

**FACTORS INFLUENCING ADOPTION OF E-COMMERCE  
AMONG YOUTH ENTREPRENEURS IN NAKURU TOWN,  
KENYA**

**BY**

**AGNES WAMBUI KARIME**

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## DECLARATION

This research project is my original work and has not been presented for any degree or any award in any other university.

Signature\_\_\_\_\_ Date\_\_\_\_\_

**Agnes W. Karime.**

L50/71685/2011

This research project has been submitted for examination with my approval as the university

Signature\_\_\_\_\_ Date\_\_\_\_\_

**Dr Harriet Kidombo, PhD**

**Senior Lecturer**

**School of Continuing and Distance Education**

**University of Nairobi**

## **DEDICATION**

This research project is dedicated to my beloved husband Peter Karime for his moral and financial support, self-sacrifice and determination to ensure my success; also, to my dear children Harrison, Joseph and Ann. Not forgetting my dear mum Hellen who has been a source of inspiration and encouragement throughout my studies and having laid a good foundation in my education.

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## LIST OF ACRONYMS

BPOs	Business Process outsourcing
E-commerce	Electronic Commerce
EDI	Electric Data Interchange
FDIs	Foreign Direct Investments
GDP	Gross Domestic Product
GOK	Government of Kenya
ICT	Information and Communication Technology
IDT	Innovation Diffusion Theory
ISPs	Internet Service Provides
KEU	Kenya Economic Update
OECD	Organization for Economic Cooperation Development
SME	Small and Medium Entrepreneur
TAM	Technology Acceptance Model
TPB	Theory of Planned Behavior
TRA	Theory of Reasoned Action
WTO	World Tourism Organization

## **ABSTRACT**

In the past few years, significant growth has been realized in the internet based services in the pure internet business as well as the traditional enterprise, which are coming of age and advancing their online presence. This study seeks to investigate the factors influencing the adoption of e-commerce among the youth entrepreneurs in Nakuru Town. Variables under this study include the perceived benefits, internet service diffusion, access patterns and security and privacy concerns. The study was conceived due to the fact that there was lack of comprehension to the real issues that entail enhanced adoption of electronic commerce in developing nation like Kenya. There was great concern on the reluctance, and even the sluggish pace that the SMEs have adopted towards the adoption of electronic commerce platforms. This study incorporated the use of an exploratory research design. The target population comprised of young entrepreneurs in Nakuru town. The size sample was 198 entrepreneurs. Questionnaires and oral interviews were used to collect the data required. The collected data was coded and analyzed by use of descriptive statistics. The data was the analyzed using SPSS v.20. The findings established that, the number of small enterprises that had so far adopted some aspects of e-commerce was low. The findings further point to the strong influence of perceived benefits, internet diffusion and security/ privacy concerns on adoption of e-commerce. Internet access patterns influence but not as strongly as the other three attributes. It was evident that 'cost consciousness' remains a key determinant of decisions made. The entrepreneurs expressed their concerns on inherent risks that could lead to financial, technical or even time losses. It would be advisable for the Government, in partnership with the key players from the private sector, to undertake nationwide campaigns to further raise the levels of awareness, and possibly demystify the integration of e-commerce into normal business routines. Young entrepreneurs, and their staff, should also be encouraged to invest in their IT and other technical skills in order to fully take advantage of the ICTs. Similar studies should however be undertaken in less urban areas of Kenya so as to address this challenge of sluggish e-commerce adoption from both perspectives of an urban, and a rural population.

# CHAPTER ONE

## INTRODUCTION

### 1.1 Background of the Study

The two most powerful forces affecting the world economy and commerce today are the increasing rate of globalization and advances in information and communication technologies (ICTs). In recent years, the exponential growth in ICTs and the resulting rapid emergence of electronic commerce (E-Commerce) have drastically been reshaping the world of business. Much confusion, however, surrounds the definition of e-commerce; as reckoned by Ihlstrum et al (2003), the confusion stems from whether to define e-commerce as Internet based activities only or as any kind of business exchange on any type of network. On that matter, this study will adopt an all-purpose perspective with regard to e-commerce and attempt to derive the characterization of e-commerce from its two broad components; electronic and commerce.

Electronic is generally presumed to indicate a medium or platform that incorporates the use of Information Communication Technologies (ICTs). Commerce, on the other hand, is largely regarded as the study of how man organizes the distribution and exchange of commodities so as to satisfy his needs in the most efficient manner. Mukiibi (1981) opined that commerce was the chain that links the people who produce goods and services to those who want the same goods and services. Based on the description of the two components of e-commerce, a simple refinement and consolidation of key terms begets the definition of e-commerce that will be used in this study. E-commerce can hence be regarded as any economic or business activity that uses ICT based applications to enable the buying and selling of goods and services and to facilitate the transaction of business activities between and among businesses, individuals, governments or other organizations. E-commerce involves digitally enabled commercial transactions between and among organizations and individuals.

E-commerce intersects at the business firm boundary at the point where internal business systems link up with suppliers. These e-commerce activities include internet retailing (e-tailing), electronic data interchange (EDI), Internet banking, electronic settlements and browsing and selection of products and services over the net.

Forrester Research (2000) estimated that by the end of year 2004, the value of global e-commerce would breach the US \$6.8 trillion mark. Of these e-commerce revenues, US based businesses would contribute an overwhelming US \$2.7 Trillion and, Asia Pacific region would contribute as much as US \$992 Billion. In Australia, where most of the e-commerce studies have been undertaken due to its pervasive internet usage (ranked at second after Finland in the OECD regions), eTForecast (2000) reported that an estimated 1.4 billion electronic transactions were carried out by the end of 1997. It would be noted, as pointed out by Steven J. Kafka of Forrester Research those businesses in the US and other advanced economies are universally preparing to transact their business of buying and selling on-line

Gregory, J. F. (2012) opined that a positive growth of the Atlantic Canadian economy, despite its low population base and distance from highly populated urban areas, is next to impossible without growth at the small and medium enterprise (SMEs) level, where, like in many other parts of the world, these smaller enterprises make up over 90% of all businesses. As a result, researchers worldwide have been tracking the performance of these organizations looking for ways to encourage their growth and thereby stimulate local economies. Much of the recent focus of this research, as Porter, M. E. (2001) would put it, has been on the adoption of Information and Communication Technologies (ICTs) for SMEs as they have been shown to improve operational efficiencies and enhance market reach among other benefits,

To fully fathom the operations of e-commerce, it would be prudent to appreciate its advent and the consequent three-stage metamorphosis over a particular period of time. These stages were informed by Pearson scholarly articles available at ([www2.sta.uwi.edu/.../questions.pdf](http://www2.sta.uwi.edu/.../questions.pdf)). The three stages in the evolution of e-commerce are innovation, consolidation, and reinvention.

During the Innovation stage, e-commerce was primarily technology-driven. Innovation took place between the periods of 1995 to mid-2000 and was characterized by excitement and idealistic visions of markets in which quality information was equally available to both buyers and merchants. Startups during the Innovation stage were financed by venture capitalists and, for the most part, e-commerce during this period was largely ungoverned. This phase was characterized by an emphasis on deconstructing traditional distribution channels and dis-intermediating (the removal of middlemen) of existing channels. These early years of



e-commerce saw an infusion of pure online businesses that thought they could achieve unassailable first mover advantages. However, e-commerce did not fulfill these visions during its early years despite firms placing an emphasis on revenue growth, and quickly achieving high market visibility.

After 2000, e-commerce entered its second stage of development: the consolidation stage. In this stage, more traditional firms began to create their online presence via use of the Web to enhance their existing businesses whereas less emphasis was now placed on creating new brands. In the Consolidation stage, there was a rise in the amount of regulation and governmental controls by governments worldwide. Whereas the early years of e-commerce were dominated by the first movers, the Consolidation stage of e-commerce was characterized by the well-endowed and experienced Fortune 500 and other traditional firms. Startups in the Consolidation stage were primarily financed by traditional methods. During the same period, the role of intermediaries strengthened as successful firms adopted a mixed “bricks-and-clicks” strategy which in essence combined the traditional sales channels such as physical stores and printed catalogs with online consumer engagements.

In 2006, though, e-commerce entered its current phase, the reinvention stage, as social networking and Web 2.0 applications (a set of new, advanced applications that have evolved along with the Web’s ability to support larger audiences and more integrated content) reinvigorated e-commerce and encouraged the development of new business models. Today’s e-commerce, while still business-driven, is also audience, customer, and community-driven where audience and social network growth are being emphasized. Today, startups are once again being financed by venture capitalists, albeit with smaller investments. There is a proliferation of small online intermediaries that are renting the business processes of larger firms. There is also the return of pure online strategies in new markets, as well as a continued extension of the “bricks-and-clicks” strategy in traditional retail markets. The concept of first-mover advantages are returning in new markets as traditional Web players catch up. All these activities in the cyberspace have invited extensive government regulation and surveillance to ensure fair play, consumer protection and strict adherence to best business practices.

However it is not all doom and gloom as there are certain pertinent issues that will help define the future of e-commerce over the next few years including: 1.) the continued

proliferation of ICTs and e-commerce applications through all commercial activity; this then dictates that overall revenues will continue to rise rapidly; and the numbers of both visitors and products and services sold will continue to grow. Prices will rise to cover the real costs of doing business on the Web and to pay investors a reasonable rate of return on their capital. 2.) Continued ease of entry onto the electronic commerce trading platforms with steadily increase competition and erode the first mover advantages. Consequently, e-commerce margins and profits will rise to the level of traditional retailers as the revenues from sales and cost of goods sold via e-commerce platforms approaches equality to that of traditional firms. 3.) Continued aggression by the top e-commerce sites will increasingly obtain very well-known brands from strong, older traditional firms. This will be in an effort by the said firms to acquire a larger footprint into the traditional market place and also in the rapidly expanding market space.

In a nutshell, the number of successful purely online companies will further decline whilst the most successful e-commerce firms will accommodate use of both traditional marketing channels such as physical stores, printed catalogs, and e-commerce Web sites.

## **1.2 Statement of the Problem**

ICT is a general purpose technology since it has a wide scope of improvement and elaboration, applicability across a broad range of uses and strong complementarities with existing and potential new technologies; and as such has a pervasive impact on the economy that cannot be undermined for any longer. The pervasive nature of ICT ensures its investment as a capital input in production contributes to overall capital deepening in other sectors thus helping in generating employment and improving labour productivity.

According to Rogers (1995), the adoption of e-commerce or any other new technological product is a decision process that moves through different stages over a period of time. In the case of SMEs, Kendall et al (2001) reasoned that diffusion was the process by which an innovation such as e-commerce is communicated through certain channels over time among members of a social system. E-commerce is considered to provide substantial benefits to businesses, including SMEs, largely via improved efficiencies and increased revenues, as well as the creation of new opportunities for business and consequent employment.

However, even in the fairly economically advanced nations in Europe, the Americas and parts of Eastern Asia, a majority of SMEs have access to internet services but do not necessarily

incorporate e-commerce applications into their business activities. As indicated by Lawson R., Carole A., Cooper J. and Burgeis L. (and cited in the Journal of small Business and Enterprise Development, 2003), internet access does not necessarily equate to e-commerce practices. According to the Australian Industry Group (AIG, 1999), 78 percent of its members had an internet connection but only a mere 23 percent admitted to having incorporated some aspects of e-commerce in their business such as official web page. On the other hand, in the Americas, US SMEs registered as high as 80 percent internet connectivity (Hobley, 2001) but only 32 percent had an e-commerce ready official web page (Caswell, 2000).

According to the OECD, leading the pack in overall internet usage is Finland, closely followed in second and third place by the USA and Australia in that order. This, then, begs the question of where developing nations like Kenya stand as far as the adoption and subsequent utilization of e-commerce is concerned. Wanjau K., Ayodo E. and Macharia N. R. (2012) opined that despite the great opportunities envisaged from the adoption of e-commerce by SMEs, general ICTs usage patterns continue to show slow progression particularly in commerce-oriented activities. Macharia J. (2009) further indicated that there was limited systematic research into the challenges small and medium enterprises faced in their adoption of e-commerce in developing nations and in particular SMEs in Kenya, thus curtailing the generation of informed solutions to address such challenges. This study, therefore, seeks to interrogate the factors affecting the adoption of e-commerce among the youth entrepreneurs in Nakuru town.

### **1.3 Purpose of the Study**

The purpose of this study was to review the development of e-commerce from a global, regional, national and local (Nakuru County) perspective, and establish the factors inhibiting the adoption of e-commerce amongst the youth entrepreneurs in Nakuru town, Kenya.

### **1.4 Objectives of the Study**

The study was guided by the following four objectives:

1. To examine the influence of perceived benefits on the adoption of e-commerce among the youth entrepreneurs in Nakuru Town.
2. To analyze the influence of internet service diffusion on adoption of e-commerce among youth entrepreneurs in Nakuru Town.
3. To examine the influence of internet access patterns on the adoption e-commerce among the youth entrepreneurs in Nakuru Town
4. To identify the influence of security readiness in the adoption of e-commerce among the youth entrepreneurs in Nakuru Town.

#### **1.4 Research Questions**

The following four research questions crafted from the stated objectives guided the study:

1. What are the perceived benefits influencing the adoption of e-commerce among the youth entrepreneur in Nakuru Town?
2. What the state of internet service diffusion that influence the adoption of e-commerce among the youth entrepreneurs in Nakuru town?
3. To what extent has the internet access patterns influenced the adoption of e-commerce among the youth entrepreneurs in Nakuru town?
4. To what extent has security readiness influenced the adoption of e-commerce among youth entrepreneurs in Nakuru town

## **1.5 Significance of the Study**

Economic growth and consequent creation of employment opportunities particularly amongst the youth cannot be sustained with capital accumulation alone, as the contributions of capital, without technological advancement, will be subject to diminishing returns

The Kenyan ICT sector, today, is well-seasoned for investment owing to the three submarine fiber optic cables, a 5000km national backbone fiber, 62 licensed BPOs, 73 licensed ISPs, massive investments from within and abroad in form of FDIs, and a significantly youthful tech savvy population; clearly, Kenya has realized a much wider penetration of ICT but there is the urgent need for adoption of e-commerce than the present situation if it is to have a comparative advantage in the production and exportation of ICT based products and services.

Previous studies have indicated the significant benefits to enjoyed by SMEs, most of which are ran by the youthful populace, that adopt and use e-commerce in their organizations. But to the contrary, the well-educated tech savvy youths mostly found in urban areas continue to bear the brunt of high unemployment in Kenya.

In recent years, broad band's positive impact on economic development and social networks have become evident to leaders in both the public and private sectors; this essential technology facilitates pivotal socio-economic elements such as education, health, trade, and innovation across various industries. Broadband penetration has transformed interaction among businesses, consumers, and governments and as such, it should be in forefront of strategies to arrest the runaway unemployment among the youth.

