commerce Projects	No extent	72	31.4	Chi-Square	21.415
	Low extent	35	15.3	Df	4
	Moderate extent	48	21.0	Sig.	.000
	Great extent	40	17.5		
	Very great extent	34	14.8		
	Total	229	100.0		
Top Management Support	No extent	6	2.6	Chi-Square	100.279
	Low extent	17	7.4	Df	4
	Moderate extent	64	27.9	Sig.	.000
	Great extent	54	23.6		
	Very great extent	88	38.4		
	Total	229	100.0		

Source: Research data, 2015

Table 4.3.10 indicates that allocation of funds influence the introduction of E-Commerce at a significant extent with a cumulative percentage of 56.3.This aspect forms part of the enterprise resources and therefore remains consistent with the objective of the present study. This resonates well with Irefin's study (Irefin *et al*., 2012) of Nigerian SMES who confirms that management

support and invariably their decisions to allocate funds, have a positive relationship with the adoption of ICT in SMEs.

As shown in Table 4.3.10, the purchase of ICT hardware and software affects the adoption of E-commerce significantly at a cumulative percentage of 50.2. The ICT products purchased make up part of the Enterprise's Resources and thus conform to one of the objectives of the present study; to determine their effect of Financial Resource Factors on adoption of E-commerce. It has been established empirically that there is a strong positive relationship between management and strategy implementation (Hrebiniak& Snow, 1982; Smith &Kofron, 1996; Schmidt & Brauer, 2006; Schaap, 2006). Most of the studies point out the important figurehead role of management in the process of strategy implementation. Such strategy implementation also includes decisions made concerning funds allocation to operationalize E-Commerce adoption strategies.

Concerning the responses to the question of the extent to which training in E-Commerce and ICT among SMEs contribute to the adoption of E-commerce among the SMEs under study, Table 4.3.10 shows that the majority of the respondents indicate that this activity affect the adoption of E-commerce at a moderate extent, (25.8 percent). This is followed closely by the respondents who noted that this activity does not contribute in any way towards adoption of E-commerce strategies in the enterprises under study (22.3 Percent). These responses could be due to the fact that this activity of ICT and E-commerce training is a rare activity carried out in the SMEs under study. The decision to train staff being a management matter, the present study conforms to findings of Molla and Licker 2005 who posit that top managers exert a tremendous influence. According to Schaap (2006) effective senior-level leadership behaviors will be directly related to successful Strategy implementation.

Table 4.3.10 indicates the responses based on how the priority for E-commerce projects by Management influences the adoption of E-commerce in the enterprises under study. The majority

of the respondents at 31.4% gave a response that this priority for E-commerce projects do not in any way contribute to the adoption of E-commerce strategies. This response could be attributed to the low priority given by the SMEs Management to E-commerce projects. Sandy Chong (2006) in a study among Australian SMEs observes that E-Commerce adoption seems to be more of a management matter than a technical one. Researchers have found that if there is a lack of support amongst top executives, technology cannot be successfully adopted (Corbitt *et al*, 1997,Cooper and Zimud 1990, Grandon and Pearson 2003,Wongpinunwatana, 2003 and Ramamurthy 1995). Chi –Square tests generally indicate confidence intervals within the set level of $p<0.05$.

4.3.9 Effects of Technological Resource Factors

Table 4.3.11: Effects of Technological Resource Factors

Indicator	Extent of Adoption	Frequency	Percent	Test of Significance (Chi Square)	
Technological Resources	No extent	12	5.2	Chi-Square	55.651
	Low extent	27	11.8	Df	4
	Moderate extent	56	24.5	Sig.	.000
	Great extent	72	31.4		
	Very great extent	62	27.1		
	Total	229	100.0		
Availability of ICT infrastructure and hardware	No extent	22	9.6	Chi-Square	62.463
	Low extent	16	7.0	Df	4
	Moderate extent	47	20.5	Sig.	.000
	Great extent	68	29.7		
	Very great extent	76	33.2		
	Total	229	100.0		
Cost of e-commerce Facilities	No extent	28	12.2	Chi-Square	15.389
	Low extent	36	15.7	Df	4
	Moderate extent	52	22.7	Sig.	.004
	Great extent	53	23.1		
	Very great extent	60	26.2		
	Total	229	100.0		
Pressure to communicate and buy or sell from other countries	No extent	31	13.5	Chi-Square	14.079
	Low extent	33	14.4	Df	4
	Moderate extent	57	24.9	Sig.	.007
	Great extent	53	23.1		
	Very great extent	55	24.0		
	Total	229	100.0		
Expected benefits of E-Commerce	No extent	35	15.3	Chi-Square	10.585
	Low extent	37	16.2	Df	4
	Moderate extent	43	18.8	Sig.	.032
	Great extent	61	26.6		
	very great extent	53	23.1		
	Total	229	100.0		

Source: Research data, 2015

Table 4.3.11 shows the extent to which E-commerce adoption is affected by Technological resources. A great to very great extent accounts for a cumulative percentage of 58.5 as the effect of technological resources on E-Commerce in these enterprises. In a study of factors affecting e-commerce adoption in small and medium enterprises in Botswana, Shemi *et al*., (2012) describes

the Networked Readiness Index (NRI) whereby states are ranked on their preparedness in embracing ICT and Ecommerce. According to the study, The (NRI) is defined as a nation's or community's degree of preparation to participate in and benefit from ICT developments (WEF, 2003). Based on the global networked readiness rankings (GITR, 2012), Kenya's ranking is 92 out of 144 countries according to the Networked readiness index 2014. In as far as this study is concerned therefore the results drawn are assessed against this position. Kenya's rating is at over 63 %. Further, this agrees with Letangule and Letting (2012) who established that at 5% level of significance and 95% level of confidence, technology innovation strategies had a 0.003 level of significance; the highest among product innovation strategies, process innovation strategies and market innovations. This confirms the findings of the present study.

In addition, Table 4.3.11 shows the responses based on how the availability of ICT infrastructure and hardware influence the introduction of E-commerce are shown. A cumulative percentage of 62.9 of the respondents indicate that this influences the adoption of E-commerce in their enterprises significantly. ICT infrastructure which includes computers, phones & ipads form the components on which E-commerce projects are operated and this justifies this response. Irefin *et al.,* (2012) in a study among Nigerian SMES uphold that the availability of ICT infrastructure as an important factor that inhibits the adoption of ICT by SMEs. If there is adequate ICT infrastructure in the country, it will be very easy for SMEs to adopt it rather than run away from it. Kapurubandara *et al.,* (2006), in his study found that the availability of internet facilities and telecommunication services as some of the factors affecting the adoption of ICT by SMEs in a developing economy.

The effect of the cost of E-commerce facilities including internet, computers, phones & Cybercafé charges on the levels of adoption of E-commerce in the SMEs under study is shown on Table 4.3.11. The responses reveal that this aspect affect the introduction of E-commerce at a significant extent (49.3%). Considering the effects that the financial strength and capability of

these SMEs have on the adoption of E-commerce, the cost factor of the E-commerce facilities becomes essential in influencing its adoption.

Table 4.3.11 similarly shows the extent to which the pressure for globalization and internationalization affect the introduction of E-commerce among the SMEs. A majority of the respondents (72.1 percent) indicated that the urge for globalization and internationalization has a significant effect on E-commerce adoption. This finding is in consonance with the findings of Peixin Li *et al.*, (2012) in a study on globalization/internationalization and e-commerce, maintains that firms facing foreign competition are under greater pressure to adopt e-commerce, expand market share and operate more efficiently. In consonance, Kraemer *et al*., (2002), Jaw and Chen (2006) and Gregory *et al.*, (2007) all found a positive relationship between globalization and e-commerce adoption. In the present study, though positive the correlation is weak possibly owing to the budding nature of internet and E-Commerce use.

In Table 4.3.11 a cumulative percentage of 49.7 show that the expected benefits of E-commerce influence the adoption of E-commerce significantly. Additionally, 15.3% of these respondents indicate that this has no significant influence in the adoption of E-commerce in their enterprises. These findings close ranks with the Transporter model theory by Levy & Powell (2002) .The authors discuss the theory stating that firms are usually cautious in adopting the Internet and some owners do see its values for their growth but need to know the actual obtainable benefits than merely perceived ones before they put their investment on it. Accordingly the combination of the drivers in the different levels results in the four groups of segments in Internet adoption patterns; namely brochure ware, business opportunity, business network and business support. In all the aspects, a significance test point to the rejection of the null hypothesis (regarding the variable in question) and the acceptance of the alternative hypothesis that Technological Resources have a significant effect on the levels of E-Commerce adoption among SMEs in Kericho County.

4.4 Inferential Statistics

Unlike descriptive statistics which only consider properties of the observed data, and uses Measures of Central Tendency and Measures of Dispersion, inferential statistics relate to the process of making deduction from properties of an underlying distribution, (Upton and Cook 2008). Inferential statistics ascribe meaning to a population, tests hypotheses and derives estimates. In the present study, inferential statistics were used to further determine relationships between the study variables, and to test hypotheses. The aim of doing this is to compare with the results obtained from the descriptive statistics and firmly draw inferences to confirm relationships established.

In the present study, composite variables were used to facilitate analysis using Linear regression. A composite variable is a measure in statistics and research design which is based on multiple data items. It is used to give a single score based on a series of responses to various questions(Babbie 2012).As stated by Babbie (2012), the three common composite measures include indices which measure and summarizes rank and specific observations usually on a the ordinal scale. Such scales are advanced indices whose observations are further transformed due to their logical or empirical relationship and typologies and are measures which classify observations in terms of their attributes on multiple variables, (usually on a nominal scale). In the present study, composite variables were derived from the various sets of responses in the data set to facilitate further analysis and discussion.

4.4.1 Test of Hypothesis

Since a questionnaire was used as the key research tool in the present study, care was exercised to ensure that it was reliable enough to capture the envisaged data for analysis in line with the study's objectives. Sections B, C, D, E and F of the research tool was concerned with testing the variables of the study namely, Financial factors ,Marketing Resource Factors, Human Resource

factors and Technological factors. A Likert's scale of 1= Very great extent,2= Great extent, 3 = Moderate extent, 4 = low extent and 5= no extent. The specific items measured the extent to which the SME has adopted E-Commerce strategies. Regression analysis as explained by Kothari (2004) as a linear composite of explanatory variables in such a way that it has maximum correlation with a criterion variable. The Linear regression equation takes the form: $Y = ßo + ß1X1 + ß2X2 + ß3X3 + ß4X4 + e$ where Y is the dependent variable ßo is the y intercept while Co-efficient ß1, ß2, ß3, ß4 are the slopes of the regression equation. X1, X2, X3 and X4 are the independent variables while *e* is the error term. The error term denotes the error in prediction or the difference between the estimated propensity to adopt and the actual propensity (Sekaran *et al.,* 2010). In the present study, Linear regression method was used as a test of hypotheses and the results are presented in tables and figures.

