

**FACTORS INFLUENCING ADOPTION OF E-COMMERCE
WITHIN SMALL AND MEDIUM ENTERPRISES: THE CASE OF
SELECTED SMALL AND MEDIUM ENTERPRISES IN
KAMUKUNJI CONSTITUENCY,
NAIROBI KENYA**

BY

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**A Research Project Report Submitted in Partial Fulfillment of the Requirements
for the Award of the Degree of Master of Arts in Project Planning and
Management of the University of Nairobi**

2017

DECLARATION

This research project report is my original work and has never been submitted to any other university or institution for examination.

Signature.....

Date.....

WILTER CHEPNGENO

L50/76165/2014

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

Signature.....

Date.....

MR. AUGUSTINE MWANGI

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DEDICATION

I would like to dedicate this research report to my parents Mr. and Mrs. Towett

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I am sincerely grateful to my supervisors Mr. Augustine Mwangi, for his academic guidance during the writing of this proposal. I am also greatly indebted to my fellow master of project planning and management students for their encouragement and support. Finally, I would like to appreciate the University of Nairobi for offering this program. This experience opened my mind to new ways of thinking.

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ABBREVIATIONS AND ACRONYMS

B2B	Business to business
B2C	Business to consumer
C2C	Consumer to Consumer
CWAM	Course website acceptance model
E-COMMERCE	Electronic Commerce
IT	Information Technology
ICT	Information and Communication Technology
ILM	Internet based learning
LDCs	Least developed countries
LMS	Learning management system
MSMES	Micro Small and Medium Enterprises
OECD	Organization for Economic Cooperation Development
SME	Small and Medium Enterprises
SPSS	Statistical package for social science
TAM	Technology Acceptance Model
TOE	Technology-Organization –Environment Model
UNCTAD	United Nations Conference on Trade and Development

ABSTRACT

This is a research report on factors influencing adoption of e-commerce within SMEs. The case of selected SMEs in Kamukunji constituency Nairobi county Kenya. Technology acceptance model was developed in this study. Five Objectives were proposed; Cost of ICT, ICT knowledge and skills, access to ICT, perceived benefits and Firm size context. The study adopted the following research methodology; First, the use of survey research design to collect data using a well-developed questionnaire. The target population was 1569 SME employees within SMEs in Kamukunji constituency Kenya. In this research the researcher used purposive sampling which allows the researcher to hand pick the respondents having information relevant to the study. Data was collected using a questionnaire, the collected facts were analyzed using descriptive statistics and inferential analysis applying statistical package for social science (SPSS) and correlation analysis and data presented in tables. The research concludes that majority of the entrepreneurs in Kamukunji constituency in Nairobi, Kenya have adopted e-commerce to improve organizational performance. The findings further point to the strong influence of ICT cost, ICT skill and perceived benefits, concerns on adoption of e-commerce. Firm size and Access to ICT influence but not as strongly as the other three attributes. It was evident that cost of ICT remains a key determinant of decisions made. The entrepreneurs expressed their concerns technical capabilities that could lead to deficient views of technical management, technical. The study recommends that SME's in Nairobi need to incorporate all the e-commerce components into the ICT system to enable them to improve the overall performance of their firms. The study also recommends that future research will need to be carried in other financial industries and countries in order to show if the link between e-commerce components and SME's can be generalized.

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

There was a notable proliferation to adopt online retailing systems in USA between 1995 and 2000. Subsequently, in industrialized countries e-commerce swift growth is apparent. Worldwide e-commerce expenditure was less than US\$0.30 trillion in 2000 and has presently reached over US\$9 trillion. The U S, shadowed by Europe, institutes the paramount share of approximately 80% e-commerce revenue worldwide. Conversely Middle East and African have the least portion of around 4% of global e-commerce revenue. According to Kagwana 2008, there are 98078, small and medium enterprises in Nairobi out of which 156,924 are employed by these firms. The study population targeted the operators of small and medium enterprises in Kamukunji, Nairobi, Kenya. The results from this target population was used to provide a whole view of the factors impelling e-commerce adoption amongst SMEs in Kamukunji constituency Kenya

Small businesses benefits a lot from Internet. As a transaction means, a marketplace, as a communication medium, it has advantages; the global Web is cheaper, fast and easy way to interact with clients, suppliers and other businesses all over the world. A company's Web helps to improve customer service, heighten credibility, gather feedback, and facilitate business procedure. (Chen, Steve, Alex & John, (2003)

There are many difficulties faced by SMEs essentially linked to its structure and the adjacent location, Small businesses ordinarily lack the financial resource, technical expertises, and the experience to adopt new technology (Al-Hawari, Al-Yamani, and Izwawa, 2008), suggests that use of Internet is not compelling among small firms (Karanasios, 2007), mainly in less developed states.

Firms in LDCs should have positive gain since their products can be overwhelmed using e-commerce technology and they are often not competitive leading to high cost of transport and unproductive business processes thus, e-commerce give them a better

access to information due to availability of worldwide markets, firms in the LDCs expand into new sectors where they can gain from their low cost of labour,(UNCTAD 2001)

Moodle (2002) argue that businesses see e-commerce in South Africa,as extra investment cost with very indefinite returns. Firms used Internet platforms to complement other information, communication systems and trading procedures. More generally, the public Internet and e-mail are rather exclusively new way of doing business but regarded as a means of supporting existing trade associations.

Jelassi, T., & Enders, A. (2008). Mobile phones should be used to facilitate the transactions in order to improve efficiency and reduce high transaction costs, since both the customers and businesses people have access to it. However, in his findings he realized that most of those who had phones majorly used the phones for communication. One of the researchers (Macharia, 2009) further indicated that there was partial efficient research into E-commerce implementation in small micro enterprises and in selected SMEs in Kenya.