## **1.6 Delimitation of the Study**

This study specifically focuses on the factors affecting the adoption and usage of e-commerce by the youth entrepreneurs in Nakuru town, Kenya as It is argued by Crawford (1998) that participation in e-commerce is important, not just from the perspective of commercial transactions but rather in the way it encourages transformation of internal systems and the subsequent efficiencies in terms of cost, responsiveness to customers, customization of offerings and the potential emergence of new products and services. This study will be conducted within the borders of Nakuru County. However, such data collected outside of the county but deemed pertinent for statistical analysis and comparisons shall be considered to be indispensable. The collection of data shall span from the late 1990s to the most recent of data available.

## **1.7 Limitations of the Study**

The 'social fabric' in Kenya is sown with suspicion and mistrust particularly in the areas concerning personal declarations. This might get in the way of collection of such data that is deemed dear to the respondent e.g. whether he/she owns a mobile phone, Personal Computer, ICT literacy and e-commerce awareness levels etc. However, in light of Bassey (1999, 73-74), this problem can be steered clear of by the assurance to the respective respondents that such information will be treated with utmost level of respect, professionalism and confidentiality.

The collection of primary data will be achieved by means of face-to-face interviews, focus group discussions and administering well written structured questionnaires. These data collection techniques may be very expensive and time consuming; this might not augur well with the fact that the time period for collecting, validating and analyzing the enormous amounts of data might not be adequate enough. However, with proper planning and self-organization, the seemingly herculean task is surmountable.

## **1.8 Assumptions of the Study**

The fundamental assumption entertained in order to enable the undertaking of this study is that the sample unit under focus is a true representation of the population, and that the responses collected back from them provided the necessary data for a conclusive and informed outcome.

The study also assumes that the entrepreneurs in question shall be responsive and honest in their correspondence to ensure the true picture is captured.

## **1.9 Definition of Significant Terms of the Study**

**E-commerce** - this is the transaction of commercial activities, amongst individuals, businesses and governments, on the new platforms offered by the ever increasing new information communication technologies (internet, web 2.0, mobile money transfers etc.)

**Youth entrepreneurs-** these are young businesspersons, between the ages of 15 – 35 years, who are running/ managing duly registered business enterprises (mostly small and medium enterprises)

**Adoption-** this is the incorporation, integration and consequent assimilation of new technologies and innovations, including e commerce, into the daily operations of a business enterprise.

**Perceived benefits** – these are the presumed or anticipated net gains (or losses) to be realized by the individual or enterprise that adopts and consequently utilizes new technologies, and more particularly e-commerce. These net gains could be addressed in monetary terms (the financial impacts to individuals/ enterprises) or non-monetary terms (the general well-being of individuals/ enterprises).

**Internet diffusion** – this is the supply side of internet services that involves the infrastructural amenities laid down by the government and other service providers, and the dissemination of such information that brings internet services closer to the general public (consumers).

**Internet access patterns** – this is the demand side of internet services that entails the physical and mental readiness of consumers to adopt and utilize internet services among other new technologies.

**Security readiness and concerns** – these are the mechanisms put in place and the measures undertaken to prevent a breach or compromise of the e-commerce platforms and installations. Security is all about actions and controls, and the assurance that the desired actions and controls are in place at any given time including system authentication, confidentiality of personal data and so on.

## **1.10 Organization of the Study**

This study is captured in five chapter segments. Also an appendices section carrying a list of all the relevant tables and figures is attached. Chapter one covers the background of the study presenting what is in knowledge as far as ICTs and electronic commerce is concerned. It also highlights the various contradictory empirical studies that are critical in identifying the knowledge gap. Also included in this chapter is the statement of the problem, the research objectives, questions guiding the study, the justification of undertaking the study as well as its scope.

Chapter two captures the rich literature present in the vast resources of both print and electronic media. Whereas the value of the different theories advanced to identify factors affecting the adoption of electronic commerce cannot be understated, this study has delved into three prominent theories: the Theory of Reasoned Action, the Innovations Diffusion Theory and the Technology Acceptance Model. These models were highly informative of the conceptual framework that comes at the end of this chapter.

Chapter three expounds on the research methodology by identifying the research design, the population of the study and the sampling techniques. This segment also highlights the instruments of research, their validity and reliability and a brief discussion of the operational variables and methods of data analysis closes the chapter.

Chapter four contains the presentation and interpretation of the findings arising from the analysis of data collected using the techniques spelled out in the previous chapter three.

Chapter five being the final submission in this study contains the summary of findings, discussions, the resultant conclusion and recommendations arising from the research. It also contains the suggestions for further studies as well as contributions of this study to the body of knowledge



# **CHAPTER TWO**

## **LITERATURE REVIEW**

### **2.1 Introduction**

This chapter seeks to bring to the forefront the immense research that has been previously undertaken on the acceptance of new technologies. It further highlights the three major theories that have informed the development of a conceptual framework for this study.

### **2.2 Theoretical Understanding of E- Commerce**

Probably, of the many technologies that fall under the ICT umbrella, internet is the one that has had the biggest impact in terms of cost savings and profitability increases in business. It is easy, then, to understand why Internet policy is playing a predominant role in many government agendas as the quest for higher speeds, accessibility and equitable distribution amongst various regions intensifies.

This exploratory market analysis seeks to interrogate the general factors affecting the adoption of e-commerce in Nakuru town, which in turn, denies the youthful entrepreneurs the benefits associated with such technologies. In this context, the adoption of e-commerce shall be taken to connote the apparent diffusion of ICTs and their subsequent utilization for commercial purposes. Likewise, the concept of youth entrepreneurs entails such businesspersons that fall within the age brackets of 15 – 35 years as informed by the definition of youth as per the African Youth Charter, and seconded by UNESCO. These youthful business personnel critical in the creation of employment opportunities to their fellow unemployed youth (those young Kenyans who have attained the working age but cannot secure a job despite their reasonable search for it) and the underemployed youth (those young Kenyans who are engaged in some income generating activities but fail to realize their full potential in labour productivity). It is at this level where a point of tangency is attained between the adoption of electronic commerce and the perceived benefits to these youthful entrepreneurs and the consequent trickle down effects onto

the Kenyan economy key among them being to arrest the rising rate of unemployment and inactivity of the youth in Nakuru town.

According to the World Bank's Kenya Economic Update (2012), Kenya needs to create more jobs to cater for the large number of people entering the work force. It further indicates that Kenya is on the verge of a significant demographic opportunity, as the working-age population is increasing faster than the number of dependents, both young and old. But this opportunity will yield a growth dividend only if Kenya is able to create jobs for the youth who are entering the workforce. That is why on its seventh edition of KEU, the World Bank, focuses on "Kenya at Work". According to the KEU, the nature and composition of jobs in Kenya can be drawn into three broad categories – family farming, non-farm self-employment and wage work.

Despite the relative decline of agriculture, farming is still the dominant way of life with agriculture and related activities forming the bulk of the workforce in Kenya. Non-farm self-employment is principally commerce—largely street vendors and other retail sales—but also includes a substantial number in other services as well as manufacturing whereas wage work is what is commonly referred to as 'white collar' or formal jobs. The bulk of these formal jobs are in the public sector though the private sector seems to be catching up. However, these modern wage jobs are a subset of overall wage employment corresponding to approximately two out of every five wage jobs in Kenya hence competition is fierce. Its analysis shows that the best way for Kenya to increase the number of higher-level wage jobs, and to absorb its growing work force, is to expand the manufacturing and industrial sectors, which are geared towards exports.

In addition to the Economic Survey figures, modern sector wage jobs are increasing by about 50,000 per year, while the working age population by approximately 800,000 per year. In other words, at the current rate of job creation in the modern sector, barely 6 percent of those entering working age are finding modern wage jobs. At this rate of modern sector job creation, competition for such jobs is fierce, and modern sector jobs will remain constant and possibly fall as a share of overall employment unless urgent mitigation measures are introduced – key among them being the use of new technologies and e-commerce.

The Organization for Economic Cooperation Development (OECD, 2000) revealed that the advent of Internet-based electronic commerce offers considerable opportunities for firms to

expand their customer base enter new product markets and rationalize their business. World Tourism Organization (WTO) 2001 also indicated that electronic business offers SMEs the opportunity to undertake their business in new and more cost-effective ways. According to WTO (2001); the Internet is revolutionizing the distribution of information and sales particularly in tourism which is ranked as one of the world's largest industry, with a global GDP of 11% and also the largest on-line industry (Roger, 2002). An increasing proportion of Internet users are buying-on-line and tourism will gain a larger and larger share of the online commerce market.

In Kenya, the development of tourism has also been a success story and the industry has contributed to the growth of Gross Domestic Product (GDP), raised the foreign exchange earning capacity, and has created employment opportunities. There were 1612 (SMEs) registered with the Ministry of Tourism divided into nature trailers, curio entrepreneurs, ecotourism cites, travel agents, tour operators and hotels (Republic of Kenya, Ministry of Tourism, 2010).

To understand ecommerce, one must understand some basic business concepts such as: industry structures, business models, firm and industry value chains, and consumer behavior. They must also comprehend the nature of electronic markets and information goods. Finally, the impact on society must be considered: global e-commerce can have consequences for individuals concerning their intellectual property and privacy rights. Public policy issues such as equal access, equity, content control, and taxation will also need to be addressed. So far, most studies (but mainly from Pearson scholarly articles, 2010) undertaken draw our attention to the unique features of e-commerce technology including:

Ubiquity and global reach; it is available just about everywhere, at all times, and the potential market size is roughly equal to the size of the online population of the world. The ubiquity of e-commerce has created new marketing channels and expanded the size of the overall market. The global reach of e-commerce has changed industry structure by lowering barriers to entry, but at the same time expanding the market.

Universal standards; the technical standards of the Internet, and therefore of conducting e-commerce, are shared by all of the nations in the world. This standardization reduces search costs for consumers and lowers market entry costs. It also enables faster, simpler and more accurate price discovery.

Richness: Information that is complex and content rich can be delivered without sacrificing reach. Whereas traditional transactions can provide more richness in terms of face-to-face service including visual and aural cues, they are limited in terms of how many people can be reached at a single time. E-commerce and other online transactions, which can be global in reach, can provide content that is both complex and rich, overcoming the traditional trade-off between reach and richness. The richness of e-commerce reduces the strength of distribution channels, decreases a firm's reliance on traditional sales forces, and helps a firm develop better post-sales support strategies ([www.wiki.answers.com/Q/...html](http://www.wiki.answers.com/Q/...html)).

Interactivity: E-commerce technologies allow two-way communication between the merchant and the consumer. Firms can use the interactive properties of e-commerce to develop differentiation strategies and customization techniques to reduce the threat from substitutes.

Information density: The total amount and quality of information available to all market participants is vastly increased and is cheaper to deliver. The information density of e-commerce weakens powerful sales channels, shifting some bargaining power to consumers. It also lowers the operational costs for firms associated with obtaining, processing, and distributing information about suppliers and consumers.

Personalization/Customization; E-commerce technologies enable merchants to target their marketing messages to a person's name, interests, and past purchases. They allow a merchant to change the product or service to suit the purchasing behavior and preferences of a consumer. Targeting a market niche is generally a smarter strategy for a community provider than targeting a large market segment because targeting large market segments will only pit a company against bigger and more established competitors. Small sub-segments of larger markets have a greater potential for growth without the intense competitive pressure. Personalization and customization techniques also decrease a firm's reliance on traditional sales forces, helping them to reduce operational costs. Using these techniques, some firms are successful in differentiating themselves from the competition, thereby raising barriers to entry for potential competitors.

Social technology; the interaction of user content generation and social networking technologies extends the marketplace beyond traditional boundaries because it is removed from

the restrictions of geography and time. The ubiquity of e-commerce technologies hence liberates the markets from these limitations to create a new expansion market-space.

## **2.3 Observed Factors Influencing the Adoption of E- Commerce**

Literature on electronic commerce and the factors affecting its adoption, particularly by the small and medium enterprises, is vast. This study, henceforth, deemed it appropriate to be guided by its objectives for a meaningful compilation of relevant empirical literature to be brought to fruition.

### **2.3.1 Influences of perceived benefits on the adoption of e-commerce**

Grandon and Pearson (2004) examined the determinant factors in the adoption of electronic commerce as perceived by the entrepreneurs, top managers and other key decision makers in SMEs. They argue that those who perceive e-commerce as adding strategic value to the firm have a positive attitude toward its adoption.

Reviewed literature shows that the greater the benefits perceived by the entrepreneur, the higher the possibility of ICT adoption. Thus perceived benefits are some of the factors that could affect e-commerce adoption in an enterprise. According to Beckinsale and Ram (2006), perceived benefits of ICT adoption often include focus on improving business efficiency; operational effectiveness and the need to reach out for new markets and opportunities. OECD (2004) found out that ICT offers improved information and knowledge management that includes increased speed and reliability of transactions for both internal and external transactions, real-time information access and immediate customer feedback.

Earlier studies by Lauder and Westall (1997) found that ICTs impacts include cheaper and faster communications, better customer and supplier relations, more effective and efficient marketing, product and service development and better access to information and training. The primary motivation for the small enterprises to adopt new technologies is their anticipated benefits. However, although there are many perceived benefits that have been made available through e-commerce adoption, there are still many small enterprises that are not taking advantage of ICT. Therefore, perceived benefits are taken into consideration as one of the factors

that affects ICT adoption in small enterprises. In the literature on innovation, it is often assumed that an innovation is either adopted or not adopted by individuals or organizations depending on their motivations and beneficial expectations (Iyanda and Ojo, 2008).

In 2003, Crandall, et al. conducted a study for the New Millennium Research Council relying on input-output analysis aimed at assessing the effect of full residential broadband adoption on investment, jobs and the economy at large. Based on the assumption of capital investments required to reach 95% of US households (from 60%), the authors estimated the number of jobs triggered in telecommunications manufacturing and the multiplier effect on household consumption resulting from the increased income. By relying on the multiplier effects calculated by the Bureau of Economic Analysis, the authors concluded that \$63.6 billion of CAPEX would result in 61,000 jobs per annum. In addition, if investments were to be assigned to more advance broadband platforms, the cumulative effect of current and new generation of broadband would result in an increase of 140,000 new jobs per year. By estimating the economic effect of increased consumer spending resulting from universal broadband adoption, the authors concluded that the total number of jobs could reach 1.2 million, broken down between 546,000 jobs triggered by network deployment and 665,000 generated in upstream industries.