$H0_1$: Financial Resources have no statistically significant effect on the levels of adoption of E-commerce strategy by Small and Medium Enterprises (SMEs) in Kericho- Kenya

Table 4.4.1 Financial Resource Factors and E-Commerce Adoption

R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
				R Square Change	F Change	Df 1	Df 2	Sig. F change	
.437	.191	.187	8.670	.191	53.540	1	227	.000	1.960

Source: Research data, 2015

Table 4.4.1 indicates that financial factors have a statistically significant relationship with E-commerce adoption with a coefficient of determination of 19% .This implies that among the variables under study, factors relating to financial resources can explain 19 % of the variability in levels of E-commerce adoption strategy among SMEs in Kericho County, Kenya. It would be appropriate to conclude that there is a statistically significant relationship between Financial Resource factors and levels of E-Commerce Adoption. Subsequently the null hypothesis that Financial Resources have no statistically significant effect on the levels of adoption of E-

commerce strategy by Small and Medium Enterprises (SMEs) in Kericho, Kenya is hereby rejected and the alternative hypothesis that financial resources have a statistically significant effect on the levels of adoption of E-commerce strategy by Small and Medium Enterprises (SMEs) in Kericho, Kenya is, on this basis accepted. This finding resonates with Martin and Matlay (2005) who cited the lack of resources and expertise available to SMEs as a factor which hampers the stages of adoption of E-Commerce among them. Similarly the employment of highly skilled manpower by SMEs with the requisite ICT skills to support higher level Internet usage and invariably E-commerce adoption depend largely on the availability of financial resources.

Table 4.4.2 Financial Resource Factors and E-Commerce Adoption (ANOVA)

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	4024.708	1	4024.708	53.540	.000
	Residual	17064.095	227	75.172		
	Total	21088.803	228			

Source: Research data, 2015

Table 4.4.2 shows an analysis of variance between financial resource factors and E-commerce adoption of the SMEs under study. Analysis of Variance (ANOVA) is a hypothesis testing procedure that tests whether two or more means are significantly different from each other. According to Cooper and Schindler (2006) analysis of variance tests the null hypothesis that the means of several independent populations are equal; test statistic is the F ratio; used when you need k-independent samples test". The P value obtained was 0.001 which is less than the set level of significance of P-Value <0.05. As a result, this leads to the conclusion that Financial factors have a significant effect in the adoption levels of E-Commerce strategy among SME in Kericho County- Kenya. Displaying the data of the effects of Financial resources on adoption levels of E-Commerce in a histogram shows a normal curve although slightly skewed to the right as shown in Figure 4.4.0. This depicts that the general effect of Financial factors on E-commerce adoption is significant.

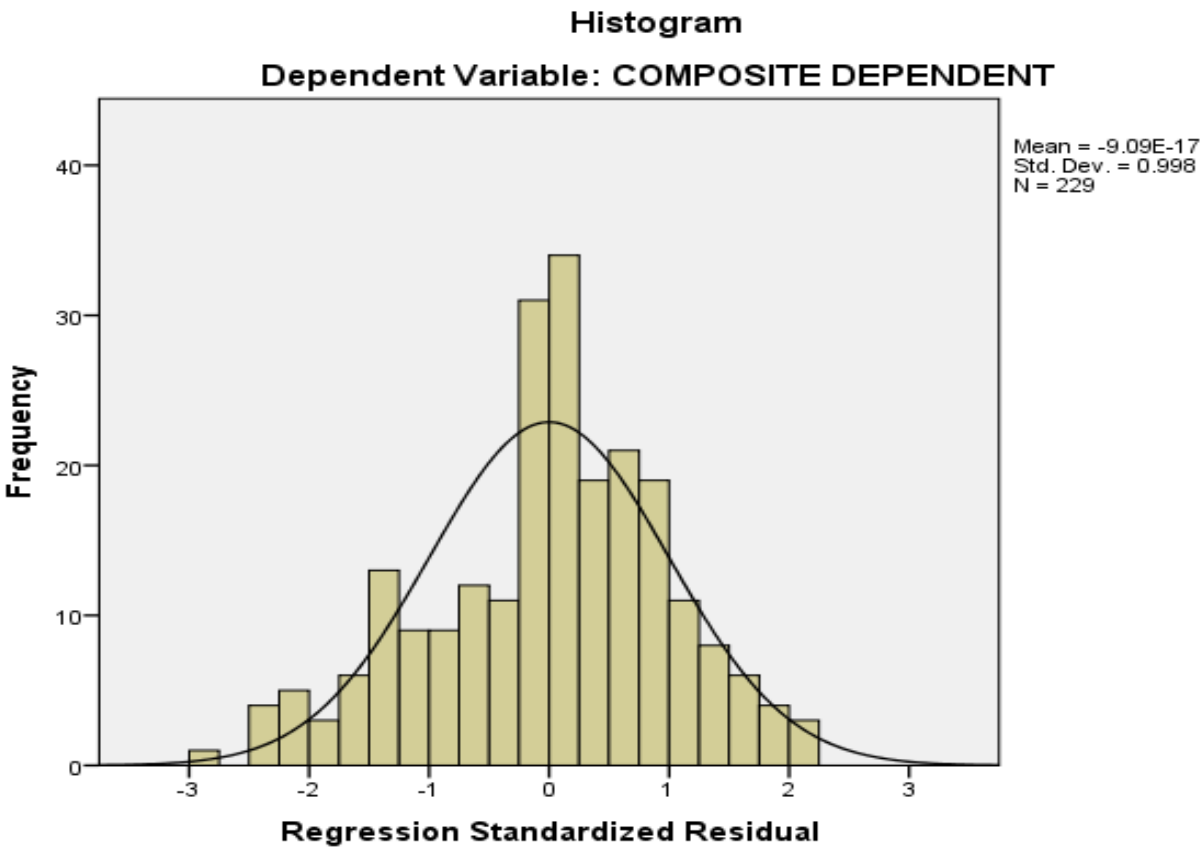

Figure 4.4 Financial Factors and E-Commerce adoption

Source: Research data , 2015

$H0_2$: Marketing Resources have no statistically significant effect on the level of adoption of E-commerce strategy by SMEs in Kericho- Kenya

Table 4.4.3 Regression results for Marketing Factors and E-Commerce Adoption

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.654	.428	.426	7.288	.428	170.047	1	227	.000	1.848

Source: Research data, 2015

From Table 4.4.3, marketing resource factors explain 42% of the variability in levels of E-commerce adoption strategy among SMEs in Kericho County, Kenya. Essentially, it is therefore scientific to conclude that there is a statistically significant relationship between Marketing Resource factors and levels of E-Commerce Adoption. As a result, the null hypothesis that Marketing Resource Factors have no statistically significant effect on the levels of adoption of E-commerce strategy by Small and Medium Enterprises (SMEs) in Kericho- Kenya is hereby rejected and the alternative hypothesis that Marketing Resources have a statistically significant effect on the levels of adoption of E-commerce strategy by Small and Medium Enterprises (SMEs) in Kericho- Kenya is, as supported by this finding accepted.

The variable which is collectively referred to as marketing resources in the present study, refers to an SME's overall marketing effort and specifically, the use of internet advertising, ownership of websites, online product sales and online customer care/interaction and use of ICT systems in marketing research and data management. This finding is in line with Gaffney (2007) who asserts that consumers are increasingly interested in communicating with companies via new and multiple channels: not just voice, but also email, web chat, short message services (sms) and so on.

Table 4.4 .4 Marketing Resources and Ecommerce Adoption (ANOVA)

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	9031.888	1	9031.888	170.047	.0001
	Residual	12056.915	227	53.114		
	Total	**21088.803**	**228**			

Source: Research data, 2015

In Table 4.4.4, the results for ANOVA between marketing resources and the adoption levels of E-commerce are displayed. Under 1 and 227 degrees of freedom and a significance level of 0.05, an F-table value of 170.047 was obtained i.e. (F1, 227, 0.05 = 170.047). The significance value obtained for this test was 0.001 which is less than the set level of significance of 0.05. Accordingly therefore, the null hypothesis that Marketing Resources have no significant effect in the adoption of E-Commerce is thus rejected and a conclusion is drawn that Marketing Resources have a statistically significant effect in the adoption levels of E-Commerce among the SMEs under study. Representing this information in a histogram produces a plateau shaped histogram as shown in the Figure 4.4.1 which shows that the overall effect of Marketing Resources on E-commerce adoption in the SMEs under study as having a moderate effect.

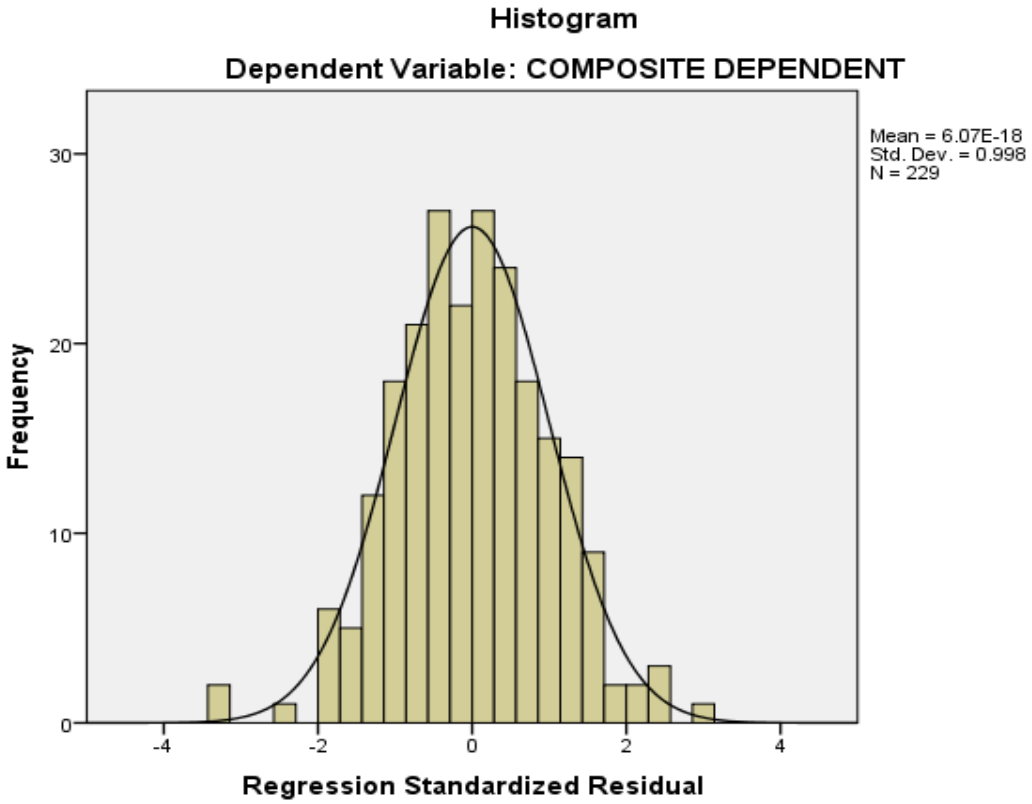

Figure 4.4.2 Marketing Resources and E-Commerce Adoption

Source: Research data, 2015

$H0_3$: Human Resource factors do not have a statistically significant effect on the level of adoption of E-Commerce strategy by SMEs in Kericho- Kenya