Macgregor and Vrazalic (2004) observed that significant benefits are achieved by those SMEs that adopt and use e-commerce. Hutt and Speh (1998) espouse that not all SMEs would benefit from electronic commerce arguing that service industry SMEs would benefit far more than other areas in the SMEs community. Payne (nd) notes that e-commerce will not benefit all economic sectors in the same industry in the same way, suggesting that it is most likely to benefit sectors that have information intensive activities and products that can be used or delivered electronically. Notwithstanding the contrasting viewpoints alluded to above, it is plausible at this stage to explore some of the benefits of e-commerce reported in literature. Poon and Swatman (1997) espouse that the adoption of the Internet by small businesses and its ongoing usage is driven by the perceived benefits and potential business opportunities that are offered to the business. In addition, the technology acceptance model (TAM) (developed by Davis, (as cited by Bolongkikit et al, 2006) postulates that the potential user of e-commerce must not only be convinced of the relevant usefulness/advantages of e-commerce but also have a positive attitude towards it.

From a regional perspective; Dzidonu (2010) fronted that Africa should incorporate the use of ICTs and other new technologies for there to be a speedy realization of its developmental agenda, and in particular, its achievement of the Millennium Development Goals (MDGs) with specific focus on poverty alleviation, healthcare, education, gender equality and environmental sustainability. Some of the areas poised to have a significant impact on the developmental process of African nations from the deployment, adoption and utilization of ICTs include:

Administration and service delivery within the public Sector - the deployment and exploitation of ICTs has the potential to improve administrative efficiency and service delivery by enhancing and refining government responsiveness to citizens , reducing operational and transaction costs of governments administrative activities, service delivery functions and improving productivity within the government machinery and institutions.

Production activities and operations - There is not much, if any, of industrial processes that cannot be programmed by computers and other new technologies. ICTs can and have been used to support the scheduling of a range of production processes, design of products, simulating products under various conditions and models, actual production process using computer-aided robotic systems and the warehousing, distribution and delivery of the products. The successful deployment, adoption and utilization of ICTs in various industrial and production set-ups has contributed immensely to enabling a number of developing nations to gain competitive advantage in ranges of product areas on the global market (UNDESA, 2010).

Agriculture operations to improve productivity – across the globe; new technologies are being set out to modernize agricultural operations, systems and processes and as well improve agriculture productivity and increasing output yields. The quest for food security in Africa has been stepped up by the introduction of new technologies in the production, processing, packaging and marketing of agriculture produce as well as the carrying out of agriculture-oriented research and provision of extension services.

Development of the private sector especially the service sector – The private sector is hailed as the engine of growth in most developing nations and as such the adoption and consequent utilization of ICTs and other new technologies is of paramount importance. The services sector and in particular, the banking and financial services sub-sectors, are to a large

extent ICT-driven in most developed and developing nations. The benefits of such technologies to these services sectors is manifested in their tremendous industry-growth, improved operational efficiencies, increased profit margins and enhanced overall customer satisfaction levels. Also, ICTs have been used to achieve global competitiveness in the areas of trade in a number of countries. The United Nations department of Economic and Social Affairs (UNDESA) reckons that e-commerce is a major growth area forecast to be a multibillion dollar industry is an ICT-driven industry.

Rural Development – in recent times, ICTs have been playing a major role in the extension of services to the rural population such as e-health, digital content educational syllabus, social services and various types of e-government services. The potential impact of ICTs on development based on these programs can be enormous, particularly in terms of improved health, hygiene, nutrition and education.

Governments world-wide have recognized the key role that ICTs can play in facilitating development and bringing government closer to the people. UNCTAD (2001) maintains that if they adopt e-commerce, the developing nations can better position themselves to engage in international trade and further stimulate socio-economic development. A number of countries in both the developed and developing world have been putting in place and implementing e-government and governance strategies and programs targeted at exploiting the potentials of ICTs to facilitate government administration and service delivery as well as the governing process through good governance. The Government of Mauritius (1999) intimated that ICTs can serve as a key resource essential for achieving broad-based development goals, and the Government of Kenya is seen to echo similar sentiments going by its renewed interest in ICTs and the development of key ICT centered strategic plans.

The National ICT policy in Kenya aspires to use ICT to improve the livelihoods of the people of Kenya and possibly optimize its contributions national economy. This policy document envisages an e-enabled and knowledge based society by the year 2015. In recognition of the important role played by e commerce in socio-economic development, the Government of Kenya pledged to: 1.) support the development of e-commerce by enacting the appropriate legislation; 2.) support promotional campaigns to raise public awareness on the potential benefits of use of e-commerce; and 3.) develop an equitable framework for e-commerce through collaborations



with private sector and the international community. This position was further cemented in the developmental blueprint, Vision 2030, which is to lead Kenya into a knowledge-led economy.

The Kenya Vision 2030 (2007) outlines Science, Technology and Innovation (STI) as one of the six foundations of its socio-economic transformation (the other foundations are infrastructure, human resource development, land reforms, and security and public sector reforms). In light of this, an STI strategic plan has been developed, and is regularly reviewed, to ensure that Kenya is on the right path realizing wealth creation, improved social welfare and international competitiveness. These STIs strategies in Kenya include: 1.) strengthening technical capabilities via improvement of existing infrastructure, advanced personnel training and enhanced collaboration with other stakeholders to improve her overall STI capacity; 2.) improving the national pool of high skills and talents through training that is relevant to the needs of the economy. Here, post graduate training is deemed vital whereas the transition rates from post primary to tertiary level education will need to be strengthened further; 3.) Intensification of innovation priority sectors particularly by increasing funding into basic and applied research by institutions of higher learning. Also, government support is to be extended to other research and development initiatives by industry players; and 4.) Creating and deepening STI awareness to stir public interest and participation.

### **2.3.2 Influences of internet service diffusion on the adoption of e-commerce**

There are various theories in literature and empirical findings that have been advanced toward the intended adoption and consequent use of new technologies including e-commerce. In this study, three predominant theories were looked into as they were highly informative on the development of the conceptual framework: the Theory of Reasoned Action (TRA), the Innovations Diffusion Theory (IDT) and Technology Acceptance Model (TAM).

#### **2.3.2.1 The Theory of Reasoned Action (TRA) and Planned Behavior (TPB)**

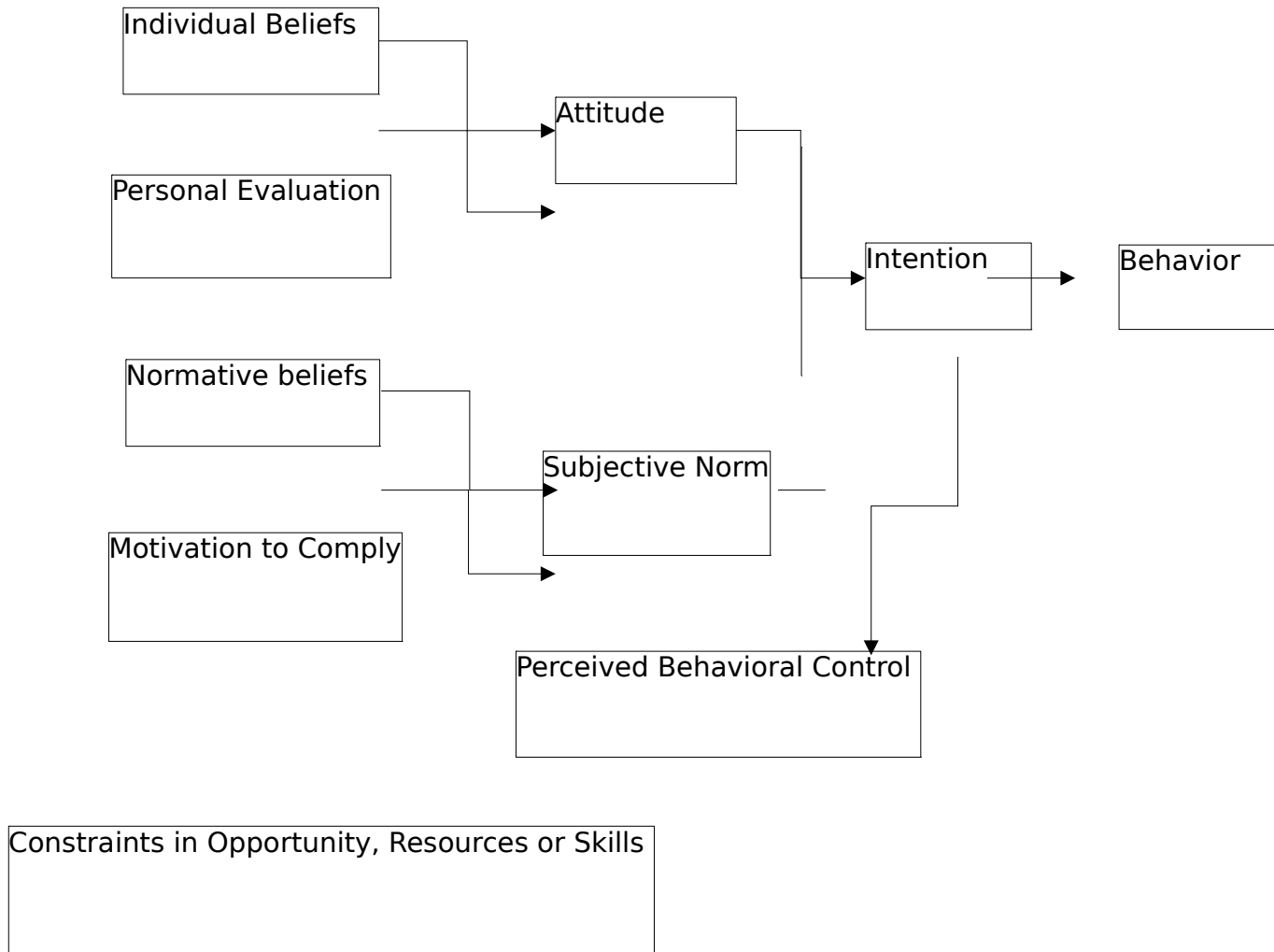
The intended advancement of TRA was informed by the need of psychologists to the study of exercise behavior among different segments of the population. Different theoretical frameworks matter, were developed throughout the early 1980s to the late 1990s but two stood out: the theory of reasoned action and the theory of planned behavior. These two theories

captured the attention of researchers on account of their ease of incorporation into other fields of knowledge outside of Psychology.

According to the proponents of TRA model (Fishbein and Ajzen, 1980), the primary goal was to understand and consequently predict social behavior. The TRA model indicates that the proximate determinations of the intent to adopt a given behavior are the individual's personal attitude toward achieving the behavior in question, and the influence of social factors toward the performance of said behavior (Figure 1). The attitudinal component is a function of beliefs concerning the perceived consequences of certain actions (or choices) and a personal evaluation of each of these consequences. On the other hand, the normative component is determined by the perceived expectations of salient referent individuals and by the individual's motivation to comply with the expectations of these 'special' individuals. The fundamental principles raised in the TRA model are critical in the evaluation of factors affecting the adoption of e-commerce among youth entrepreneurs as they lay the foundation upon which to interrogate the individual's attitude toward e-commerce and evaluation of its perceived benefits.

Ajzen (1985) went a step further and developed the Theory of Planned Behavior (TPB) which was an extension of TRA model. By introducing a perceived behavioral control component, he (Ajzen) appreciated that the TRA model was limited in assuming that all behavior is volitional. However, if the adoption of a behavior requires opportunities, resources or skills that are presently lacking then the individual has complete lack of control. To take into account such constraints, whether real or perceived, the concept of perceived behavioral control is introduced as a third element into the original Fishbein and Ajzen's TRA model. In concurrence, this study shall examine both the intention and perceived control of an individual over a given behavior (adoption of electronic commerce) if the individual has limited control over that behavior.

Figure 1: Schematic representation of the Fishbein and Ajzen TRA and TPB Models



Source: *Medical Science and sports exercise* (1994), 26 (11), 1391 - 1394.

### 2.3.2.2 The Innovation Diffusion Theory

The Innovation Diffusion Theory (IDT) was fronted by Rogers (1983), and is arguably the most popular model in investigating the behavior of users in adopting new technological innovations. The IDT model employs five constructs: relative advantage, compatibility, complexity, trial and observable of technology in determining its adoption or rejection by the user.

Relative advantage - This is the degree to which an innovation is perceived as being superior to its predecessor in terms of economic profitability, low initial cost, a decrease in discomfort, savings in time and effort, and the immediacy of the reward. Gemino, Mackay and Reich (2006) highlighted that relative advantage is expressed by perceived benefits. Aghaunor and Fotoh (2006) elaborated that the perceived benefits by managers include cost savings, income generation, and potential opportunities in new markets, marketing and publicity. Gemino et al. (2006) conveyed that research has found that relative advantage is the primary reason for encouraging ICT growth and a positive relationship has been identified between perceived advantages and adoption.

Compatibility - This is the degree, to which an innovation is perceived as being compatible with existing beliefs, experience and needs of potential adopters. A faster rate of adoption occurs when an adopter perceives an innovation as meeting the needs of the client. Alam, Khatibi, Ahmad and Ismail (2007) stated that an innovation is more likely to be adopted if it is compatible with individual job responsibility and value system. Alam et al. (2007) affirmed that organizations should determine the needs of their customers and then recommend innovations that fulfill those needs. It is therefore anticipated that as needs are met the adoption will occur.

Complexity - This is the degree to which an innovation is perceived as being relatively difficult to understand and use. The perceived complexity of an innovation is negatively related to its rate of adoption. Alam et al. (2007) reported that previous studies on the adoption of innovations indicated that the adoption of complex technologies require organizational personnel to possess sufficient technical competencies.

Trial - An innovation can be used on a trial basis before confirmation of adoption occurs. Rogers' (1995) studies found that "the trial of an innovation, as perceived by members of a social system, is positively related to its rate of adoption. Alam et al. (2007) suggested that trial has become an important feature of innovation because it provides a means for prospective adopters to reduce their uncertainties regarding unfamiliar technologies or products.

Observable - This is the extent to which the potential adopter perceives that the results of an innovation are visible to others. Displaying an innovation's superiority in a tangible form will increase the adoption rate.

### **2.3.3 Influences of internet access patterns on the adoption of e-commerce**

Lack of access to infrastructural networks is reported as among the barriers to ICT adoption and usage in most developing countries (Migiro and Ocholla, 2005). There is growing evidence that access to ICTs has a direct impact on improving the standards of living and quality of life of the general populace. The indirect impact on poverty alleviation, through growth and productivity, has long been documented.

Engsbo, Saarinen and Scupola (2001) identified five innovation adoption triggers that can result in the initiation of the adoption process of electronic commerce in SMEs:

Strategic opportunity; this is what has been argued in previous literature as the perceived benefits including the improvement of business performance in the market place either by lowering operational costs, increasing efficiencies or enhancing competitiveness. The overall effect of this is to give the business enterprise an edge or relative advantage over other enterprises.

Strategic necessity; this is realized by the developers of the technology pushing for the uptake hence maximizing the flow of diffusion and enhancing enterprises readiness to assimilate similar technologies. The developers may offer installation and compatibility tests to promote the overall outlook of e commerce platforms

Forced decision; the use of electronic commerce maybe required in order to conduct business at the organizational/ enterprise level or the regulatory authorities may institute mandatory adoption of certain e commerce platforms in order to harmonize certain aspects of governance mostly in revenue collection

Reactive adoption; the electronic commerce technologies can be deemed as an immediate solution to certain problems for the SMEs and other youth ran enterprises particularly when it comes to efficient business communication and consumer feedbacks. This in essence then dictates the enterprises' access patterns to e-commerce platforms

Just-by-chance; SMEs and the youth in general may without any rational process adopt the information communication technologies (e.g. government intervention or pilot research projects) Scupola (2002).

Of the adoption triggers identified by Engsbo et al. (2001), just-by-chance was identified as the main factor for the take-up of electronic commerce by SMEs. Scupola (2002) identified that in the case of the family driven business the adoption of electronic commerce is completely casual.

#### **2.3.4 Influences of security readiness towards the adoption of e-commerce**

A number of studies have brought to the fore the importance of a positive and encouraging attitude towards change in the enterprise. Rothwell (1992) stressed that innovation was fundamentally a "people's process" and simply attempting to substitute formal management techniques for managerial talent and entrepreneurial flair was neither a rational nor sustainable option. Moss (1988) was of the opinion the organisation should support innovation, not only by affording resources like time and money, but also by developing a culture that is enabling and responsive towards change. A positive attitude towards change leads to an internal working climate that is conducive to innovations (Damanpour, 1991), and enhances the willingness and readiness to take on external ideas such as e-commerce (Rothwell, 1992).

Ihlstrum et al (2003) classified the barriers into two generic types: internal and external to the organization. External issues are outside the sphere of influence of SMEs while internal barriers are pertinent to the organization and can be further subdivided into resources and systems barriers. Similarly, the external barriers can be subdivided into supply, demand and environmental barriers. Despite the multiplicity of e-commerce barriers as well as the various categories reported in literature, it is plausible to note that these barriers have mostly remained the same (Ihlstrum et al, 2003). Notwithstanding the aforementioned arguments, these barriers are summarized as: 1.) High costs of e-commerce implementation 2.) E-commerce is too

complex to implement and lack of time to implement 3.) Organizational resistance to change, lack of senior management support and (or) enthusiasm. Also, there is the inadequacy of relevant IT and other technical skills amongst the employees, Lack of suitability of e-commerce for products and services offered by small businesses, Lack of awareness of ecommerce benefits and the Security concerns and lack of trust in the new Information Communication Technologies.

Certainly, Lawson et al.'s (2003) findings indicated that some of the major inhibitors to the adoption of e-commerce were perceived security and privacy of transactions and lack of IT expertise of staff. The reliability or riskiness, of a particular venture, in our case the adoption of e-commerce; can thus be conceptualized as the amount of uncertainty surrounding the outcome of an innovations

In reviewing the slow uptake of e-commerce by SMEs it could be said that generally there is a lack of real understanding as to what e-commerce is, what it can do and how it can benefit an organization. Furthermore, the reluctance by SMEs to change and embrace the possibilities that e-commerce offers can be attributed to among other things to their perennial focus on costs rather than benefits, lack of clear understanding of value chain issues, lack of enterprise-strategic directions and general concerns on overall security of the system.

## **2.4 Consolidation and Conceptualization of the Literature Reviewed**

The literature so far reviewed embodies three key aspects pertinent to this study as would be guided by its objectives; the perceptions aspect, the attitudinal aspect and infrastructural aspect.

### **2.4.1 The perceptions aspects on adoption of e- commerce**

The perceptions aspect expounds on the anticipated gains and (or) losses associated with the adoption and consequent utilization of e-commerce and other new technologies. These anticipated gains or losses would differ from one industry to another and from one enterprise to the other – some would want cheaper and faster communication channels, others; expansion of customer base and yet still, others would prefer simplification of work routines. Overall, the aggregate perceivable benefits should capture the aspects of business efficiencies, operational efficiencies and the need to realize new markets and opportunities. Perceived benefits are

understood to be the primary motivation to entrepreneurs in the quest for adoption of e-commerce.

#### **2.4.2 The attitudinal aspects on adoption of e-commerce**

The attitudinal aspect incorporates the social behavior of individuals towards new technologies. This construct seeks to establish how comfortable (at ease) the entrepreneurs are with the adoption of ICTs and e-commerce. Of utmost importance to the entrepreneurs are the security and privacy concerns, protection of intellectual property and public policy on equal access, equity and content control. The attitude of youthful entrepreneurs is also informed by their surrounding and the constraints therein – the perceptions towards ICTs by persons viewed as ‘significant’ by the entrepreneurs has an irrefutable effect on their own perceptions toward the same technologies particularly in family-run enterprises.

The main constraints that may affect the entrepreneurs’ attitudes toward ICTs are the lack of technical skills and lack of other resources. The time lapse between the availability of new technologies and the adoption and utilization of the same has been partly attributed to these constraints. In addition, the entrepreneurs may desire to run the new technologies on a trial basis before confirmation of full adoption – the ease or unease of pretesting tells on the time lag before adoption of e-commerce applications.

#### **2.4.3 The infrastructural aspects on adoption of e-commerce**

The infrastructural aspect of new technologies cannot be overemphasized as it literally lays the foundation upon which such electronic commerce applications are realized. This aspect can be further dissected into two components – the demand side (e-commerce access patterns) and supply side (internet service diffusion).

The e-commerce access patterns are driven by investments in advanced broadband (high speed internet service quality) connectivity, the skill level and other technical competencies of the entrepreneur and staff and the general ease of implementation bearing in mind that e-commerce is readily implementable in sectors that have information intense activities like tourism and financial services.

The internet services diffusion component seeks to highlight the observable internet use (pervasiveness) in terms of facilitative physical attributes like mobile phones, PCs, Wi-Fi



terminus, fiber cabling etc. the complexity of these systems determines the organizational readiness of enterprises as the two factors are inversely related. Also, these systems need to be compatible to the enterprise needs whereas enterprise needs are informed by their clients' needs.

## **2.5 Conceptual Framework**

The design of the conceptual framework outlines the variables as dependent, independent or moderating. In light of Sekaran (1992) postulation, a variable is anything that can take on differing or varying values. The values may differ at various times for the same object or person, or the values can differ at the same time for different objects or persons.

The dependent variable is the variable of primary interest to the researcher as the main task is to explain or predict the variability of the said variable. In the words of Sekaran (1992, pg. 65), the dependent variable is the main variable that lends itself as a viable issue for investigation. In this case, the adoption and usage of electronic commerce by youthful entrepreneurs is the dependent variable.

The independent variable is the presumed cause in an experimental study. The values of the independent variable are under experimenter control. In this study, there are four independent variables (Perceived benefits, Internet service diffusion, Access patterns and Security concerns) and each has its various indicators as would be indicated later.

A moderator variable is related to the direction or strength of the relationship between the independent and dependent variables (Baron and Kenny, 1986). A moderator variable may be qualitative (such as student gender, type of community organization, or type of college) or quantitative (e.g., number of clinic visits). In addition, it may be related to the strength or the direction of a correlation, or it may interact with the independent variable and the dependent variable. In either case, a moderator variable describes an "it depends" relationship (e.g., the strength of the correlation between two variables depends on the past volunteer experience of the student). Generally, moderator variables are variables that exist prior to data collection, as opposed to mediating variables that are assumed to occur during the phenomena being studied.

Independent variables

Moderating Variables

Dependent Variables

**E-commerce Access Patterns:** Network  
Dependent Variable

**Security and Privacy Concerns:** System's Integrity, repudiation, authenticity and confidentiality  
Ease of pre-

Figure 2.1: Conceptual framework

## 2.6 Overview of the Knowledge Gap

What can we conclude from the literature reviewed above? What is the level of certainty for each of those conclusions? In order to answer these questions, it is important to appreciate that a recollection of all the literature reviewed strongly substantiates the good of ICTs and electronic commerce that cannot be wished away in today's world of business. It is conclusive to say that from the literature review, bearing in mind the perceived gross benefits and gross costs, there are net benefits realized from the adoption and usage of e-commerce by small and medium enterprises that are by far and large run by the youthful entrepreneurs.

It is however, surprising and a matter of great concern on the reluctant and even sluggish pace that the SMEs have adopted toward the adoption of electronic commerce platforms. Bearing in mind the fundamental principles in Theory of Consumer Behavior, the key assumption is that the consumer is rational and seeks to maximize utilities (benefits realized from the consumption of a given commodity). On the other end of the continuum, the Theory of the Firm indicates that firms seek to maximize benefits and minimize costs. In the wake of these fundamental construes, SMEs particularly in developing nations like Kenya seem to be defying the odds and acting in a manner that would in Economic theory be termed as 'irrational'.

It is in the purview of these inconsistencies that the basis for undertaking this study was established. The gap in knowledge was a lack of comprehension of the real issues that curtail enhanced adoption of electronic commerce in developing nations like Kenya. To furnish such knowledge, this study poses the question: What are the factors affecting the adoption of e-commerce among youth entrepreneurs in Nakuru town, Kenya?

# CHAPTER THREE

## RESEARCH METHODOLOGY

### 3.1 Introduction

This chapter identifies the research design of the study. It further highlights the target population, sampling procedures and the methods of data collection. Also included are the measures undertaken to ensure the validity of data collected, and its reliability in this study. A summarized table at the end of the chapter is provided to highlight the operational variables and show how they are scaled.

### 3.2 Research Design

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

In view of the lack of sufficient research in this area of study, particularly in the context of a developing country like Kenya, an exploratory research design was considered the most suitable approach. The study used survey research design as it was helpful in indicating trends in attitudes and behaviors and enable generalization of the findings of the research study to be done (Kuterand Yilmaz, 2001). This design was considered appropriate for this study because it saves time, expenses and the amount of quality information yielded is valid, while interviewer bias is reduced because participants complete identically worded self-reported measures (Adèr, Mellenbergh and Hand, 2008). The type of data to be collected will be majorly parametric and ordinal as it is predictable and comparative in nature

The techniques of data collection will vary from *behavior observation checklist* (a list of behaviors or actions among participants being observed such that a tally is kept for each behavior or action observed.), *knowledge tests* (information about what a person already knows or has

learned) and *self-rating* (a method used by participants to rank their own performance, knowledge, or attitudes.)

### **3.3 Target Population**

Mugenda and Mugenda (2003) defines a population as a complete set of individuals, cases or objects with some common observable characteristics whilst Dencombe (2007) demarcates a population frame as “an objective list of the population from which the researcher can make his or her selection.” A population frame must thus contain an up-to-date list of all those that comprise the target population. In view of that, the population of this study consisted predominantly of the youthful entrepreneurs in Nakuru town.

The target population was the SMEs located in Nakuru town irrespective of whether they had adopted e-commerce or not. The SMEs were selected using a purposive sampling technique, while the interviews involved talking to key decision makers (SME owners, managers and/or employees who had a role in the adoption and implementation of e-commerce).

### **3.4 Sampling Techniques**

This study incorporated a purposive sampling procedure to select a sample that represents the intended population. A purposive sampling procedure involves the hand-picking of subjects on the basis of certain specific characteristics (youths, entrepreneurs, Nakuru town residents).

In recognition that purposive samples are not easily defensible as being representative of populations due to the potential subjectivity of researcher, the study saw it fit to entertain a snowball sampling procedure where initial subjects with desired traits or characteristics provide names of further appropriate subjects. This provides for a reasonable counterbalance on the potential subjectivity of the researcher from the earlier sampling technique.

### 3.4.1 Determining the Sample Size

According to Watson (2001), an appropriate sample size is based on a number of accuracy factors brought about in a five step process: 1.) Determine goals, attributes or concepts to be measured and estimate the size of population; 2.) Determine desired Precision of results as would be informed by the accepted margin of error. In this study, a  $\pm 3\%$  would be as the accepted margin of error; 3.) Determine the confidence level though a 95% level is the standard for most social sciences. This level corresponds to a value of 1.96 in a two tailed z - score tables of standard normal probabilities. This two tailed test allows for the possibility that a difference may occur in either direction; 4.) Estimate the degree of variability in terms of how the attribute or concept being measured is distributed in the population. Mobile telephony penetration rates provide an insight into the degree of distribution of ICTs as it accommodates the most youth at about 86%; and finally 5.) Estimate the Response Rate. This is critical in the readjustment of the base sample size to accommodate the potential non-responses. The response rate would be informed by previous studies undertaken within Nakuru County by T. Oyugi (2012) and L. Muchiri (2010)

An equation for determining the final sample size therefore becomes:

$$n = \frac{\left( \frac{P(1-P)}{\frac{A^2}{Z^2} + \frac{P(1-P)}{N}} \right)}{R}$$

Where n = sample size

N = size of population

P = variance in population, pegged at 85% - 15%

A = desired precision, pegged at  $\pm 3\%$  margin of error

$Z^2$  = confidence level, pegged at 95% the value is 1.96

R = response rate, pegged at 90%

$$n = \frac{\frac{0.15(1 - 0.15)}{0.03^2} + \frac{0.15(1 - 0.15)}{500}}{0.9} = 198$$

### **3.5 Instruments of Data Collection**

Chaleunvong (2009) opined that data-collection techniques allow us to systematically collect information about the subjects of study (people, objects, phenomena) and about the settings in which they occur. In the conduct of this study, two major instruments of data collection were used: written questionnaires and interviews.

#### **3.5.1 Questionnaires**

A written questionnaire (also referred to as self-administered questionnaire) is a data collection tool in which written questions are presented that are to be answered by the respondents in written form. These written questionnaires shall be administered to respondents via hand-delivery and collect them later.

Questionnaires, incorporating both open-ended and closed-ended questions items were used to gather the necessary data to conduct this study. According to Cooper and Emory (2008), the questionnaire is conveniently used because it is cheaper and quicker to administer, it is above researcher's effect and variability, and is highly convenient for the respondents as they could fill them during free times or when workloads are manageable.

Also incorporated in the data collection instruments is a Likert scales to measure perception, attitude, values and awareness.

#### **3.5.2 Interviews**

An interview is a data-collection technique that involves oral questioning of respondents, either individually or as a group (Chaleunvong, 2009). While the questionnaires were largely administered to the small scale enterprise entrepreneurs, in-depth interviews was preferred for the medium scale enterprise entrepreneurs as they are deemed more knowledgeable and

experienced. Responses to the questions posed during the interview shall be tape-recorded, as well crossed from a checklist.