Table 4.4.5 Human Resource Factors and E-Commerce Adoption

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.646	.417	.414	7.361	.417	162.244	1	227	.000	1.924

Source: Research data 2015

From Table 4.4.5, it can be noted that human resource factors explain 41% of the variability in levels of E-Commerce adoption strategy among SMEs in Kericho County, Kenya. It is subsequently concluded that there is a statistically significant relationship between marketing resource factors and levels of E-commerce adoption. As a result, the null hypothesis that Human Resource factors have no statistically significant effect on the levels of adoption of E-commerce

strategy by Small and Medium Enterprises (SMEs) in Kericho- Kenya is accordingly rejected and the alternative hypothesis that Human Resource factors have a statistically significant effect on the levels of adoption of E-commerce strategy by Small and Medium Enterprises (SMEs) in Kericho, Kenya is as supported by this finding, accepted.

It is noteworthy that this variable has a strong explanatory power at 41%.This could largely be attributed to the fact that the Human Resource aspects and especially Top management, form the key decision making unit in SMEs as confirmed by Poon and Swatman (1999) and Rashid and Al Qirim (2001) who found that a manager or CEO's innovativeness, and IT knowledge has a positive effect toward adoption of E-commerce. Individual characteristics such as age, education, experience, and physiological traits of the CEO are an essential part toward the adoption of internet technology in SMEs. International web use should consist of language and feature that follow according to rules, regulation and culture that cannot be offensive to any web user.

Table 4.4.6 Human Resource Factors and E-Commerce Adoption (ANOVA)

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	8790.209	1	8790.209	162.244	.0001
	Residual	12298.594	227	54.179		
	Total	21088.803	228			

Source: Research data, 2015

Table 4.4.6 above shows ANOVA results between Human Resource factors and E-Commerce adoption in the SMEs under study. The F- table value obtained for this test was 162.244. The P-Value obtained for this test was 0.001 which is statistically significant at 0.05 level of significance or 95% confidence interval. For this reason therefore and for the purposes of testing the hypothesis, the result lead to a rejection of the null hypothesis that Human Resource factors have no statistically significant effect in the adoption levels of E-Commerce among SMEs in Kericho .It is concluded that Human Resource factors have a statistically significant effect on the adoption levels of E-Commerce. This provides proof that the effects of Human Resources factors on adoption levels of E-Commerce are not due to chance. In this case, the

histogram (see Figure 4.4.2), show a normal plateau- shaped curve depicting that most of the observations lies around the center of the distribution. The effect therefore of human resource factors on E-commerce adoption is to a moderate extent.

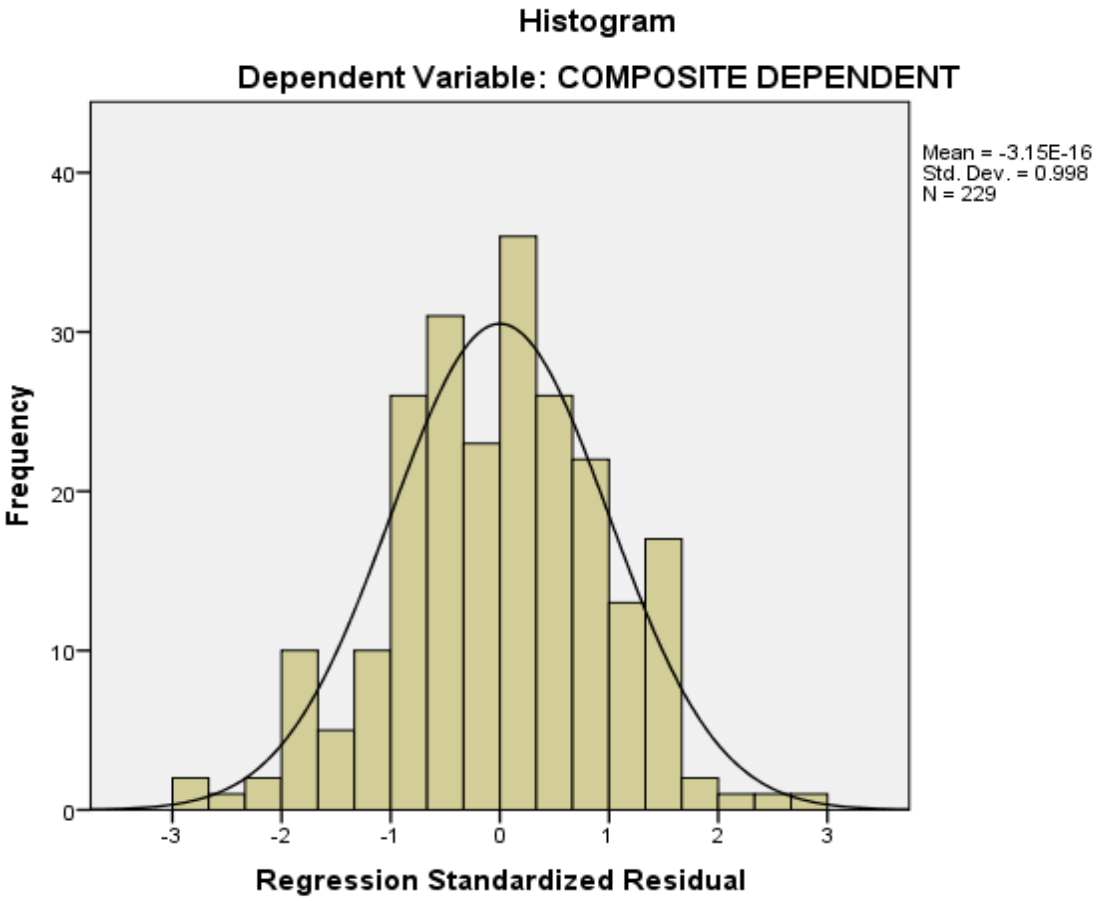

Figure 4.4.3 Human Resource Factors and E-Commerce Adoption

Source: Research data 2015

$H0_4$: Technological Resources have no statistically significant effect on the level of adoption of E-commerce strategy by Small and Medium Enterprises in Kericho- Kenya.

Table 4.4.7 Technological Resources and E-Commerce Adoption

R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
				R Square Change	F Change	df1	df2	Sig. F Change	
.538	.289	.286	8.127	.289	92.276	1	227	.000	1.886

Source: Research data, 2015

Table 4.4.7 shows that Technological factors explain 28% of the variability in Levels of E-Commerce Adoption strategy among SMEs in Kericho County-Kenya. As a result of the finding it is evident that there is a statistically significant relationship between Technological Resource factors and levels of E-Commerce Adoption. Consequently, the null hypothesis that Technological factors have no statistically significant effect on the levels of adoption of E-commerce strategy by Small and Medium Enterprises (SMEs) in Kericho- Kenya is hereby rejected and the alternative hypothesis that Technological factors have a statistically significant effect on the levels of adoption of E-commerce strategy by Small and Medium Enterprises (SMEs) in Kericho- Kenya is, as supported by this finding, accepted.

In a study of factors affecting e-commerce adoption in small and medium enterprises in Botswana, Shemi *et al.,* (2012) describes the Networked Readiness Index (NRI) whereby States are ranked on their preparedness in embracing ICT and E-commerce.

According to the study, The (NRI) is defined as a nation's or community's degree of preparation to participate in and benefit from ICT developments (WEF, 2003). Based on the global networked readiness rankings (GITR, 2012), Kenya's ranking is 92 out of 144 countries according to the Networked readiness index 2014.

In as far as this study is concerned therefore, the results drawn are assessed against this position. Kenya's rating is at over 63 %. Further, this agrees with Letangule and Letting (2012) who established that at 5% level of significance and 95% level of confidence, Technology innovation strategies had a 0.003 level of significance; the highest among product innovation strategies, process innovation strategies and market innovations. This confirms the findings of the present study.

Table 4.4.8 Technological Resources and E-Commerce Adoption (ANOVA)

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	6094.990	1	6094.990	92.276	.000
	Residual	14993.813	227	66.052		
	Total	**21088.803**	**228**			

Source: Research data 2015

In Table 4.4.8, an Analysis of Variance (ANOVA) between Technological Resources and E-Commerce adoption is shown. An F-table value of 92.276 is obtained and a P-Value of 0.001 which is less than the significance level of 0.05 is established. Therefore this leads to a decision to reject the null hypothesis and accept the alternative hypothesis that Technological Resources have a statistically significant effect on the adoption levels of E-commerce in the SMEs under study.

Representing the effect of Technological resources in a histogram produces a generally normal curved (plateau pattern) histogram as shown in Figure 4.4.3. This shows that most of the observations lie around the center of the distribution. The effect of Technological Resource Factors on E-Commerce adoption therefore is moderate among the SMEs under study.