### **3.6 Validity and Reliability**

A quantitative researcher attempts to delimit phenomena into measurable or common categories that can be applied to all of the subjects in the wider population (Winter, 2000). In these attempts, Patton (2001) postulates that the researcher's methods involve the "use of standardized measures so that the varying perspectives and experiences of people can be fit into a limited number of predetermined response categories to which numbers are assigned". Thus, a quantitative researcher needs to construct an instrument to be administered in a standardized manner according to predetermined procedures. But the question remains as to whether the measuring instruments measures what they are supposed to measure in order to ensure the replicability of the results. This brings into focus the pertinent need to devise a test that checks the validity and reliability of the instruments of data collection.

#### **3.6.1 Validity of the instruments**

Validity of the findings is defined as to the extent to which data collection methods accurately measure what is intended to measure (Saunders et. al., 2003). There are two major forms: external and internal validity. There are a number of steps taken to ensure the validity of the study:

Data was collected from reliable sources, and from respondents who have at one time or more interacted with the ICTs and electronic commerce applications at the commercial/ transactional level in business.

Questionnaires were pre-tested by six youths who are successfully running small and Medium Enterprises within Nakuru town. The six were also taken through the interview schedule to reliably gauge the relevance of the questions there-in in capturing the information pertinent to this study. The pre testing mechanisms and peer reviews of the questionnaires and interview schedule allowed for the refinement of said instruments before use in the actual study. Data was collected throughout a period of four weeks; a short frame is deemed critical during that period



of data collection as it ensures the reduction of chance of occurrence of a major event that would negatively impact the conduct of this research study.

### **3.6.2 Reliability of the instruments**

Joppe (2000) defines reliability as the extent to which results are consistent over time and an accurate representation of the total population under study. If the results of a study can be reproduced under a similar methodology, then the research instrument is considered to be reliable. This study espouses the test retest reliability approach as a measure of consistency in the responses of the respondents against the responses of the sample subjects in the pilot study. The pilot study to pretest the questionnaires and interview schedules was undertaken a fortnight prior to the actual field study. With the short time lapse between the two occasions, and assuming a lack thereof of any substantial changes in the construct of the instruments of data collection, we should be able to obtain a considerably higher correlation - this correlation is the test-retest estimate of reliability.

From the findings, the Cronbach's Alpha was found to be .714 which is higher than the acceptable value of .70 that is used by scientist for social studies. Also, from Cronbach's Alpha analysis, it was evident that the value reduces when either of the survey items is deleted. This was an indication of the reliability of the items to measure the desired attribute.

### **3.7 Data Analysis Techniques**

Quantitative data was edited to eliminate inconsistencies, summarized and coded for easy classification in order to facilitate tabulation and interpretation. Descriptive statistics was used in describing the sample data in such a way as to portray the typical respondent and to reveal the general response pattern. The results of the analysis was presented and interpreted by use of frequency tables, percentages and other measures of central tendency (mean, mode, standard deviations etc.).

In this study, a multiple regression analysis was used to determine how likely it is that the results based on a sample or samples are the same results as would have been obtained from the entire population. A multiple regression is basically a study involving more than one predictor

(independent variables) that are most probably correlated to each other as well as the criterion (dependent variable). At each step, it will be determined which variable adds the most to the prediction and by how much it actually adds.

These statistics was generated with the aid of computer software, Statistical Package for Social Sciences (SPSS) which offers extensive data handling capability and numerous statistical analysis routines that can analyze small to very large data statistics.

### **3.8 Ethical consideration**

Ethical measures are principles the researcher should bind (him) herself in conducting the research before data collection (Macmillan and Schumacher 1993). In this study, initial approval was secured from the University of Nairobi. A research permit was sought from the NSCT. The respondents were assured that the information given will be for the purpose of this research and will be treated with utmost confidentiality.

### **3.9 Operational Definition of Variables**

The collection of responses/ observations constitutes data. These data mostly take two basic kinds of measurements. Nominal data - This simply is the naming of an object and consequently assigning it to a given class. This is appropriate where different categories are mutually exclusive and the measurements are exhaustive. Ordinal data – Here, objects are measured as being either greater than or less than, higher or lower than a comparative object.

However, where the absolute value of a variable is necessary, higher levels of data measurements was incorporated. Mugenda and Mugenda (2003) indicated that ratio scale is the most precise method of measuring variables as it generally has the merits of all the other scales (nominal, ordinal and interval). It also has an absolute zero point which enables a complete mathematical/ statistical manipulation of data. The interval scale is appropriate for ranked data where the interval between two successive ranks is of statistical significance. This scale is however mathematically limited to addition and subtraction only due to its lack of an absolute value zero.

It is also important to keep the types of data in mind, as certain types of analyses are appropriate for one level but not for another. For example, by classifying individuals as male or

female we assign each individual to a class and thus have nominal data (Dwight Moore, 2000). Data is said to be discrete (or meristic) when the measurements or observations can only take on integral values. On the other hand, data can be continuous where the measurements could conceivably take on any value. Some data, particularly scores on a likert scale, may seem discreet but it is actually continuous.

Table 3.1: Conceptualization of operating variables

Objectives	Independent Variables	Indicators	Measure	Scale	Tools for data collection
1. Examine the importance of perceived benefits on the adoption and usage of e-commerce.	Perceived benefits	Increased productivity	Increase in total sales Increase in profits	Ratio	Interview Questionnaires
		Simplification of work routines	Time taken to complete ordinary tasks	Nominal	Interview
		Improved consumer satisfaction	Positivism in consumer responses	Interval	Interview
		Reduction in operational costs	Decreases in operational expenses	Interval	Interview
		Development of new business opportunities	Diversification into other lines of production Development of new products	Ratio	Interview Questionnaires
2. Analyze the influence of internet service diffusion among youth entrepreneurs	Internet Service Diffusion	Pervasiveness of usage of internet	Access to internet services via different gadgets	Nominal	Interview Questionnaires
		Organizational readiness to adopt e commerce	Entrepreneur and staff' IT skills Development of ICT related infrastructures	Nominal	Interview Questionnaires

		Compatibility with business needs	Fluidness of e-commerce applications to enterprises' needs	Ordinal	Interview Questionnaires
3. Examine the e-commerce access patterns amongst the youth	E-commerce Access Patterns	network architecture, bandwidth and quality of service	Presence of ICT oriented infrastructures	Ordinal	Checklist
		awareness and usage level of e-commerce applications	Entrepreneurs' consciousness of various e-commerce platforms	Nominal	Interview Questionnaires
		Ease of implementation		Nominal	Interview Questionnaires
		Levels of IT & other technical skills	IT and other technical skills of employer, and the employees	Interval	Interview Questionnaires

Objectives	Measure	indicators	Measures	Scale	Tools for data collection
4. Identify the security readiness of youth entrepreneurs in the adoption of electronic commerce	Security and Privacy Concerns	System's Integrity, repudiation, authenticity and confidentiality	Ease of third parties engaging in fraudulent activities in the system	Ratio	Interview Questionnaires
		Ease of pre-testing		Nominal	Interview Questionnaires
		Attitude/ privacy concerns toward e-commerce	Entrepreneurs' level of comfort of use of e-commerce applications	Ordinal	Interview Questionnaires

Dependent Variable

What are the factors affecting the adoption of e-commerce?	Adoption of E-commerce by Youth Entrepreneurs in Nakuru Town	Level of electronic interaction between enterprises and consumers/ suppliers	Aspects of e commerce incorporated into small enterprises	Interview Questionnaires
		No. of e commerce applications used by enterprises		Interview Questionnaires
		Observable effects of use of e commerce		Interview Questionnaires

# **CHAPTER FOUR**

## **DATA ANALYSIS, PRESENTATION AND INTERPRETATION**

### **4.1 Introduction**

This chapter presents the results of the findings based on the entire data collected. The data analysis and its presentation seek to conclusively address the research questions: 1.) what are the perceived benefits influencing the adoption of e-commerce among the youth entrepreneur in Nakuru Town? 2.) What the state of internet service diffusion that influence the adoption of e-commerce among the youth entrepreneurs in Nakuru town? 3.) To what extent has the internet access patterns influenced the adoption of e-commerce among the youth entrepreneurs in Nakuru town? 4.) To what extent has security readiness influenced the adoption of e-commerce among youth entrepreneurs in Nakuru town?

### **4.2 Questionnaire return rate**

The study was done in five wards in Nakuru East constituency in Nakuru town. Structured questionnaires were used to collect data which was in the form of qualitative and quantitative data. A total of 180 respondents were selected and completely filled the survey instruments representing a response rate of about 91%. The questionnaire was divided into six sections which are Background information; Enterprise characteristics; Internet access patterns; Perceived benefits; Internet service diffusion and Security readiness/privacy. Participants in the studies were required to fill questions in all the sections though there were related questions with rooting. Statistical Package for Social Scientists (SPSS) version 20 was used to analyze data while data entry and coding was done in MS-Excel where data verification and cleaning was also done. Data analysis was done in relation to the objectives of the study.

### 4.3 Background information of Respondents

This section briefly discusses findings on the respondents' gender, age, marital status, level of education. These characteristics were relevant to the study as they would inform on some general traits of youthful entrepreneurs in Nakuru town that cannot be captured solely from one respondent.

#### 4.3.1 Distribution of respondents by gender

The study sought to establish the gender composition of young entrepreneurs in Nakuru town. The aspect of gender in business is important as there have been numerous studies in psychology to suggest men are more risk takers than women. In the science post of the daily telegraph (accessed on Friday, July 26, 2013), it presumed that men are twice more likely to take risks than women. The table 4.1 summarizes the findings on gender

Table 4.1: Gender

Gender	Frequency	Percent
1 Male	116	64.4
2 Female	64	35.6
Total	180	100.0

The results from the findings indicated that out of a possible 180 respondents, 116 or 64% of them were male, while female entrepreneurs made up the remaining 36%.

#### 4.3.2 Distribution by age

The age component is important in almost all aspects of running a business as it informs on the entrepreneur's management style and expertise, willingness to take risks and even their levels of tech savvy-ness. The table 4.2 captures the age composition of entrepreneurs in Nakuru town.

Table 4.2: Age of entrepreneurs

Age of entrepreneurs	Frequency	Percent
1 15-20	3	1.7
2 21-25	58	32.2
3 26-30	73	40.6
4 31-35	46	25.6
Total	180	100.0

Most of the respondents (72.8%) were in the age bracket of 21-25 years (32.2%) and 26-30 years (40.6%). About a quarter (25.6%) fell in the age group of 31-35 years and only 3 (1.7%) belonged to the age group of 15-20. The upper age limit was set at 35 years and a lower limit of 15 years based on the definition of youth.

#### **4.3.3 Distribution by highest level of education**

The respondents were asked to indicate the highest level of education they had attained by the end of June, 2013. Their responses were as shown in Table 4.3

Table 4.3: Highest level of education

Highest level of education	Frequency	Percent
1 Primary	1	.6
2 Secondary	48	26.7
3 College	99	55.0
4 University	32	17.8
Total	180	100.0

The study found that majority of the respondents (72.7%) had attained tertiary education with majority of the respondents having attended colleges. A good number of the respondents had attained only secondary with one respondent having been to primary school only .



#### 4.3.4 Distribution by area of operation

In order to shed light on the most preferred areas of operations as far as small business are concerned, the study undertook to indicate the area of residence of the respondent's enterprise. A summary of these areas of operation of the enterprises also known as residence was done and results presented in table 4.4 .

Table 4.4: Area of operation

Area of operation	Frequency	Percent
1 Biashara	81	45.1
2 Kivumbini	18	10.0
3 Flamingo	26	14.4
4 Menengai	24	13.3
5 Nakuru East	31	17.2
Total	180	100.0

From the findings, a majority of the enterprises (45%) were located in Biashara ward in order to take full advantage of the bustling commercial hub that is Nakuru town centre, whereas Menengai (13.3%) and Kivumbini wards (10%) registered the smallest number of business set-ups as they were largely considered to be residential areas.

#### 4.3.5 Distribution by legal status

The study sought to establish in the early stages of the interviewing whether the respondents met the criterion set to undertake the study. This not only required one to be within the age brackets of 15 – 35 years of age, but also to be running duly registered business entities. The table 4.5 summarizes the legal status of respondent's business enterprises

Table 4.5: Legal status of enterprise

Legal status of enterprise	Frequency	Percent
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1 Sole proprietorship	152	84.4
2 Partnership	22	12.2
3 Limited liability	6	3.3
Total	180	100.0

The study established that majority of the businesses (over 80%) are sole proprietorship while less than 20% are partnerships with limited liability account for less than 10% of the surveyed enterprises.

#### 4.3.6 Distribution by sector break down

From the literature review, it was established that some sectors and industries were well placed to benefit more from adoption of e-commerce than others. The study, thus thought it prudent to examine the sectoral breakdown of SMEs in Nakuru town. The results were as shown in table 4.6

Table 4.6: Sector breakdown of enterprise

Sector breakdown of enterprise	Frequency	Percent
1 Technologies	13	7.2
2 Services	73	40.6
3 Wholesale	13	7.2
4 Manufacturing	1	.6
5 Retail	79	43.9
6 Other	1	.6
Total	180	100.0

The findings indicated that Retail and Service are the biggest sectors amongst the respondents as they account for more than 40% each and technologies and wholesale accounting for less than 10% each. Manufacturing had a very small percentage, this is an indicator that youth are

reluctant to engage in manufacturing and they prefer retail and services maybe due to financial constraints.

#### **4.3.7 Distribution by entrepreneurial years**

The respondent were required to indicate the number of years they have been in the enterprise. This was essential to know the survival rate of the number enterprise.

Table 4.7: Entrepreneurs by the number of years

Entrepreneurs by the number of years	Frequency	Percent
less than 3years	79	43.9
3-6 years	70	38.9
7-9 years	17	9.4
10-12 years	10	5.6
more than 12 years	4	2.2
Total	180	100.0

The study showed that the number of entrepreneurs reduces as the number of years entrepreneurship increases. The biggest difference is seen between 3-6 years and 7-9 years where the rate drops from 38.9% to 9.4%, this is a drop of about thirty percentage points. Enterprise with more than 12 years of operation were only 4(2.2%).

#### **4.3.8 Distribution by number of entrepreneur's employees**

The number of employees an entrepreneur has under his/ her management is critical as it informs on the potential adopters of e-commerce. Also, the higher the number of employees the more settled in the entrepreneur appears, and greater the chances of having an innovator amongst them and so on. The study used a survey item on the number of employees to capture, and present the results as shown in table 4.8

Table 4.8: Number of entrepreneur's employees

Number of employees	Frequency	Percent
1 less than 5 employees	160	88.9
2 6-10 employees	15	8.3
3 11-15 employees	3	1.7
4 16-20 employees	1	.6
5 more than 20 employees	1	.6
Total	180	100.0

The survey revealed that 160 or 88.9% of the enterprises surveyed employed less than 5 employees with the remaining percentage shared diminishingly as the numbers of employees increased down to only 1 enterprise or 0.6% employing more than twenty.