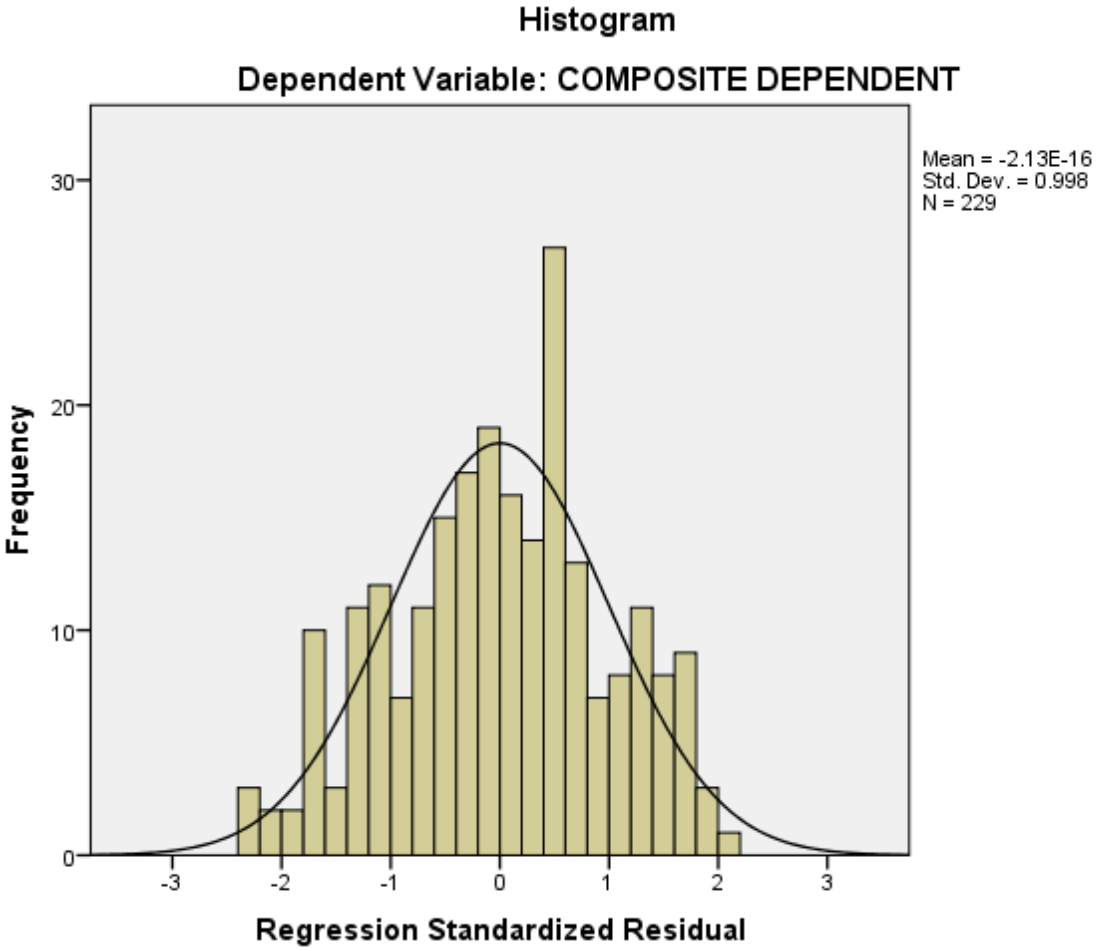

Figure 4.4.3 Technological Factors and E-Commerce Adoption

Source: Research data, 2015

Table 4.4.9 Correlation Analysis

Variable	E-commerce Adoption	Technological Resources	Human Resource Factors	Financial Factors	Marketing Resource Factors
E-Commerce Adoption	1.000	.538	.646	.437	.654
Technological Resources	.538	1.000	.626	.608	.573
Human Resource factors	.646	.626	1.000	.442	.610
Financial Factors	.437	.608	.442	1.000	.521
Marketing Resources	.654	.573	.610	.521	1.000
Sig (1 tailed)	**.00**	**.00**	**.00**	**.00**	**.00**
N	**229**	**229**	**229**	**229**	**229**

Source: Research data 2015

4.4.2 Correlation Analysis

In the correlation matrix shown in Table 4.4.9, the relationships between the independent variables under study are shown. The aim is to determine the strongest correlation as compared to the rest of the variables. The correlation coefficient between Technological resources and Financial Resources is 0.626, marketing resources is 0.583, Human Resources factors is 0.664. (Table 4.4.9) The Coefficient of Correlation exhibited between Financial Resources and Marketing Resources is 0.521, Human Resources is 0.442 while that of Marketing Resources and Human Resources is 0.610. All these correlations are significant. Of these correlations, the highest relationship has been established between Technological and Human Resources at 0.626 a pointer to the effects caused by Technological factors in the adoption of E-Commerce among the SMEs studied.

It can be inferred that there is a strong link/relationship between Technological and Human Resource factors. It is noteworthy that Human Resource factors account for the strongest influence as an E-Commerce adoption predictor as compared to the rest of the variables. Further, in reality, it takes the interaction of people and technology to facilitate the use /deployment of a particular strategy. All correlations are below a coefficient correlation of 0.8 which rules out the presence of a Multi co linearity problem (Cooper and Schindler 2008).

Table 4.4.10 Model Summary-Correlation between Variables

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.729	.531	.523	6.643	.531	63.462	4	224	.000	1.965

Source: Research data, 2015

Coefficient of Determination

According to Cooper and Schindler (2006) a Coefficient of determination as symbolized by R^2 is an index of fit which explains how well the regression line fits the data; it is a measure of the predictive accuracy of the regression equation. Results of the present study showed that the model explanatory power (Coefficient of determination) represented by the R Square (Table 4.4.10) was 52.3 %. Since the Coefficient of Determination explains the extent to which changes in the dependent variable can be explained by the change in the independent variables, it means that 52.3% variation of the adoption levels of E-Commerce strategy can be explained by the variations of Financial factors Human Resource factors, Marketing Resources and Technological factors. This therefore means that other factors not studied in this research contribute 47.7 % of the effect of Enterprise resources on the levels of E-commerce adoption among the SMEs. Further research therefore, should be conducted to establish other factors (47.7 %) that affect the adoption of E-commerce in the SMEs in Kericho County -Kenya. The factors which hitherto remain undetermined could be attributed to the country's readiness to adopt ICT based operations as detailed in the Network Readiness Index (NRI) where in the year 2012, Kenya was ranked 92 out of 144 countries.

Table 4.4.11 Model Summary-Correlation between Variables

Model		Sum of Squares	df	Mean Square	F	Sig.
	Regression	11203.047	4	2800.762	63.462	.000
	Residual	9885.757	224	44.133		
	Total	**21088.803**	**228**			

Source: Research data, 2015

Table 4.4.11 above shows an analysis of variance results for the correlations between the four independent variables (Human Resource factors, Financial factors, Marketing resources and Technological resources) under study. An F-table value of 63.462 was obtained under 4 & 224 degrees of freedom and 0.05 level of significance, i.e. (F4, 224, 0.05 = 63.462). Further, a P-Value of 0.001 was obtained and it is less than the set $P< 0.05$ levels of significance. This leads to a conclusion that the combined effect of all the four variables on the independent Variable was significant and thus we reject the null hypotheses. Graphing this information in the form of a histogram produces a histogram that is normally distributed as shown in the Figure 4.4.4 below. The effects of the correlations between the variables therefore assume a normal distribution confirming the observation made in this regard.

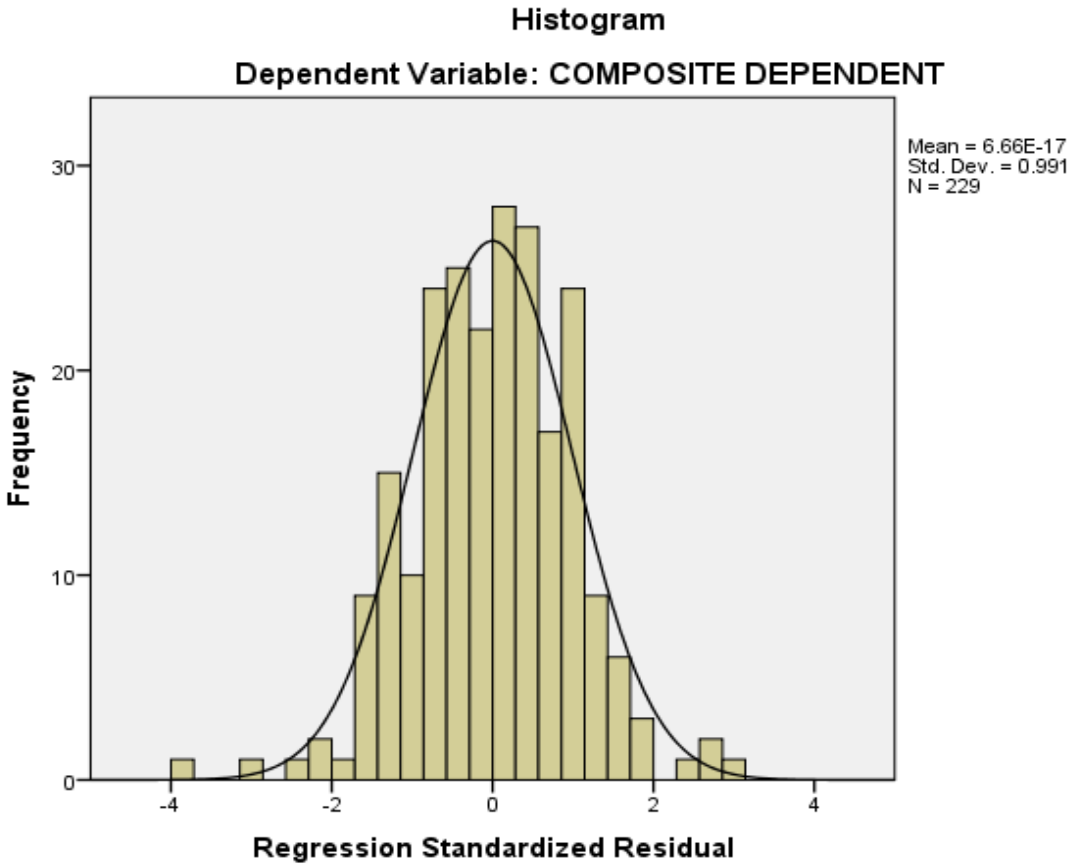

Figure 4.4.5 Correlation between Variables

Source: Research data, 2015

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents a summary of findings, conclusions, recommendations, implications for managerial practice and suggestions for further research. The researcher addressed the findings related to factors concerning the following resource aspects: financial, marketing and human. Other factors considered included technological factors and the level of adoption of the E-commerce strategy among SMEs in Kericho County, Kenya. The chapter covers a summary of the findings related to each of the variables under study.

This study sought to establish the effects of enterprise resource factors on levels of E-commerce adoption among Small and Medium Enterprises in Kenya. Enterprise resources refer to those factors within an enterprise which enable it to optimize its operations. In the present study, such factors included technological resource factors, financial resource factors, human resource factors and marketing resource factors. These are the resources that the SMEs in the study deploy in various forms depending on the different SME leaders in order to realize the specific goals. Reviewed studies have shown that these resources determine the firm's growth and capability to purchase equipment, business location, advertising, payment for data bundles from internet service providers, employment and retention of highly skilled staff.

The study used a questionnaire to elicit ratings-based responses which were analysed by converting the responses into composite variables. The SMEs studied were based on the definition given in Kenya's MSE Act, 2012. It is the position in the present study that the deployment of E-commerce by SMEs seeks to improve their growth, competitive positions, market share and profitability. Descriptive and inferential methods of analysis were used while

the general trends were analysed using measures of central tendency and measures of dispersion. Hypotheses tests were carried out using linear regression.