#### **4.4 Internet Access at the Workplace**

It is widely presumed that those entrepreneurs who have access to internet services at the work-place stand a much better chance of adopting e-commerce. This study sought to examine the influence of internet access patterns on the adoption e-commerce among the youth entrepreneurs in Nakuru Town

##### **4.4.1 Internet Access**

The study sought to establish the number of respondents who had direct access to internet services at their business premises. This was premised on the statement that entrepreneurs who had access to internet services at their workstations were better poised to adopt new technologies due to their higher levels of ICTs' awareness and positive attitude towards the same. The findings are as shown in Table 4.9

Table 4.9: Internet access

Internet access	Frequency	Percent
1 Yes	106	58.9
2 No	74	41.1

Total	180	100.0
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The findings revealed that of enterprises that reported to have internet access in their workplaces was 58.9% while the remaining 41.1% reported no internet access at their workplace.

#### 4.4.2 Internet access gadgets

After establishing those respondents who had internet services at their workstations, then this survey item was presented to the entrepreneurs in Nakuru town. Table shows a summary of the gadgets they use to access such internet services

Table 4.10: Internet access gadgets

Internet access gadgets	Frequency	Percent
1 Laptop	31	17.2
2 PC	44	24.4
3 Palmtop/Tablet	3	1.7
4 Others	28	15.6
Total	106	58.9
Missing entries	74	41.1
Total	180	100.0

Of the respondents who reported to have access to internet, 24.4% named a personal computer as the main gadget they use to access internet as shown in the figure below. 17.2% of the respondents listed a laptop while another 15.6% said other gadgets which included mobile phones. Only 2.83% named a palmtop/tablet as the main gadget that they use to access the internet at the office

### 4.4.3 Internet Quality

The quality of the internet services is of particular importance as it has a direct impact on the online experiences of both the firms and the consumers. A reliable internet connection with suitable connectivity speeds is presumed to enhance the adoption of e-commerce and other new technologies. The table 4.11 summarizes the respondents' experiences with their internet connections

Table 4.11: Internet Quality

Internet Quality	Frequency	Percent
1 Very poor	1	.6
2 poor	11	6.1
3 average	46	25.6
4 good	30	16.7
5 Very good	18	10.0
Total	106	58.9
Missing entries	74	41.1
Total	180	100.0

When asked about the quality of internet, of the 106 respondents who had indicated they had internet access at their work stations, 43.4% said that it was average, another 28.3% of the respondents said it was good while another 16.98% thought it was very good. About 12% thought the quality was poor.

### 4.4.4 Status of ICTs

The study sought to establish the prevailing general status of ICTs in Nakuru town, so as to correspond it to the more subjective enquiry of internet quality that entrepreneurs were required to respond to from their own personal usage and experiences. The table 4.12 represents the percentage rating on a likert scale of the state of ICTs in Nakuru as responded by the selected entrepreneurs

Table 4.12: Status of ICTs

Status of ICTs	Frequency	Percent
1 Very bad	2	1.1
2 Bad	3	1.7
3 Neither good nor bad	34	18.9
4 Good	131	72.8
5 Very good	10	5.6
Total	180	100.0

Since this was a general enquiry, not dependent on whether respondents had access to internet services at their workstations, all the 180 selected entrepreneurs rated the status of ICTs in Nakuru town. Only 2.8% of the respondents rated the status of ICTs as bad or very bad, the rest were fairly satisfied with it, with a majority of respondents at 72.8% rating it as good enough.

#### 4.4.5 Correlations with internet access

Since most of the data collected, in light of almost all questions in the survey items touching on internet access, was largely interval in nature, the study sought to incorporate the Spearman's coefficient of correlation as indicated in table 4.13

Table 4.13: Correlations with internet access

Correlations between internet access and e commerce adoption			Ecommerce adoption	Internet access
Spearman's rho	Ecommerce adoption	Correlation	1.000	.353**
		Coefficient		
		Sig. (2-tailed)	.	.000
	Internet access	N	180	180
		Correlation	.353**	1.000
		Coefficient		
		Sig. (2-tailed)	.000	.
		N	180	180

\*\* . Correlation is significant at the 0.01 level (2-tailed).

E-commerce adoption has a significant positive correlation with internet access which indicates that an entrepreneur with internet access at his or her workplace has a 0.353 more chance of adoption than the entrepreneur without such internet access.

## 4.5 Perceived Benefits of E-Commerce

To assess perceived benefits of E-commerce amongst the respondents, six survey items were used. Selected entrepreneurs had to show their level of agreement with each statement on a five point likert scales. The statements touched on e-commerce leading to increase in productivity; simplification of work routines; improved customer satisfaction; reduction in operating costs; new business opportunities; and development of new products. A score of 1-Strongly disagree, through 3-Neutral to 5-Strongly agree was given to the statements by the respondents

### 4.5.1 Increased productivity

This survey item was used in the study to assess the respondents thoughts on whether they agreed with the statement that adoption of e-commerce by an enterprise would lead to an increase in its productivity. The table 4.14 is a summary of the responses

Table 4.14: Increase in productivity

.Increases productivity	Frequency	Percent
2 Disagree	2	1.1
3 Neither agree or disagree	13	7.2
4 Agree	65	36.1
5 Strongly Agree	100	55.6
Total	180	100.0

Only two, of the 180 respondents, were of a contrary opinion to what was raised in the statement. A bigger portion of the respondents, 91.7% at the very least agreed with the statement raised concerning increases in productivity.



#### 4.5.2 Simplification of routine tasks

The study sought to establish from the respondents whether they believed that e-commerce would lead to a simplification of daily routine tasks. The responses were captured in table 4.15.

Simplification of routine tasks	Frequency	Percent
2 Disagree	11	6.1
3 Neither agree or disagree	48	26.7
4 Agree	74	41.1
5 Strongly Agree	47	26.1
Total	180	100.0

From the findings, 26.7% of the respondents could neither agree nor disagree with the statement, whereas 41.1% and 26.1% of respondents either agreed or strongly agreed to the same statement respectively

#### 4.5.3 Improved customer satisfaction

The respondents were further probed as to whether they thought use of new technologies, in particular e-commerce, would enhance customer satisfaction. The results were as shown in table 4.16.

Table 4.16: Customer satisfaction

Customer satisfaction	Frequency	Percent
2 Disagree	2	1.1
3 Neither agree or disagree	21	11.7
4 Agree	77	42.8
5 Strongly Agree	80	44.4
Total	180	100.0

None of the respondents totally agreed with the statement, but some 21 respondents (or 11.7%) could not make up their mind on what end of the spectrum the statement fell. However, still, a big majority of the respondents indicated that there was truth to the statement as 42.8% agreed, and a further 44.4% strongly agreed to it.

#### 4.5.4 Reduction in operating costs

The aspect of costs is as important, if not much more important, to the small and medium enterprises as it is to the larger business establishments. The study hence sought to find out whether the young entrepreneurs in Nakuru town perceived adoption of e-commerce as an additional cost in itself to the enterprise, or as tool to the enterprise that would enhance operational efficiencies thus reducing operational costs. The table 4.17 summarizes the results

Table 4.17: Reduction in operating costs

Reduction in operating costs	Frequency	Percent
1 Strongly Disagree	4	2.2
2 Disagree	19	10.6
3 Neither agree or disagree	56	31.1
4 Agree	62	34.4
5 Strongly Agree	39	21.7
Total	180	100.0

The sensitivity of the cost-factor to the SMEs was emphasized by the relatively higher percentage of ‘neutral’ respondents, at 31.1%, in relation to similar survey items on perceived benefits that received a “neither agree or disagree” on the score-card. A further 12.8% could at the very least not agree with the survey item on reduction of operating costs. However, despite it all, a slight majority of 56.1% gave affirmation to the said statement

#### 4.5.5 New business opportunities

Respondents were presented with a survey item touching on the adoption of e-commerce and its subsequent development or creation of new business opportunities to the enterprise. The young entrepreneurs’ responses were captured in table 4.18.

Table 4.18: New business opportunities

New business opportunities	Frequency	Percent
1 Strongly Disagree	1	.6
2 Disagree	4	2.2
3 Neither agree or disagree	12	6.7
4 Agree	69	38.3

5 Strongly Agree	94	52.2
Total	180	100.0

The youthful entrepreneurs in Nakuru town were very optimistic of the good tidings that adoption of e-commerce would bring about to their enterprises in terms of creating new business opportunities. More than half (52.2%) of the respondents strongly agreed that e-commerce would bring about completely new business opportunities, while only one respondent strongly disagreed to this sentiments.

#### 4.5.6 Development of new products and services

As a follow-up to the previous statement on whether adoption of e-commerce would create completely new business opportunities, a survey item was presented to the respondents to assess whether they still thought adoption of e-commerce would lead to the development of new products and (or) services particularly where a completely new business opportunity is not likely. The entrepreneurs' responses are summarized in table 4.19.

Table 4.19: Development of new products

Development of new products	Frequency	Percent
1 Strongly Disagree	5	2.8
2 Disagree	14	7.8
3 Neither agree or disagree	42	23.3
4 Agree	71	39.4
5 Strongly Agree	48	26.7
Total	180	100.0

Though a fair majority (66.1%) affirmed to the statement by agreeing (39.4%) or more so strongly agreeing (26.7%), there still was a fairly large number of respondents who could neither agree nor disagree (23.3%) to the said statement.

### 4.5.3 Correlation of perceived benefits

The perceived benefits to be enjoyed from the adoption of any new technologies, including e-commerce, informs the attitude of potential adopters towards such ICTs which consequently determines their decision-making on whether or not to adopt said technologies. It is therefore imperative that the study establishes a relationship between perceived benefits of e-commerce and the adoption of e-commerce. The table 4.20 presents this relationship.

Table 4.20: Correlation of perceived benefits

			Ecommerce adoption	Perceived benefits
Spearman's rho	Ecommerce adoption	Correlation Coefficient	1.000	.761**
		Sig. (2-tailed)	.	.023
		N	180	180
	Perceived benefits	Correlation Coefficient	.761**	1.000
		Sig. (2-tailed)	.023	.
		N	180	180

From the results; it is evident that perceived benefits have a statistically significant .761 positive relationship to adoption of e-commerce. The results marry into the schools of thought previously advanced by Crawford (1998) and Rogers (1995) who both indicated, though separately, that individuals who presumed e-commerce to have certain beneficial attributes developed a positive attitude toward such ICTs and thus accelerating their rates of adoption.

### 4.6 Internet Service Diffusion

A well laid ICT oriented infrastructural system is by all means expected to boost the utilization of ICTs and ICT based products and services. This section sought to consolidate this statement.

#### 4.6.1 Use of E-commerce

To assess the use of e-commerce in enterprises, a survey item was used asking whether the respondents use (or had used) e-commerce in the enterprise.

Table 4.21: Use of e-commerce in enterprises

Use of e-commerce in enterprises	Frequency	Percent
1 Yes	137	76.1
2 No	43	23.9
Total	180	100.0

From the respondents; responses were given where 76.1% responded the affirmative while 23.9% of the respondent said they don't use it. About 137 respondents indicated that they had used some aspects of e-commerce in their enterprises.

#### 4.6.2 Use of e-commerce applications

Following the responses given in table 4.17; the 137 respondents who had pointed out that they used e-commerce at their workplace, respondents were asked for what processes they used e-commerce and they gave the following responses as summarized in the table 4.22 .

Table 4.22: e-commerce applications used

Use of e-commerce applications	Frequency	Percent
1 E-mail	17	9.4
2 Orders and delivery	18	10.0
3 E-marketing	16	8.9
4 Payment Systems	77	42.8

5 Customer support	9	5.0
Total	137	76.1
Missing entries	43	23.9
Total	180	100.0

From the respondents; a more than half of them (56.2%) affirmed that they had incorporated some payment systems into their business enterprises, 13.1% had ordered or delivery goods/services through some e-commerce platform whereas only 6.5% of respondents had engaged in consumer support through similar platforms. The e-mail was largely used in social functions but only 12.4% affirmed to using it in business-oriented functions.

#### **4.6.3 Availability of physical equipment to support e-commerce**

The study sought to particularly establish whether, there were other factors that would inhibit the adoption of e-commerce other than the availability of physical equipment. Firstly, the study had to enquire if the said physical equipment to support e-commerce were available. Table 4.23 summarizes the findings

Table 4.23: Availability of physical equipment to support e-commerce

Availability of physical equipment	Frequency	Percent
1 Yes	166	92.2
2 No	14	7.8
Total	180	100.0

Of the respondents, only 14 of them (or 7.8%) indicated that they did not have the requisite equipment to support the adoption of e-commerce in their enterprises. This pointed out

to the 29 respondents who had the requisite equipment but still did not incorporate aspects of e-commerce into their enterprises.

#### 4.6.4 Physical infrastructure available

Most of the respondents (92.2%) said that their enterprises have the physical equipment needed to support e-commerce while only 7.8% claimed not to have. They went ahead to list the physical equipment as shown in the table 4.24.

Table 4.24: Physical infrastructure available

Physical infrastructure available	Frequency	Percent
1 Mobile phones	123	68.3
2 Modems	25	13.9
3 Wireless routers	12	6.7
4 Fibre optic cabling	6	3.3
Total	166	92.2
Missing entries	14	7.8
Total	180	100.0

The study showed that 74.1% of the respondents gave mobile phones for e-commerce; this can be attributed to the pervasiveness of mobile based money transfer systems like M-pesa, Airtel Money and the ever increasing mobile based financial solutions like SIM-ple from National Bank, EAZZY 24/7 from Equity Bank and so on. 15.1% listed modems, 7.2% of them listed routers while only a paltry 3.6% incorporated the use fiber optic cabling.

#### 4.6.5 New Technology Use

To ascertain the respondents' level of awareness and attitudes towards new technologies, including but not limited to e-commerce, a question was asked on how likely they were to try out

new technological products. Responses were given in a five point likert scale as shown in the table 4.25.

Table 4.25: New Technology Use

New technology use	Frequency	Percent
1 least likely	9	5.0
2 unlikely	25	13.9
3 maybe	81	45.0
4 likely	39	21.7
5 Most likely	26	14.4
Total	180	100.0

A larger percentage of the respondents, at 45%, indicated that they would at first adopt a wait and see attitude but would eventually try the new technologies out for themselves. About 36% were certainly likely to try out new technologies whereas some 5% of respondents would rather not try out new technologies due to various reasons.

#### 4.6.6 I.T Skills

Other than physical barriers, the study sought to examine what other factors would inhibit the adoption of e-commerce by the small and medium enterprises in Nakuru town. Respondents were asked to rate their IT skills on a five point likert scale; the results were summarized in the table 4.26.

Table 4.26: I.T Skills

IT Skills	Frequency	Percent
1 Very poor	1	.6
2 poor	3	1.7
3 fair	91	50.6
4 good	61	33.9



5 Very Good	23	12.8
Total	179	99.4
Missing entries	1	.6
Total	180	100.0

Majority of the entrepreneurs (50.8%) who responded to the question rated their skills as fair, 34.1% of the valid responses rated the respondents' skills as good and 12.8% rated their level of skill as very good. Only one respondent admitted to having very poor skills in as far as IT is concerned.

#### 4.6.7 Staff skills

Having affirmed their own levels of IT skills, entrepreneurs were required to shed light on the apparent levels of IT skills of their staff. This would go a long way to inform on the enterprise's overall readiness to adopt new technologies. Table 4.27 summarizes the results as shown

Table 4.27: Staff skills

Staff skills	Frequency	Percent
1 Yes	92	51.1
2 Somewhat	38	21.1
3 No	37	20.6
4 Don't Know	13	7.2
Total	180	100.0

Over 50% of the entrepreneurs said that they believed that their staff had the requisite technical skills to aid in adoption of e-commerce, 21.1% said they somewhat believed the same while 20.6% said they do not believe their members of staff have the necessary skills. About

7.2% of the respondents said they do not know if their members of staff have the necessary skills to aid in adoption of e-commerce.

#### 4.6.8 Correlations of internet diffusion

To establish the strength and direction of relationship between internet diffusion and the adoption of e-commerce in Nakuru town, a spearman's rho coefficient of correlation analysis was undertaken with the aid of SPSS. Table 4.28 shows the relationships between the two items

Table 4.28: Correlations of internet diffusion

Correlations between internet diffusion and e commerce			E commerce adoption	Internet diffusion
Spearman's rho	E commerce adoption	Correlation Coefficient	1.000	.470**
		Sig. (2-tailed)	.	.000
		N	181	181
	Internet diffusion	Correlation Coefficient	.470**	1.000
		Sig. (2-tailed)	.000	.
		N	181	181

\*\* . Correlation is significant at the 0.01 level (2-tailed).

E-commerce adoption has a significant positive correlation with internet access which indicates that an entrepreneur with appropriate physical equipment have 0.470 more chance of adoption of e-commerce than entrepreneurs without such internet-ready physical equipment

#### 4.7 Security Readiness/Privacy Concerns

As envisaged in the Kenya ICT Policy (2006), the challenge of any nation (and in particular Kenya) is to develop an adequate capacity and sound legal framework to deal with national security and cybercrime. An e-security structure should be developed, in collaboration with other relevant institutions, to put in place mechanisms for international cooperation in dealing with cross-border crimes. This study sought to inquire, from the respondents, about their concerns on the inherent risk associated with new technologies such as e-commerce

### 4.7.1 Level of risk involved

To assess the level of risk in the adoption of e-commerce, a survey item inquiring on perceived level of risk associated with the dissemination of company-specific or product-specific knowledge via e-commerce platforms. The responses were to be indicated on a five point likert scale ranging from 1-Highly risky through 3-neutral to 5-very safe. The table 4.29 summarizes the answers.

Table 4.29: Level of risk involved

Level of risk involved	Frequency	Percent
1 Highly risky	4	2.2
2 Fairly risky	68	37.8
3 Indifferent	24	13.3
4 Fairly safe	60	33.3
5 Very safe	24	13.3
Total	180	100.0

The results show that most of the respondents think that sharing of sensitive information on e-commerce platforms is fairly risky, only a cumulative 46% of respondents believed that it was fairly safe (33.3%) or very safe (13.3%). It would suffice then to say that more than half of the respondents expressed their reservations with the levels of risk inherent in the dissemination of information over new technologies' platforms..

### Levels of comfort of use

To assess the readiness of the respondents to adopt new technologies in e-commerce, the following question was posed: How would you characterize your level of comfort with the adoption and usage of new technologies such as e-commerce?

Table 4.30: Levels of comfort of use

Levels of comfort of use	Frequency	Percent
1 Very uneasy	2	1.1
2 Uneasy	2	1.1
3 Indifferent	4	2.2
4 Fairly comfortable	105	58.3
5 Very comfortable	67	37.2
Total	180	100.0

From the summary table 4.30; it can be drawn that majority of the respondents are comfortable with adoption of new technologies and e-commerce. This is contrary to response given by a good portion (approximately 40%) who expressed that they thought it risky to share sensitive information/knowledge over the e-commerce platform as shown in the preceding figure.

### 4.7.3 Correlations of security concerns

The relationship between security/ privacy concerns and the adoption of e-commerce amongst youth entrepreneurs in Nakuru town can best be addressed by the Spearman's rho. This is summarized in table 4.31

Table 4.31: Correlations of security concerns

Correlations between security concerns and e commerce			Ecommerce adoption	risk Security concerns
Spearman's rho	Ecommerce adoption	Correlation	1.000	-.204**
		Coefficient		
		Sig. (2-tailed)	.	.006
		N	180	180
	Security concerns	Correlation	-.204**	1.000
	Coefficient			

Sig. (2-tailed)	.006	.
N	180	180

\*\* . Correlation is significant at the 0.01 level (2-tailed).

E-commerce has a significant negative correlation with security concerns such that for a unit increase in the security concern ranking there is a 0.204 reduction in the probability in e-commerce adoption. Internet access has a significant negative correlation with security concerns

## **CHAPTER FIVE**

### **SUMMARY OF FINDINGS, DISCUSSION, CONCLUSION AND RECOMMENDATIONS**

#### **5.1 Introduction**

This research study sought to highlight the factors influencing the adoption of ecommerce among youthful entrepreneurs in Nakuru Town. This chapter therefore includes a summary of the findings, deliberates on the findings and provides conclusions in line with the objectives of the study. Based on the findings; this chapter also forwards the contribution of this research study to the general body of knowledge and also details recommendations for further study.

#### **5.2 Summary of the findings**

This study targeted a sample size of 198 youthful entrepreneurs, between the ages of 15 – 35 years, who are successfully running their own duly registered enterprises within Nakuru town.

Out of the 198 questionnaires administered to the targeted populace, 181 questionnaires were duly completed and returned indicating a ninety one percent response rate.

From the study; it is evident that most of the young entrepreneurs, accounting for about 73%, are in their 20s with the bulk of this being between the ages of 21 – 25 years. Most of the enterprises are situated in Biashara, Menengai and Nakuru East wards in order to take advantage of the thriving commercial activities around these areas. Also, the male entrepreneurs had more years of schooling than their female counterparts as the female respondents registered the highest cases of primary school level of education. However, relatively speaking, the female entrepreneurs had the highest transition rate from secondary to other tertiary levels of education (college or university) while their male counterparts seemed to register only a high transition rate from primary to secondary schooling.

Flamingo and Menengai wards are perceived to be more of residential areas than commercial areas and thus the number of business establishments around these areas is relatively low.

Of great interest however is the highest level of education attained by these young entrepreneurs, a majority of them cited college (55%) and secondary (26%) while only 14% cited university level as the highest attained grade. This points to the thinking that entrepreneurship is only an after-thought after one has failed to secure formal employment. Most university graduates are inclined to seek formal employment than delve into the murky and uncertain world of entrepreneurship and self-employment. The ever increasing competition for white collar jobs, particularly in developing nations like Kenya where unemployment rates are still high, sees the secondary and college graduates relegated to the peripheries of the national labour force – these drives them to seek alternative income generating activities through self-employment, entrepreneurship or other blue collar jobs.

This study also established that while e-commerce is not a very foreign concept to the young entrepreneurs given this prevailing 'digital age'; however, what exists is what we would call social awareness of e-commerce as opposed to the more purposive business oriented e-commerce. The most prevalent e-commerce platforms include facebook, mocality/ OLX, twitter, m-pesa, SMS/ whatsapp and e-mail all of which are geared towards e-marketing or

creating an online presence save for m-pesa and olx which are mostly mobile based payment systems.

### **5.3 Discussion of the findings**

This section briefly interrogates the findings of this study against the previously laid down objectives of this research study. These objectives were to examine the influences of perceived benefits, internet service diffusion, internet access and security/ privacy concerns on the adoption of e-commerce amongst the youth entrepreneurs in Nakuru town.

Crawford (1998) indicated that e-commerce is not only important for the perspective of commercial transactions, but also in the manner in which it encourages transformation of internal systems and subsequent business' efficiencies, responsiveness to consumer needs and the potential emergence of new products and services or completely new business venture opportunities. From the findings, the adoption of e-commerce amongst the youthful entrepreneurs was split right down the middle with respondents who had adopted some aspects of e-commerce vis-a-viz those who had not adopted e-commerce being 4.08 to 4.07. However, both respondents (adopters and non-adopters) largely agreed that e-commerce's pros out-weighed its cons. In agreement to Beckinsale and Ram (2006), perceived benefits of ICT adoption particularly by the SMEs (majority of whom are ran by youthful entrepreneurs) are at all times focused on improving business efficiency; operational effectiveness and the need to reach out for new markets and opportunities. It is on these three fundamental premises that the youthful entrepreneurs in Nakuru town seem to also evaluate such benefits associated with adoption of e-commerce. The contribution of e-commerce in increasing productivity was overwhelmingly supported by 97.1% of the respondents, just as MacGregor and Vrazalic (2004) and Lawson *et al* (2003) had pointed out in their respective studies.

The findings of this study further concurred with Poon and Swatman (1997) findings that adoption of e-commerce by small businesses and its ongoing usage was driven by the perceived benefits and potential new business opportunities that would be offered to the businesses – as much as 90% and 65% of the respondents were of the opinion that adoption of e-commerce would lead to new business opportunities, and the development of new products and services. The young entrepreneurs only expressed their reservations about the contributions of

e-commerce in reducing operating cost. Ihlstrum *et al* (2003) indicated that the slow uptake of e-commerce by SMEs could be attributed to their general lack of a real understanding as to what e-commerce is, what it can do and how it can benefit their enterprises. They (Ihlstrum *et al*) pointed out to what is referred to as small business' perennial focus on costs rather than benefits, as has been seen from this study. Though more than half of the respondents held that it (e-commerce) did reduce operating costs, about 45% of the respondents were in disagreement. This accentuated the cost attribute (whether real or perceived) as one of the major determinants on the adoption of e-commerce.

The pervasiveness of use of e-commerce is fairly high as 76.1% of respondents affirmed to the use of some aspect of e-commerce in their enterprises though none admitted to being a fully pledged e-commerce based business enterprise. This was in true harmony with the assertion of Rogers (1995) that the would-be "e-commerce adopters" needed to see the benefits arising from such adoption. Payment systems and orders/ delivery were the most widely used e-commerce applications courtesy of their ease of use from a mobile based platform. Consumer support, on the other hand, was the least used e-commerce application as entrepreneurs preferred to deal with their customers in a more personalized and human-like manner as opposed to the distant online customer support system which they viewed as most suited for enterprises with customers over a much wider geographical coverage. These sentiments were also captured by Pease and Rowe (2003) that though new innovations need to be observed and trialled, they sure too must be compatible with 'customs and practice'. The usage of e-mail applications, for instance, was almost unanimous across the board though only a mere 12.41% confirmed its usage for business oriented purposes with mobile phones being the newest preferred tool of choice for communication purposes.

A big majority (92.2%) affirmed that their enterprises had the institutional readiness to adopt e-commerce based on the physical infrastructures available, their likelihood to try out new technologies (only 18.9% were cited as unlikely to try out new technologies) and IT/ technical skills that would complement the adoption of e-commerce (less than 3% of entrepreneurs admitted to having poor or very poor IT skills). From the findings therefore, it would suffice to say that most of the youthful entrepreneurs are running or managing enterprises with a high degree of readiness to the adoption of e-commerce.



As pointed out in the Internet Diffusion Model (Rogers, 1983); the five constructs postulated therein of relative advantage, compatibility, complexity, trial-ability and observability of technology in determining its adoption or rejection by the user proved very critical to this study. Whereas relative advantage, trial-ability and complexity did not raise much of an issue with the youthful entrepreneurs, the compatibility and observability constructs were deemed critical to adoption of new technologies.

The challenge therein lied with the compatibility of such adoption to their diverse business needs. Most entrepreneurs pointed out that their small scale nature inhibits the proper utilization of e-commerce applications - most of the fairly small enterprises engage in e-mails or e-marketing in a quest to seek out more customers while the fairly larger enterprises (though still in the SMEs bracket) tend to prefer the orders/delivery and payment systems due to the larger sum of monies involved. This is particularly similar to what SETEL's Final Report (2002) addressed to as SMEs 'hierarchy of needs' only that this time round these needs are informed by the size of enterprises, and not their barriers to adoption of e-commerce. In essence, the smaller enterprises will seek more customer oriented e-commerce applications while the fairly larger establishments will be more concerned about their safety (in terms of money and merchandise). The size of the establishment thus turns out to be a key component in the overall adoption of e-commerce.

Organizational readiness is pertinent to the adoption and subsequent integration of new technologies, including e-commerce, by SMEs. Lawson *et al* (2003) further indicated that such readiness was curtailed by lack of staff IT expertise, limited physical internet-based equipment and related infrastructures. A bigger portion of the entrepreneurs surveyed (58.9%) acknowledged their access to internet services at the work place. Of this, 70.76% of the respondents cited personal computers and/ or laptops as their preferred gadgets of use while about 26% accessed internet services at work through their mobile phones. A mere 2.63% cited use of palmtops or tablets though the figure did tally up considering the tablet market is yet to fully open up in Kenya.

Judging from the entrepreneur's own subjectivity and the overall state of ICTs in comparison to other areas in Kenya, internet quality in Nakuru town was given a clean bill of health. Based on personal usage, less than 20% of respondents rated the internet quality as poor

or very poor while in general the state of ICTs was as good (72.8%) or very good (5.6%). More than seventy percent (72.2%) of entrepreneurs showed confidence in their staff as far as their IT/technical skills are concerned. This would be a positive boost toward the inclination of adoption of e-commerce by the enterprises.

According to the proponents of TRA model (Fishbein and Ajzen, 1980), the attitudinal component of an individual is the sum total of beliefs concerning the perceived consequences of certain actions (or choices) and a personal evaluation of each of these consequences. The concepts of security and privacy concerns of e-commerce can be addressed in the same light as they involve personal evaluations of how much risk is involved, how much risk one can take (absorb comfortably) and how much intrusion such new technologies might bring into one's private life.