5.2 Summary of Findings

This section summarizes the findings of the study, provides interpretation, and discussion followed by conclusions. The study objectives are linked to the hypotheses and the analytical methods used for hypothesis testing.

In general, the study has established a positive relationship between the enterprise resource factors of finance, marketing, technology, and human resources and levels of E-commerce adoption with the strongest factors being marketing resources and human resource factors. Based on the analysis, marketing resource factors and human resource factors have the strongest explanatory power at 42% and 41% variability respectively. The explanatory power of technological factors is weaker at 28%. Financial resource factors account for the lowest variability most likely due to the non availability of finances among the SMEs studied.

Marketing resource factors identified include aspects of the SMEs' overall marketing effort such as the use of internet advertising, ownership of interactive websites, online product sales, online customer care/interaction and use of ICT systems in marketing, research and data management. It is evident that levels of E-commerce adoption by the SMEs under study are significantly influenced by the aspects identified above.

Under human resource factors, age and level of education have been established to have a relationship with the levels of E-commerce adoption in that the younger members of the SME population in Kericho, Kenya tend to easily adopt the use of the internet and invariably E-commerce usage than the older generation. It is also indicated that the SMEs under study could

be owned by, or employ relatively younger employees who are more likely to embrace emerging technologies including E-commerce.

5.2.1 Level of E-Commerce Adoption

With regard to the level of E-commerce adoption, the study concludes that the extent of use of computers, printers and the internet in the SMEs affect the level of E-commerce adoption to a very great extent and therefore the availability of computers, printers and internet connectivity is crucial in the growth and use of E-commerce by SMEs in Kericho, Kenya. Further, it is concluded that the level of E-commerce adoption through the use of email, and electronic money transfer among the SMEs is high especially MPESA and other mobile money transfer platforms. Most SMEs use their own cell phones to connect to the internet. The use of cyber cafes is not rated highly most likely owing to aspects of cost and proximity. Use of own computers is also not prevalent among SMEs.

5.2.2 Financial Resource Factors and Levels of E-Commerce Adoption

One of the study's objectives was to identify the effects of financial resources on the adoption levels of E-commerce strategy by Small and Medium Enterprises in Kericho, Kenya. Alongside the objective was the rejected null hypothesis that financial resources have no statistically significant effect on the levels of adoption of the E-commerce strategy by Small and Medium Enterprises (SMEs) in Kericho, Kenya. While financial resource factors have a statistically significant effect on E-commerce adoption, this effect is weak as shown from the findings of the study which indicate that the availability of financial resources influences the use of E-commerce in the enterprises at a moderate to a low extent. Most of the operations in the SMEs depend on funds availability and hence are constrained under this aspect. Financial resource factors account for only 19 % variability in explaining E-commerce adoption. This is the weakest among the three variables under study.

Studies by Martin and Matlay (2005) cite the lack of resources and expertise available to SMEs due to size as hampering each stage of the adoption, implementation and evaluation of E-commerce. Further concurrence is identified in studies by Irefin (2012) who, while studying the financial resources as a factor affecting the adoption of information and communication technology in small and medium scale enterprises in Nigeria describes the element of cost as a coefficient. The cost factor appears to be the largest among the significant variables, implying the cost of purchasing computer equipment and establishing a communication network system have a relatively important effect on ICT adoption.

5.2.3 Marketing Resource factors and Level of E-Commerce Adoption

After rejecting the null hypothesis that marketing resource factors have no statistically significant effect on the levels of E-commerce adoption strategy among SMEs, the researcher accepted the alternative hypothesis that marketing resource factors have a statistically significant effect on levels of E-Commerce adoption strategy. Based on this finding, it is noted that while marketing resource factors are generally significant, the specific constructs of *"…use of internet for advertising, product sales and customer care*' have low influence on the level of E-Commerce adoption. The pressure for globalization and internationalization do not have a strong influence in the adoption of E-commerce among SMEs. There is a finding that this urge for globalization and internationalization has a moderate effect on E-commerce adoption. Internet advertising through e-mail, online advertising like Jumia, OLX ,Whatsapp, Facebook have a significant effect on E-Commerce adoption among SMEs while ownership of Websites do not affect the extent of E-commerce adoption. Online product sales do not affect the extent of E-Commerce in the SMEs under study. The finding is that this aspect does not in any way affect E-commerce in their enterprises. This shows how minimally e-selling as an E-Commerce strategy is utilized by the SMEs under study. This could be attributed to the lack of expertise and

resources to set up websites let alone use them for marketing and communication. Online customer care/communication does not in any way affect the extent of E-commerce in their enterprises. This leads to a conclusion that the SMEs do not use E-Commerce platforms for customer care/communication. Considering this against the Adoption Ladder Model it implies that the SMEs under study have yet to cross the first digital divide.

5.2.4 Human Resource Factors and Levels of E-Commerce Adoption

The research objective in this instance was to determine the effects of human resource factors on the levels of adoption of E-commerce strategy among SMES and the null hypothesis which was rejected based on the findings stated that Human Resource factors had no statistically significant effect on the levels of adoption of E-commerce strategy among SME in Kericho County. From the findings, support from senior management which is a part of the Human Resource factors was found to influence the adoption of E-Commerce to a large extent. This could largely be attributed to the fact that the senior management forms the key decision making units among SMEs. Additionally, allocation of funds by the SME leaders influences the introduction of E-Commerce to a very great extent. Based on the analysis carried out, Human Resource factors of ICT knowledge and skills, E-commerce and ICT Training, Leadership's priority for E-Commerce Projects together with funds allocation stand out among variables with the strongest explanatory power for E-Commerce adoption among SMEs in Kericho, Kenya

5.2.5 Technological factors and Level of Ecommerce Adoption

The null hypothesis that technological factors have no statistically significant effect on the levels of E-commerce adoption strategy was rejected leading to the acceptance of the alternative hypothesis: *Technological factors have a statistically significant effect on the levels of E-Commerce adoption strategy among SMEs in Kericho County*. Based on the objective to find out the effects of technological resources on the levels of adoption of E-commerce strategies, ICT hardware and software influences were found to affect E-commerce adoption to a very great

extent while training in E-commerce and ICT was also determined to contribute in the introduction of E-commerce in the SMEs. This activity however, as seen in the findings appears rare among the SMEs. The levels of ICT knowledge among employees have a significant influence on the adoption of E-commerce in these Enterprises. This is in line with the finding that the majority of the employees in the SMEs under study is youth aged between 18-35 years. This group is more likely to possess better skills and knowledge in ICT as compared to the older SME owners and Managers.

According to the present study, and especially based on the analyses carried out, the influence of ICT knowledge among employees in relation to the qualifications held is significant; the significance declining from graduate, diploma and certificate level respectively. This leads to a conclusion that the higher the level of education attained, the greater is the influence of ICT knowledge in E-commerce adoption in the enterprises under study. Experience in ICT usage was proven to have a significant influence on E-Commerce adoption. Experience of five years and above in ICT usage has the greatest influence in adopting E-Commerce as concluded by the study. The respondents noted that E-Commerce improves business and makes work easier in terms of marketing because the buyer is accessed at the right time. It reduces the distance one has to cover to get to where the commodity is.

5.2.6 Findings from Qualitative data analysis

When respondents were asked to make suggestions to improve the extent and use of E-commerce among SMEs, they mainly proposed training of SME owners and employees in ICT and E-commerce usage and the lowering and subsidization of the cost of Desktops, Laptops, Smart phones and Internet connectivity for SME owners. This was followed by a considerable number of respondents who stated that the high prices of IT infrastructure inhibited their adoption and

hence it was necessary to improve their availability. The provision of loans by Government and other financing organizations to invest in ICT infrastructure is one of the key suggestions made alongside the suggestion that the Government should assist in setting up of ICT centres and internet hotspots for free WIFI services where entrepreneurs would login and carry out their transactions. Government should also set up projects to raise awareness and encourage establishment of online services for the purpose of marketing, advertising and global connection for better services for SMEs. ICT accessories should be made available for teaching people on the need and use of new technology for the improvement of production and the Marketing sectors among SMEs. Training of users on level of confidence and security in the use of ICT platforms was also suggested. Respondents proposed that the transaction money charged for mobile money transfer services needed to be made more affordable especially in cases of MPESA money transfers. Reduction or subsidization of the cost of internet connection was also proposed as a means to ease access to the internet.SME managers need to be encouraged to use mobile phones and computers for research purposes and for ordering and purchase of goods.

5.3 Conclusions

Having carried out the study as guided by the general objective which was to determine the effects of Enterprise Resource factors on the adoption levels of E-commerce strategy among SMEs in Kericho, Kenya, and having analyzed the data and made interpretations, it is concluded that generally there is a statistically significant effect by Enterprise resources on the levels of adoption of E-commerce strategies by SMEs in Kericho County, Kenya. Specifically, marketing resource factors have the strongest effect on the levels of E-commerce adoption among SMEs followed closely by Human Resource factors. Technological factors account for a significant but weak effect on levels of E-commerce adoption while financial resource factors are the weakest in variability and subsequently in explaining the level of E-Commerce adoption among the SMEs under study.

5.4 Recommendations/Implications of the study

The null hypothesis was rejected and the alternative hypothesis accepted that financial resource factors have a significant, though weak effect on the level of adoption of E-commerce strategy among SMEs. This was attributed to the low availability of financial resources in form of loans and funds held by the enterprises. For this reason, there is need for the County and National Governments to assist SMEs in identifying affordable sources of finance to enable them acquire ICT hardware and software or be able to pay for internet connectivity. Additionally, affordable financing would enable them employ skilled staff to improve their capacity to utilize more and more sophisticated aspects of E-Commerce and subsequently improve on their competitiveness, growth and profitability.

From the findings, marketing resource factors explain the highest variability in Levels of E-Commerce Adoption strategy among SMEs in Kericho County, Kenya. Consequently, the marketing resource aspects of internet advertising, interactive websites, online product sales and online customer care and use of ICT systems in marketing research and data management need to be further developed and their use within the SMEs be intensified. The SMEs in Kericho County now have a statistically sound basis to build on the marketing resource aspects to improve on the deployment of E-Commerce strategies.

Human resource factors are ranked second in the strength of variability in explaining E-Commerce adoption as a strategy among SMEs in Kericho County. Such factors include ICT knowledge among Managers and employees, readiness to adopt and use E-Commerce, attitude towards ICT and innovativeness, commitment to E-commerce adoption, managerial attitudes to new technology and risk, resource allocation, e-commerce projects' prioritization and level of training in ICT by employees at various levels .The study recommends that SMEs in Kericho

County can now emphasize training of the owners, managers and staff in Internet based businesses. SMEs should employ staffs who are trained and skilled in ICT to facilitate further adoption of Electronic commerce as a strategy for growth and profitability. Further, given that Top management support was established as being among the key influencers of Electronic Commerce adoption their sensitization and capacity building is hereby emphasized. This is because the individual characteristics such as age, education, experience, and the decision priorities of the CEO are essential part toward the adoption of internet technology in SMEs.