This concept of security and privacy as far as new technologies are concerned is still viewed as a double-edged sword. From the findings; 58.3% of respondents claimed to be fairly comfortable with the use of e-commerce applications and a further 37.2% claimed to be very comfortable with it, only 33.3% and 13.3% thought of e-commerce to be fairly safe and very safe respectively in terms of the risk involved in divulging enterprise-specific or product-specific information over such channels.

While the two sets of statistics may appear contrary to each other, they do actually complement each other in the sense that these young entrepreneurs are cognizant of the inherent risks associated with any new systems or technologies. Security and other privacy concerns are further heightened by the perceived entrepreneurs' at best fair IT skills in comparison to the outside elements (fraudsters) with perceived superior skills. However, they were confident that with the appropriate attention being paid to the ICTs sector, by the Government and other key stakeholders, more innovative solutions would be forthcoming to curb on the elements of insecurity in cyberspace. The Australian Small Enterprise Telecommunication Centre (SETEL) advised that, though general awareness of e-commerce had been achieved, further simplification and demystification was required to allay fears and remove impediments to its acceptance by SMEs (SETEL Final Report, 2002). The high levels of comfort amongst youth entrepreneurs in Nakuru town, for instance, could also be attributed to or informed by the prevailing 'digital age' news that is awash in almost all media outlets both locally and internationally.

The seemingly contrary statistics, however, more strongly points to the nature of the average young entrepreneur in Nakuru town, who is technologically agile, fairly educated and above all a risk taker. Interestingly, most of these concerns are the perceptions of barriers, rather than de facto obstacles. Nonetheless, perception is what influences decisions, particularly in SMEs where the entrepreneur is the lead decision making (Harbi, Amamou and Anderson, 2009). Grandon and Pearson (2004) examined the determinant factors in the adoption of electronic commerce as perceived by top managers in SME. They argue that those who perceive e-commerce as adding strategic value to the firm have a positive attitude toward its adoption.

#### **5.4 Conclusion**

A lot has been done, both at the local and national level, to deepen internet diffusion and access patterns. This has been largely achieved due to fair pricing, extensive geographical coverage and improved signal quality. The perceived benefits associated with the adoption of e-commerce are also virtually uncontested particularly amongst the youthful entrepreneurs in Nakuru town. There is a general appreciation of new technologies, e-commerce included, but the entrepreneurs are for some reasons still jittery about their adoption into the daily business activities

The concept of associated costs, size of the enterprises and security/privacy concerns are inevitably proved to be the major determinants or factors affecting the adoption of e-commerce. In terms of cost, small and medium enterprises are more short-term oriented (not certain of their going concern) and thus adoption might be viewed as an additional cost to the enterprise rather than a long-term investment.

In terms of size of enterprise, Most of the enterprises were also pegged at their infant stages (less than six years in operation) with sole proprietorship and partnerships accounting for more than ninety percent of all businesses and employing five or less employees. Though the enterprises would be regarded to have sufficient levels of organizational readiness, the entrepreneurs still hold that the markets are not yet fully developed to fully accommodate the use of e-commerce hence their inclination towards the use of only certain aspects of it.

Security/privacy remains a key area of concern with most entrepreneurs having issues in fully trusting the systems, their level of IT skills and the outside elements lurking in the

cyberspace. Eastin (2002, as cited in Ka-Young, Anderson and Cruikshank, 2012) intimated that risk in conducting online business was about the person's perception of security and thus it played a significant role in the adoption processes. Similarly; the attitudinal aspect of young entrepreneurs in Nakuru town and by transitivity that of their staff, towards new technologies was manifested in their perceptions of the risks involved in the adoption of said technologies. However, there is growing optimism that the situation would not get out of hand.

## **5.5 Recommendations**

In light of these findings, this study would advance the following recommendations:

1. That the government, through the Kenya ICT Board, Youth Empowerment Program and Vision 2030 Secretariat, conduct a national baseline survey to exploit ways in which the youthful entrepreneurs would be encouraged to fully integrate e-commerce into their businesses. This would inform the key ICTs sector players and provide insights to ensure that the heavy investments being made into the sector do not go to waste or end up being under-utilized thus reducing the would-be returns on investment of such projects.
2. There is also need to conduct capacity building training and commercial awareness of e-commerce as this would go a long way to inculcate a certain degree of confidence in e-commerce by the infant enterprises. This would also prove beneficial too to the Government as the Revenue Authority would be able to bring on board the informal sector via such electronic platforms. Tax compliance would also be significantly improved as defaulters would be retraced by their electronic footprints
3. In this digital age; it would also be commendable for the young entrepreneurs to invest in IT and other technical skills, and where possible also invest in their staff, in order to demystify the workings of e-commerce and other business oriented new technologies.

## **5.6 Contributions to the Body of Knowledge**

From the findings of this research study; it can be stated unequivocally that adoption of new technologies, e-commerce included, does not lie entirely on real factors such as the presence of supporting infrastructure or levels of IT skills or associated benefits and so on but also perceived factors such as levels of comfort towards usage of such technologies, perceived associated costs and so on, do play a significant role too.

Also, particularly amongst the surveyed youth entrepreneurs, the absence of a local success story in their vicinity fully propelled by e-commerce, casts a ‘foreign tag’ on the concept of e-commerce. As pointed out in the IDT theory (1983); displaying an innovation’s superiority in a tangible manner will most certainly increase its uptake and consequent rate of adoption.

Youthful entrepreneurs do look up to other successful local businesses to emulate, and would be more willing to adopt such measures adopted by the said successful businesses. But if a particular business concept is viewed as foreign, in the eyes of the entrepreneurs, then uncertainty is cultivated around it thus inhibiting its adoption and integration into routine business practices.

Table 5.1: Contribution to the body of Knowledge

<b>Objectives</b>	<b>Contributions to body of knowledge</b>
1. Examine the influence of perceived benefits on the adoption of e-commerce among the youth entrepreneurs in Nakuru Town.	The perceived benefits of e commerce to growing small scale enterprises is largely uncontested save for its reduction of operating costs particularly in the short run.
2. Analyze the influence of internet service diffusion on adoption of e-commerce among youth entrepreneurs in Nakuru Town.	There has been spirited efforts by the Government, and other key ICT players from the private sector, to expand ICT related infrastructures and these initiatives have not gone un noticed by the general public
3. Examine the influence of internet access patterns on the adoption of e-commerce among the youth entrepreneurs in Nakuru Town	The access to internet services has been pervasive courtesy of the more than 67% mobile phone penetration. Also, more and more persons are equipping themselves with IT relevant skills in this ‘digital age’.

4. Identify the influence of security readiness in the adoption of e-commerce among the youth entrepreneurs in Nakuru Town.

There is a general high comfort level for use of new technologies, but the general public is at the same time cognizant of the safety challenges posed by such technologies

### **5.7 Suggestions for further studies**

This study sought to establish the various factors that influence the adoption of e-commerce amongst youthful entrepreneurs in Kenya, though it was specifically focused on youth entrepreneurs in Nakuru town. From the findings thereof, suggestions for further studies would include:

1. The current study was limited to factors affecting adoption of e-commerce in Nakuru town, a large urban centre. Similar studies would be encouraged in lesser urban settings in order to fully comprehend the true status in Kenya, from urban and rural perspectives
2. Further studies should be undertaken to establish the causes, the effects, and possible remedies, of the low numbers of graduate-level youthful entrepreneurs. It should seek further to establish if the low number of graduate entrepreneurs is related to the poor survival rates of enterprises past their sixth year

3.

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## APPENDICES

### APPENDIX 1: Letter of Research Permission to Carry out Research

REPUBLIC OF KENYA



**NATIONAL COUNCIL FOR SCIENCE AND TECHNOLOGY**

Telephone: 254-020-2213471, 2241349, 254-020-2673550  
Mobile: 0713 788 787 , 0735 404 245  
Fax: 254-020-2213215  
When replying please quote  
secretary@ncst.go.ke

P.O. Box 30623-00100  
NAIROBI-KENYA  
Website: www.ncst.go.ke

Our Ref: **NCST/RCD/13/013/62** Date: **10<sup>th</sup> June 2013**

Agnes Wambui Karime  
University of Nairobi  
P.O Box 1120  
Nakuru.

**RE: RESEARCH AUTHORIZATION**

Following your application dated **31<sup>st</sup> May, 2013** for authority to carry out research on ***“Factors influencing the adoption of E-commerce among youth entrepreneurs in Nakuru town, Kenya.”*** I am pleased to inform you that you have been authorized to undertake research in **Nakuru District** for a period ending **31<sup>st</sup> August, 2013.**

You are advised to report to **the District Commissioner and District Education Officer, Nakuru District** 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.**  
**DEPUTY COUNCIL SECRETARY**

Copy to:  
The District Commissioner  
The District Education Officer  
Nakuru District.

*“The National Council for Science and Technology is Committed to the Promotion of Science and Technology for National Development”.*

## APPENDIX 2: Data Collection Questionnaire for Youth Entrepreneurs

Instructions – Tick where applicable ( )

### Research Questionnaire

This questionnaire seeks to establish the factors influencing the adoption of E-commerce among the youth entrepreneurs. You are not required to fill in your names. All information given will be treated with utmost confidentiality.

#### Section 1: Background Information

1 What is your gender?

Male

Female

2 Please indicate your age?

15 - 20

21 - 25

26 - 30

31- 35

3 What is your highest attained level of education?

Primary

Secondary

College

University

Any other, please specify.....

4 What is your county ward of residence?

Biashara ward

Kivumbini ward

Flamingo ward

Menengai ward

Nakuru East ward

## Section 2: Enterprise characteristics

5 What is the legal status of your enterprise?

- |  |  |
|--|--|
| <input type="checkbox"/> Sole proprietorship | <input type="checkbox"/> Partnership         |
| <input type="checkbox"/> Limited Liability   | <input type="checkbox"/> Co. Joint Stock Co. |

6 What is the sectoral breakdown of the enterprise?

- |                                       |  |
|---------------------------------------|--|
| <input type="checkbox"/> Technologies | <input type="checkbox"/> Manufacturing   |
| <input type="checkbox"/> Services     | <input type="checkbox"/> Retail          |
| <input type="checkbox"/> Wholesale    | <input type="checkbox"/> Other [specify] |
| .....                                 | <input type="checkbox"/>                 |

7 How long have you been an entrepreneur?

- |                                   |                                |                                |                                 |                                    |
|-----------------------------------|--------------------------------|--------------------------------|---------------------------------|------------------------------------|
| <input type="checkbox"/> <3 years | <input type="checkbox"/> 3 - 6 | <input type="checkbox"/> 6 - 9 | <input type="checkbox"/> 9 - 12 | <input type="checkbox"/> >12 years |
|-----------------------------------|--------------------------------|--------------------------------|---------------------------------|------------------------------------|

8 What is the size of the enterprise?

- |                                       |  |                                  |
|---------------------------------------|--|----------------------------------|
| <input type="checkbox"/> <5 employees | <input type="checkbox"/> 6 - 10        | <input type="checkbox"/> 11 - 15 |
| <input type="checkbox"/> 16 - 20      | <input type="checkbox"/> >20 employees |                                  |

## Section 3: Internet Access Patterns

9 Please indicate whether you have access to internet services at the work place.

- |                              |                             |
|------------------------------|-----------------------------|
| <input type="checkbox"/> Yes | <input type="checkbox"/> No |
|------------------------------|-----------------------------|

10 If yes, what electronic gadgets do you use to access the internet?

- |                                 |   |
|---------------------------------|---|
| <input type="checkbox"/> Laptop | <input type="checkbox"/> Palmtop/ Tablet  |
| <input type="checkbox"/> PC     | <input type="checkbox"/> Others [specify] |
| .....                           | <input type="checkbox"/>                  |

11 On a scale of 1 - 5; 1 being Very poor and 5 being Very good, what is the quality of the internet service?

- |                          |                          |                          |                          |                          |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|

1                                  2                                  3                                  4  
 5

12 In general, how would you describe the present state of ICTs in Nakuru town?

Very bad                                   neither good nor bad                                   Bad  
 Good                                   Very Good

**Section 4: Perceived Benefits**

13 Please read the statements below on adoption of e commerce; and decide where you Strongly Agree (SA) Agree (A) Neutral (N) Disagree (SD) Strongly Disagree (SDA)

	(SA)	(A)	(N)	(SD)	(SDA)
E-commerce would lead to increased productivity					
E-commerce would lead to simplification of work routines					
E-commerce would lead to improved customer satisfaction					
E-commerce would lead to a reduction in operating costs					
E-commerce would lead to new business opportunities					
E-commerce would lead to development of new products and services					

**Section 5: Internet Service Diffusion**

14 Does the enterprise use any e-commerce applications?

Yes                                   No



15 If yes, what e-commerce applications are they?

E-mail  E-marketing  
Customer support

Orders and delivery  Payment systems  
16 Do the enterprise have any physical equipment to support the use of e commerce?

Yes  No  
17 If yes, please indicate the physical infrastructure available.  
 Mobile phones  Modems  
 Wireless routers  Fibre optic cabling  
 Other [specify].....

18 How would you describe your level of IT skills?  
Very Poor  Poor  Fair  Good  Very Good

19 In your opinion; do you believe the staff has the necessary technical skills to aid in adoption of e commerce?

Yes  Somewhat  No  Don't know

**Section 6: Security Readiness/privacy**

20 In your opinion; what level of risk do you believe there is in the dissipation of company specific or product specific knowledge via e commerce platforms?

Highly risk  Fairly risk  No risk  Fairly safe

Thank you for your responses!

### **APPENDIX 3: Interview Schedule**

- 1 Currently, have you incorporated the use of e-commerce in your enterprise?
- 2 If no, please indicate some of the major inhibitors/ barriers to such adoption.
- 3 If yes, please indicate some of the major factors that lead to such adoption.
- 4 How would you describe the state of ICTs in Nakuru town with references to:
  - a Government policy and regulations
  - b Network infrastructure and service quality
- 5 In your opinion; what is the level of preparedness of enterprises in Nakuru town to adopt e-commerce in reference to :
  - a Attitudes and beliefs towards e commerce
  - b Levels of IT and other technical skills
- 6 How compatible do you find the various e commerce applications (e mail, e marketing, customer support etc.) to your daily business needs?
- 7 How would you describe the ease of testing and/ or implementing the said e-commerce applications?
- 8 What is the integrity of these systems (e-commerce applications) in your business environment with regards to authenticity, confidentiality and repudiation?
- 9 What are your greatest concerns (security/ privacy or otherwise) with this whole e-commerce business?
- 10 In your opinion; what sectors/ industries are best suited for the adoption of e-commerce?
- 11 Overall; would you advice the young entrepreneurs to adopt e-commerce? Why?
- 12 Any additional remarks?

Thanks a lot for your assistance!