Technological resource factors depict a lower variability in influencing the Level of E-commerce Adoption strategy among SMEs in Kericho County-Kenya. As a result of this finding, it is imperative for SMEs in Kericho County to build their capacity and enhance such aspects such as availability of ICT infrastructure and current ICT use. Sensitization of SME owners and staff on the benefits of E-Commerce is imperative since it has been established that among other technological aspects, pressure for globalization and internationalization play a significant role in the adoption of E-Commerce strategy among SMEs.

5.4 Implications

The implications of the study are classified into theory, policy, and practice. The Following discussion covers implications for industry, research and Policy development.

5.4.1 Theory

It is proposed that an assessment of the relevance of the Adoption ladder model theory for SMEs on E-commerce adoption be studied further to strengthen or disagree with some or all of its positions. The Adoption Ladder Model formed a key theoretical anchorage for the present study and its scrutiny could further contribute relevant knowledge and theory in this field.

5.4.2 Policy

The study recommends that policies should be re-formulated to promote the usage of E-commerce strategies among SMEs especially considering that Enterprise resources (especially marketing resource factors and human resources) have a significant influence on the adoption of E-Commerce. This is mainly attributed to the fact that E-commerce improves communication, money transfer, competitiveness, productivity and growth among SMEs thus reducing the levels of unemployment, contributing in security and crime prevention, enhancing food security and generally improving the quality of life of the business owners and their employees.

Given the advent of devolution in Kenya where there are two tiers of Government namely; the National and County governments, the findings should be able to support policy formulation and implementation by the Kericho County Government in which the study was carried out.

5.4.3 Practice

At the industry level, both private and Government agencies that are involved with SME growth could help the SMEs in the development of E-commerce policy regarding funding and the provision of subsidies in the acquisition of mobile smart phones, computer hardware and software(infrastructure support) and also, in internet connectivity. Additionally, such support could include training and awareness creation in E-commerce benefits and usage strategies in line with the Enterprise factors which have been established as having a significant influence on the adoption of E-commerce among SMEs. The County and National Governments need to provide ICT centres and internet hotspots where SMEs can benefit from free or subsidized training and internet access.

To the SME owners, the study recommends that the County Government should facilitate strategic management studies and specifically E-commerce strategy crafting and deployment for SME owners and their employees. The training suggested should include both the SME owners and their employees as it will form a strategic initiative that would ensure that their collective knowledge and skill are enhanced. The net effect of this is to facilitate further deployment of enterprise resources in the development and usage of E-Commerce in their SMEs**.** The Counties can integrate backwards and support the National Government's computer training for primary schools programme so as to prepare future SME owners and employees to operate computers and participate effectively in E-commerce**.** SME owners should be assisted to source and recruit qualified staff with skills in ICT adequate enough to enable them delve seriously into the use of Electronic Commerce.To Researchers in the field of Strategy and E-Commerce adoption the findings can form a basis for further study and decision making in the interest of and the development of E-Commerce usage and strategy.

Further, the findings are generally beneficial as they propose support for further ICT usage and adoption of E-commerce among SMEs in Kenya and elsewhere in Africa. Concerning ICT training especially by Universities and other Institutions of Higher learning, it is suggested that there is need for emphasis on skills aimed at developing E-commerce usage capabilities. It is recommended that community-based programmes be established in conjunction with institutions of higher learning to support SMEs in nurturing strategic leadership skills in the deployment of E-commerce Strategies among SMEs in the counties. This is because institutions of higher learning would provide the expertise required in Strategic Leadership and E-commerce within the enterprises as part of their Corporate Social Responsibility (CSR) engagements.

5.5 Suggestions for Further Research

Studies are suggested covering the rest of the sub-counties of the Kericho County for confirmation and comparison of results. Further research needs to be conducted into why SMEs in the area are reluctant to adopt E-Commerce and reasons for the partial use of its functions. It may be necessary to study the effects of enterprise resources in the adoption of E-Commerce among larger SMEs with more advanced levels of E-Commerce usage. The study therefore suggests that in order to fully establish E-commerce usage and adoption among the SMEs further research needs to be conducted on status of E-commerce adoption among certain specific enterprise types such as those in agribusiness, tourism and hospitality. The proposed study could preferably cover more than one county. An assessment of the relevance of the Adoption Ladder model for SMEs theory on E-commerce adoption by SMES, which stood out in this study could further contribute relevant knowledge in this field. Replication of the study in other parts of Kenya is also recommended. Since loans availability's effect on E-commerce adoption was found to be low, it may be prudent to commission studies to determine specific reasons that would explain this occurrence.

Finally, it may be necessary to explore the other factors which influence E-commerce adoption and which contribute 52.9% of the effect of Enterprise resources on the levels of E-commerce adoption among the SMEs. Studies are also proposed to clearly and further establish the effects of financial factors in the adoption of E-commerce strategy. This is because the explanatory power for these factors in the present study was found to be weak. Further research too needs to be conducted on the challenges faced by SMEs in the use of IT-based platforms in business such as like Whatsapp, Facebook ,Twitter, Instagram and YouTube.

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APPENDIX I

KERICHO COUNTY- KENYA LOCATION

Note: Kericho County is highlighted in green

Source: USAid Kenya (2014)

APPENDIX 2

QUESTIONNAIRE

INTRODUCTION AND CONSENT

My name is John K. Bii, a Doctoral student at the Kabarak University, pursuing a PhD in Business Administration. I am undertaking a survey on EFFECTS OF ENTERPRISE RESOURCE FACTORS ON THE LEVEL OF ADOPTION OF E-COMMERCE STRATEGY AMONG SMALL AND MEDIUM ENTERPRISES IN KERICHO COUNTY-KENYA. This is therefore to request for your participation in this study. Please answer all questions to the best of your ability. The information I am requesting from you is for academic purposes only and shall be treated with strict confidence. No names or raw information shall be published but shall only used to collect data for analysis and recommendations to inform policy development. Thank you for taking your time to participate in this study.

PART A: RESPONDENT DETAILS AND OTHER INTERVIEW DETAILS

SECTION A: RESPONDENT DETAILS AND OTHER INTERVIEW DETAILS

1. NAME……..
2. Gender: Male [ ] Female [ ]
3. Age: (Tick as appropriate) 18-25 [ ] 26-35 [ ] 36- 45 [ ] 46-55 [ ] 55 years and above [ ]
4. What is your highest level of Education? Certificate [ ] Diploma [ ] Higher National Diploma [ ] Bachelors [ ] Masters [ ] PHD [ ] Other(Specify)……..
5. Name of your company/Enterprise (***optional***)
   …….
6. At what level of management are you currently serving?
   Director/Owner [ ] Manager [ ] Supervisor [ ] Other (Specify)
7. How long have you served in this position?
   Less than 1 year [ ] 1-2 [ ] 3-5 [ ] 6-8 [ ] 9 years and above [ ]
8. Duration of Operation in the Industry- Less than 1 year [ ] 1-5 years [ ] 6-10 [ ] 11-15 years [ ] 15 years and above [ ]
9. Ownership Structure Local [ ] Foreign [ ] Local and foreign [ ]
10. Enterprise type Agribusiness[ ] Education (School, College) [ ] Wholesale trade)[ ] Transport[ ] Health sector[ ] Professional service(Insurance Lawyers, Contractors, Electricians) [ ] Construction(Builders)[ ] Small manufacturing (welders, carpenters, Tailors) [ ] Hospitality(Hotels, Guest houses, Cafes, Outside caterers, event organization) [ ] Retail shops[ ]Other(Specify)……

11. Is your total investment less than 500,000?) Yes[ ] No[ ]
12. How many employees do you have?) 1-9[ ] 10-20[ ] 21-50[ ]
13. What are your yearly sales? 500,000-1000000[ ]less than 500,000 [ ]

PART B: E-COMMERCE AND INFORMATION AND COMMUNICATIONS TECHNOLOGY (ICT)

3. (i) Does your enterprise use computers and other aspects of Information technology?
Yes [ ] No [ ]

(ii) To what level does your Enterprise use the following in its communication, productions, data processing, and storage, dissemination and money transfer operations?
Using a scale of 1-5 where 1-very great extent, 2-great extent, 3-moderate extent4-low extent,5 None (tick as appropriate)

a.	Computers and printers	1	2	3	4	5
b.	Phones/Tablets					
c.	Internet					

(iii) In the use of the technology in (ii) above, to what extent does your enterprise use the following E-commerce technology aspects?(level of E-commerce adoption)
Using a scale of 1-5 where 1-very great extent, 2-great extent, 3-moderate extent4-low extent, 5-None (tick as appropriate)

		1	2	3	4	5
a.	E- mail					
b.	Electronic planning (enterprise resource planning)					
c.	Electronic enabled production (computer enabled production/manufacturing systems,designing posters ,letterheads,wedding cards ,business cards etc)					
d.	Online advertising(Olx,pigia-me,Social sites eg facebook, whatsapp)					
e.	Electronic sales(selling over the internet)					
f.	Electronic purchasing					
g.	Electronic funds transfer(payments and receipts eg mpesa,airtel money,orange..)					

(iv) In the use of E-mail above, rate the use of the following using a scale of 1-5 (where 1-very great extent, 2-great extent, 3-moderate extent4-low extent,5 None (tick as appropriate)

		1	2	3	4	5
a.	Cybercafe					
b.	Own cell phone					
c.	Own computer(laptop,ipad,etc)					

PART C: HUMAN RESOURCE FACTORS

4 (i) In the use of e-commerce as in (i) (ii) and (iii) to what extent has it been influenced by Top management support?

Using a scale of 1-5 where 1-very great extent, 2-great extent,3-moderate extent4-low extent, 5 No extent(tick as appropriate)

		1	2	3	4	5
a.	Effect of Top Management Support in the level adoption of Ecommerce					

(ii) On a scale of 1-5 where 1-very great extent, 2-great extent,3-moderate extent4-low extent,5 None, to what extent do the following Human Resource aspects of Leadership behavior influence in the introduction of E-commerce in your Enterprise?

		1	2	3	4	5
a.	Allocations of funds					
b.	Purchase of ICT hardware and software(phones/computers)					
c.	E-commerce and ICT training					
d.	Priority for E-commerce projects(decisions on use of internet thu phones and computers for business)					

(iii)In the use of E-commerce as in (i) (ii) and (iii) to what extent has it been influenced by Level of ICT knowledge among Employees?

Use the scale of 1-5 below where 1-very great extent,2-great extent,3-moderate extent4-low extent, 5-No extent

		1	2	3	4	5
a.	Level of ICT knowledge among Employees					

(iii). On the scale of 1-5 below where 1-very great extent,2-great extent,3-moderate extent4-low extent,5 No extent, How would you rate the influence of the level ICT knowledge among employees in relation to qualifications held?

	Qualification	**1**	**2**	**3**	**4**	**5**
a.	Certificate					
b.	Diploma					
c.	Graduate					

(iii) To what extent does Experience in ICT usage influence Ecommerce adoption

	Experience in years		**1**	**2**	**3**	**4**	**5**
a.	1-2yrs						
b.	3-4yrs						
c.	5yrs and above						

PART D: FINANCIAL RESOURCES

1. **(i)** In the use of e-commerce your enterprise to what extent has it been influenced by Financial Resource (funds availability) aspects.
   Use the scale of 1-5 below where 1-very great extent,2-great extent,3-moderate extent4-low extent, 5 No extent

	1	2	3	4	5
Effects of Financial resources in the adoption of E-Commerce					

(ii) What extent do the following Financial aspects influence the introduction of E-commerce in your Enterprise **Use the scale of 1-5 below where 1-very great extent,2-great extent,3-moderate extent4-low extent,5 No extent**

	FINANCIAL RESOURCE ASPECTS	1	2	3	4	5
a.	Finance/loans from National or county governments					
b.	Budgets for E-commerce Infrastructure(computers, smart phones, internet charges/connection)					
c.	Firms financial strength or capability					
d.	Spending by the business					
e.	Other Loans					

PART E: THE EFFECT OF TECHNOLOGICAL RESOURCES

6. (i) In the use of E-commerce in your enterprise what extent has it been affected by Technological Resources?

Use the scale of 1-5 below where 1-very great extent, 2-great extent,3-moderate extent4-low extent,5 No extent

		1	2	3	4	5
a.	Influence by Technological Resources (computers, phones, cybercafés, internet connection)on levels of Ecommerce adoption					

(ii) Use the scale of 1-5 below where 1-very great extent,2-great extent,3-moderate extent4-low extent,5 No extent, to rate the extent to which the following Technological Resource aspects influence the introduction of E-commerce in your Enterprise.

	TECHNOLOGICAL RESOURCES	1	2	3	4	5
a.	Availability of ICT infrastructure and hardware(computers, phones, cybercafés)					
b.	Cost of e-commerce facilities(internet, computers, phones, cybercafé charges)					
c.	Pressure to communicate and buy or sell from other countries(globalization and internationalization)					
d.	Expected benefits of E-commerce					

PART F: ENTERPRISE MARKETING RESOURCES AND E-COMMERCE ADOPTION

In the use of E-commerce in your enterprise what extent has it been influenced by Marketing Resources? **Use the scale of 1-5 below where 1-very great extent,2-great extent,3-moderate extent4-low extent,5 No extent.**

		1	2	3	4	5
a.	Effects of Enterprise marketing Resources on E-commerce adoption					

(ii) Use the scale of 1-5 below where 1-very great extent,2-great extent,3-moderate extent4-low extent,5 No extent, to rate the extent to which the following Marketing Resource aspects affect the extent of E-commerce in your Enterprise.

	MARKETING RESOURCES	1	2	3	4	5
a.	Internet advertising(promotion/selling thru email, OLX .Whatsapp, Face book etc)					
b.	Ownership of websites					
c.	Online product sales					
d.	Use of online customer care/communication					
e.	Level of Use of internet(thru phones ,Computers, Cyber) in Marketing research and information storage					

8. What suggestions would you give to improve the extent and use of E-Commerce among Small and Medium enterprises?

……
……
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THANK YOU

APPENDIX 3

RESULTS OF THE PILOT STUDY

(DESCRIPTIVE STATISTICS TABLES**)**

(i) Age of Respondents

Age					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	18-25	9	26.5	31.0	31.0
	26-35	9	26.5	31.0	62.1
	36-45	6	17.6	20.7	82.8
	46-55	3	8.8	10.3	93.1
	Above 55	2	5.9	6.9	100.0
	Total	29	85.3	100.0	
Missing	System	5	14.7		
Total		34	100.0		

(ii) Gender

Gender					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	male	16	47.1	55.2	55.2
	Female	13	38.2	44.8	100.0
	Total	29	85.3	100.0	
Missing	System	5	14.7		
Total		34	100.0		

(iii) Respondents Level of Education

Respondents Education Level					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Secondary	9	26.5	31.0	31.0
	Diploma	12	35.3	41.4	72.4
	Bachelor's Degree	6	17.6	20.7	93.1
	Master's Degree and above	2	5.9	6.9	100.0
	Total	29	85.3	100.0	
Missing	System	5	14.7		
Total		34	100.0		

(iv) Years of Service

Years of Service					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Less than one year	3	8.8	10.3	10.3
	1 to 2 years	8	23.5	27.6	37.9
	3 to 5 years	6	17.6	20.7	58.6
	6 to 8 years	3	8.8	10.3	69.0
	more than 8 years	8	23.5	27.6	96.6
	6	1	2.9	3.4	100.0
	Total	29	85.3	100.0	
Missing	System	5	14.7		
Total		34	100.0		

(v) Enterprise Type

Enterprise Type					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Education	2	5.9	6.9	6.9
	Wholesale	6	17.6	20.7	27.6
	Health Sector	3	8.8	10.3	37.9
	Professional Services	3	8.8	10.3	48.3
	Construction	1	2.9	3.4	51.7
	9	14	41.2	48.3	100.0
	Total	29	85.3	100.0	
Missing	System	5	14.7		
Total		34	100.0		

(vi) Level of Management

Level of Management					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Top Management	9	26.5	32.1	32.1
	Middle level management	11	32.4	39.3	71.4
	Lower level management	5	14.7	17.9	89.3
	Others	2	5.9	7.1	96.4
	9	1	2.9	3.6	100.0
	Total	28	82.4	100.0	
Missing	System	6	17.6		
Total		34	100.0		

(vii) Total Investment less than ksh 500,000

Total investment less than ksh 500,000				
	Frequency	Percent	Valid Percent	Cumulative Percent

Valid	Yes	6	17.6	21.4	21.4
	No	22	64.7	78.6	100.0
	Total	28	82.4	100.0	
Missing	System	6	17.6		
Total		34	100.0		

(viii) No of Employees

No of Employees at the enterprise					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1-9 people	22	64.7	75.9	75.9
	10-50	7	20.6	24.1	100.0
	Total	29	85.3	100.0	
Missing	System	5	14.7		
Total		34	100.0		

(ix) SME Revenues

SME Revenues					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Ksh 500,000-1 Million a year	28	82.4	96.6	96.6
	Less than Ksh 500,000 a year	1	2.9	3.4	100.0
	Total	29	85.3	100.0	
Missing	System	5	14.7		
Total		34	100.0		

(x) Use of Computers in the SME

Use of computers and other aspects of information technology					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	21	61.8	72.4	72.4
	No	6	17.6	20.7	93.1
	3	1	2.9	3.4	96.6
	5	1	2.9	3.4	100.0
	Total	29	85.3	100.0	
Missing	System	5	14.7		
Total		34	100.0		

(xi) **Use of Desktops in its communication, production, data processing and storage, dissemination and money transfer**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	very great extent	8	23.5	30.8	30.8

	great extent	5	14.7	19.2	50.0
	To a moderate extent	3	8.8	11.5	61.5
	To no extent	10	29.4	38.5	100.0
	Total	26	76.5	100.0	
Missing	System	8	23.5		
Total		34	100.0		

(xii) **Use of laptops in communication, production, data processing and storage, dissemination and money transfer**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	very great extent	7	20.6	25.0	25.0
	great extent	5	14.7	17.9	42.9
	To a moderate extent	3	8.8	10.7	53.6
	To a low extent	2	5.9	7.1	60.7
	To no extent	11	32.4	39.3	100.0
	Total	28	82.4	100.0	
Missing	System	6	17.6		
Total		34	100.0		

(xiii **) Use of wired/wired internet in communication, production, data processing and storage, dissemination and money transfer**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	very great extent	9	26.5	32.1	32.1
	great extent	4	11.8	14.3	46.4
	To a moderate extent	3	8.8	10.7	57.1
	To a low extent	4	11.8	14.3	71.4
	To no extent	8	23.5	28.6	100.0
	Total	28	812.4	100.0	
Missing	System	6	17.6		
Total		34	100.0		

(xiv) **Use of electronic mail**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	very great extent	9	26.5	32.1	32.1
	great extent	7	20.6	25.0	57.1
	To a moderate extent	2	5.9	7.1	64.3
	To a low extent	3	8.8	10.7	75.0
	To no extent	7	20.6	25.0	100.0
	Total	28	82.4	100.0	
Missing	System	6	17.6		
Total		34	100.0		

(xv) **Use of Electronic planning (enterprise resource planning**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	very great extent	7	20.6	25.0	25.0
	great extent	4	11.8	14.3	39.3
	To a moderate extent	2	5.9	7.1	46.4
	To a low extent	2	5.9	7.1	53.6
	To no extent	13	38.2	46.4	100.0
	Total	28	82.4	100.0	
Missing	System	6	17.6		
Total		34	100.0		

(xvi) **Use of Electronic enabled production (computer enabled production systems)**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	very great extent	4	11.8	14.3	14.3
	great extent	1	2.9	3.6	17.9
	To a moderate extent	3	8.8	10.7	28.6
	To a low extent	4	11.8	14.3	42.9
	To no extent	16	47.1	57.1	100.0
	Total	28	82.4	100.0	
Missing	System	6	1.7.6		
Total		34	100.0		

(xvii) **Electronic advertising**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	very great extent	4	11.8	14.8	14.8
	great extent	2	5.9	7.4	22.2
	To a moderate extent	2	5.9	7.4	29.6
	To a low extent	4	11.8	14.8	44.4
	To no extent	15	44.1	55.6	100.0
	Total	27	79.4	100.0	
Missing	System	7	20.6		
Total		34	100.0		

(xiix) **Online sales**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	very great extent	5	14.7	17.9	17.9
	great extent	1	2.9	3.6	21.4
	To a moderate extent	3	8.8	10.7	32.1
	To a low extent	4	11.8	14.3	46.4
	To no extent	15	44.1	53.6	100.0
	Total	28	82.4	100.0	
Missing	System	6	17.6		
Total		34	100.0		

(xix) Electronic purchasing

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	very great extent	4	11.8	14.3	14.3
	great extent	1	2.9	3.6	17.9
	To a moderate extent	7	20.6	25.0	42.9
	To a low extent	4	11.8	14.3	57.1
	To no extent	12	35.3	42.9	100.0
	Total	28	82.4	100.0	
Missing	System	6	17.6		
Total		34	100.0		

(xx) **Electronic funds transfer (payments and receipts)**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	very great extent	12	35.3	41.4	41.4
	great extent	7	20.6	24.1	65.5
	To a moderate extent	1	2.9	3.4	69.0
	To a low extent	1	2.9	3.4	72.4
	To no extent	8	23.5	27.6	100.0
	Total	29	85.3	100.0	
Missing	System	5	14.7		
Total		34	100.0		

INFERENTIAL STATISTICS

Table 1.1 .Correlation Analysis

		Financial Resources	**Technological resources**	**Human resources**	**Marketing resources**
Financial Resources	Rho	1			
	Sig. (2-tailed)				
	N	32			
Technological resources	Rho	.463**	1		
	Sig. (2-tailed)	.000			
	N	332	332		
Human resources	Rho	0.136**	0.022	1	
	Sig. (2-tailed)	0.04	0.876		
	N	332	332	332	
Marketing resources	Rho	0.043**	.331*	-0.17	1
	Sig. (2-tailed)	0.003	0.013	0.215	
	N	32	32	32	32

Table 2.1 Regression Analysis

	Unstandardized Coefficients		**Standardized Coefficients**	**T**	**Sig.**
	B	**Std. Error**	**Beta**		
(Constant)	7.201	3.502		2.056	0.045
Financial Resources	1.076	0.26	0.528	4.138	0.000
Technological resources	4.138	0.106	0.09	3.254	0.000
Human resources	0.278	0.102	0.202	2.725	0.000
Marketing resources	0.340	0.168	0.248	2.02	.047
R	0.515				
R Squared	0.528				
Adj R Squared	0.522				
F	6.145				0.000

APPENDIX 4

ONLINE SHOPS AND AFRICA'S RETAIL BUSINESS

(*Referred to in Chapter Two: Literature Review; E-Commerce Adoption Strategy*)

July 29th 2015

TECHNOLOGY | Sam Wambugu

How online shops are changing Africa's retail business

E-commerce companies: In Kenya, the popular e-retailer names in the industry are Jumia (known as Zando in South Africa), OLX, BidorBuy

The recent upturn in E-commerce enterprises across Africa is revolutionising not just the retail market but also business in general. The growth potential of this niche, as demonstrated by several e-commerce firms, showcases the enormous opportunity under-tapped.

The continent's leading IT markets, Nigeria and Cote D'Ivoire in West Africa and Kenya in East Africa have seen a rapid surge in the development of E-commerce businesses in the region.

Buoyed by mainly the urban, affluent and informed population, buying and selling of goods and services over an electronic network, primarily the Internet, or E-commerce as commonly known, is growing exponentially.

Experts estimate that the market will be worth $50 billion by 2018, compared to $8 billion in 2013. It is no wonder therefore that E-commerce businesses of various persuasions and sizes are springing up across the continent, and investment money is flowing into the sector.

In Kenya, the popular e-retailer names in the industry are Jumia (known as Zando in South Africa), OLX, BidorBuy. Considered Africa's biggest online retailer, with outlets in Egypt, Cote d'Ivoire, Kenya and Morocco, Jumia has grown into the most popular online shop in the region.

The E-commerce company, with its headquarters in Nigeria, was started to mimic Amazon by offering a diverse amount of products. The online retailer, which sells a range of items from electronics to apparel, has been expanding throughout Africa since its launch in 2012.

Shoppers visit the Jumia website (*Jumia.co.ke*) and once they buy the item of their interest, they can pay cash on delivery or through mobile money transfer or by credit card. The company boasts of cheaper prices and unique products and its website is among the top 10 most visited sites in Kenya.

"E-retail investors need to create brand awareness because majority of us grew up in the tradition of going to the shop, seeing the product..."

OLX (*OLX.co.ke*) on the other hand is a market place where individuals or companies can sell their new or used items. Sellers take a picture of the product, log on to the OLX website, create a description of the product and upload it to the marketplace with their contact details. Interested customers see the product, contact the seller and agree a meeting place for the transaction.

The other e-retailer, Bidorbuy (*bidorbuy.co.ke*), works almost same way as OLX only that their products are new.

The seller provides a detailed description and images of the items they are selling and upload to the Bidorbuy website. Shoppers can then browse the site and bid on or buy items they are interested in. Should there be a sale, the system puts the buyer and seller in contact with each other.

Comparing to western markets, Africa's road infrastructure is far from good. Locating homes to deliver goods bought online can be an onerous task as homes do not have specific addresses in most neighbourhoods, making it a challenging concept to implement.

Further, e-retail investors need to create brand and electronic process awareness because the majority of us grew up in the tradition of going to the shop, seeing the product, haggling over the price before buying it. It's a tough tradition to break.

Large swathes of the sub-Saharan Africa do not have reliable electricity which hampers growth of E-commerce and governments and investors need to fix this. Global and local E-commerce platforms and services also need to be tailored to local markets to account for currencies, languages, payment and shopping preferences.

The planning units of both the national and county governments need to implement universal address and postcode systems to ease the delivery of goods to clients. As a community, we need to gradually gain confidence in online payments.

All said and done, the legal and regulatory framework for E-commerce that addresses such issues as online privacy to protect the investors and clients has to be in place and functional.

Wambugu is a monitoring and evaluation specialist; samwambugu@gmail.com

Source: Nation Media,July 29th 2015

APPENDIX 5

PERMIT FROM NACOSTI

NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY AND INNOVATION

Telephone: +254-20-2213471,
2241349, 310571, 2219420
Fax: +254-20-318245, 318249
Email: secretary@nacosti.go.ke
Website: www.nacosti.go.ke
When replying please quote

9th Floor, Utalii House
Uhuru Highway
P.O. Box 30623-00100
NAIROBI-KENYA

Ref: No.

Date:

14th July, 2015

NACOSTI/P/15/1115/6770

John Kiplangat Bii
Kabarak University
Private Bag - 20157
KABARAK.

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on ***"Effects of enterprise resource factors on the level of e-commerce adoption among SMES in Kericho County Kenya,"*** I am pleased to inform you that you have been authorized to undertake research in **Kericho County** for a period ending **6th November, 2015.**

You are advised to report to **the County Commissioner and the County Director of Education, Kericho County** before embarking on the research project.

On completion of the research, you are expected to submit **two hard copies and one soft copy in pdf** of the research report/thesis to our office.

DR. M. K. RUGUTT, PhD, HSC.
DIRECTOR-GENERAL/CEO

Copy to:

The County Commissioner
Kericho County.

The County Director of Education
Kericho County.

National Commission for Science, Technology and Innovation is ISO 9001: 2008 Certified

CONDITIONS

1. **You must report to the County Commissioner and the County Education Officer of the area before embarking on your research. Failure to do that may lead to the cancellation of your permit**
2. **Government Officers will not be interviewed without prior appointment.**
3. **No questionnaire will be used unless it has been approved.**
4. **Excavation, filming and collection of biological specimens are subject to further permission from the relevant Government Ministries.**
5. **You are required to submit at least two(2) hard copies and one(1) soft copy of your final report.**
6. **The Government of Kenya reserves the right to modify the conditions of this permit including its cancellation without notice**

REPUBLIC OF KENYA

National Commission for Science, Technology and Innovation

RESEARCH CLEARANCE PERMIT

Serial No. A 5782

CONDITIONS: see back page

APPENDIX 6

AUTHORIZATION LETTERS FROM KERICHO COUNTY

THE PRESIDENCY
MINISTRY OF INTERIOR AND CO-ORDINATION OF NATIONAL GOVERNMENT

Telegrams: .....
Telephone: Kericho 20132
When replying please quote
kerichocc@yahoo.com

COUNTY COMMISSIONER
KERICHO COUNTY
P.O. BOX 19
KERICHO

REF: MISC.19 VOL.II/20

15th July, 2015

TO WHOM IT MAY CONCERN

RE: RESEARCH AUTHORIZATION- JOHN KIPLANGAT BII

The above named from the Kabarak University has been authorized to undertake research on ***"Effects of enterprise resource factors on the level of e-commerce adoption among SMES in Kericho County Kenya".***

He has also been authorized to carry out research on the same by the National Commission for Science, Technology and Innovation.

Any assistance accorded to him to achieve his goal will be highly appreciated.

JULIUS K BIRGEN
FOR: COUNTY COMMISSIONER
KERICHO COUNTY

MINISTRY OF EDUCATION, SCIENCE AND TECHNOLOGY
STATE DEPARTMENT OF EDUCATION

FAX NO.05221361
When Replying Please Quote:

District Education Office
P.O BOX 149
KERICHO

REF: KER/C/ED/GC/2/VOL. 1/270

1st December, 2015.

TO WHOM IT MAY CONCERN.

RE: RESEARCH AUTHORIZATION – JOHN KIPLANGAT BII.

The above named has been authorized by National Council for Science, Technology and Innovation to undertake research on ***"Effect on enterprise resource factors on the level of e-commerce adoption among SMES in Kericho County Kenya"*** for a period ending 12th December, 2015.

Accord him the necessary assistance.

HELLEN NYANGAU
COUNTY DIRECTOR OF EDUCATION
KERICHO COUNTY.

APPENDIX 7

LIST OF PUBLICATIONS

1. Assessing the impact of change management strategies on the Administration of Kenya Prisons Service. Published in the International Journal of Economics, Commerce and Management United Kingdom Vol. III, Issue 8, August 2015. Licensed under Creative Common Page 617. *http://ijecm.co.uk/* ISSN 2348 0386
2. Effects of Technological resources in the adoption of E-Commerce strategy among SMEs in Kenya. Published in the International Journal of Economics, Commerce and Management United Kingdom Vol. III, Issue 10 October 2015. Licensed under Creative Common Page 617 . *http://ijecm.co.uk/* ISSN 2348 0386
3. Effects of Human competencies in the adoption of E-commerce strategies among SMEs in Kenya. Published in the International Journal of Economics, Commerce and Management United Kingdom Vol. III, Issue 10, October 2015. Licensed under Creative Common Page 617. *http://ijecm.co.uk/* ISSN 2348 0386
4. An analysis of the effects of change in a Kenyan Governmental rehabilitation Department. 2010-2011(A study of the Kenya Prisons Service Department)-Paper presented at the 5TH, Annual International Conference on industry and higher education: venue- the Boma Hotel South C, Nairobi; date: 22nd to 24th October 2014-Theme: Management, Leadership, Ethics and Integrity in a Changing world: Lessons from African philosophy