1.2 Statement of the Problem

The usage pattern of the internet firms in Kamukunji constituency, Kenya illustrate a deliberate succession in the use of e-commerce information technology yet adoption is said to enlarge business through improved efficiencies and increased revenues, as well as the creation of new opportunities for business and consequent employment.

1.3 Purpose of the Study

This report scrutinized features inducing electronic commerce adoption of within SMEs in Kamukunji constituency Kenya.

1.4 Objectives of the Study

The study was steered by these five goals

- i) To Survey cost of ICT on e-commerce adoption by the SMEs in Kamukunji constituency.
- ii) To establish the ICT skills influence on the adoption of e-commerce by the small firms in Kamukunji constituency.

- iii) To determine the influence of ICT access on implementation of e-commerce by SMEs in Nairobi Kamukunji constituency
- iv) To establish the influence of perceived benefits on the adoption of e-commerce among the SMEs in Kamukunji constituency.
- v) To evaluate the influence of firm size on adoption of e-commerce.

1.5 Research questions

- i) To what extent does cost of ICT influence the adoption of e-commerce by the SMEs in kamukunji constituency?
- ii) How do ICT skills affect the adoption of e-commerce in Kamukunji constituency?
- iii) How do ICT access influence the adoption of e-commerce by SMEs Kamukunji constituency?
- iv) How ICT do expected benefits influence the e-commerce adoption of among SMEs in Kamukunji constituency?
- v) How do the size of the firm influence the e-commerce adoption of in Kamukunji Constituency?

1.6 Significance of the Study

As argued by (MacGregor 2011) Expansion of customer base is allowed by online transaction through global market penetration due enhanced access to information on an international scale, resulting in improved business performance, internal efficiency and their operations. The economic benefits that of online transactions are; increased productivity, sales, and economies of scale across the operational business processes. In Kenya, the government has embraced policies on Information and Communications Technology named e-procurement and integrated financial and management information system.

1.7 Delimitation of the Study

This research was conducted within borders of Kamukunji constituency. However, such data collected outside of the county but deemed pertinent for statistical analysis and comparisons was indispensable. The collection of data span from the late 1990s to the most recent of data available, (Crawford (1998) argued that from the perspective of commercial transactions as well as the manner in which it encourages improved

efficiency and transformation of internal systems with regards to receptive cost, , customization of offerings and the potential occurrence of novel products and services involvement in e-commerce are important

1.8 Limitation of the Study

The challenges the researcher faced was the financial aspect involved especially during the data collection phase and other activities related to the study however, with proper planning and self-organization, it was accoutered. Secondly the respondents might have ended up giving socially correct answers, where they were to respond to questions in a way viewed favorably by the researcher.

On the other hand, some respondents were concerned with their privacy and confidentiality of the information they were giving. This meant that they might have been worried that the information could be leaked, resulting to their harassment. To counter this, the researcher came up with a budget to enable her keep track of the expenditure, secondly the researcher assured the respondents of anonymity and confidentiality of the information given through the questionnaires.

1.9 Assumptions of the Study

It was assumed that the respondents in question were honest and responsive in their correspondence ensured true picture was captured.

1.10 Definitions of Significant Terms

Adoption of e-commerce is the innovation of conducting business online which cost-effective, with competitive advantage and ensuring sufficient resources and skilled-staff.

Cost of ICT- The technology, financial and human resources for instance computer, telephone cables and lines that show a very a big part in the adoption of new technologies.

E-commerce - Online trading of products, information and business procedures to cut cost and increase speed and quality of service delivery

Firm size- The scope of a company in each industry at a given time which results in the production costs per unit of productivity.

ICTs skills-The abilities which enable efficiency in functions of communication technologies and information to store, present, assess, retrieve, produce, exchange information, communicate and involvement in collaborative networks through the internet.

ICT Access-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.

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.

1.11 Organization of the Study

It captured, segments and appendices section carrying a list of all the relevant tables and figures were 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

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 this factors cannot be understated, this study uses Technology Acceptance Model.

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 will contain the presentation and interpretation of the findings arising from the analysis of data collected using the techniques spelled out in the previous

chapter three and the final chapter contain the summarized findings, discussions, resultant conclusion and recommendations arising from the research, it also contains the future research suggestions.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This focused on these areas; understanding of the independent variables, versus dependent variable in SMEs, theoretic literature review, conceptual framework, discussion of the research variables and then finally the research gap.

2.2 Cost of ICT and adoption of e-commerce

Smaller firms face Spartan straining on limited monetary and time resource, though the internet connection cost is falling and e-mail is becoming affordable to most companies, the mainframe software and hardware represent a significant investment for SMEs and their costs remain high, there is also a requirement for a substantial investment in training and time for employees to maintain a skilled workforce hence grand contribution remains a substantial investment costs(Lewis and Cockrill, 2012).

The cost internet and infrastructure has anegative effect on E-commerce development in evolving countries hence raising a competitive environment which is unnecessary regulatory framework due to prohibitive internet and infrastructure access.The cost of setting up an e-commerce cut across the budget of procuring hardware, software tools installation, telecommunication charges, preliminary planning, , training, continuous maintenance andservicing costs.OECD, (2004)

The monthly cost of Internet connectivity surpasses returns of certain percentage of the population.The price of internet accessibility determines the decisions to use internet and e-commerce. Accordingly to OECD, (2004)presence of a wide range of Internet connections allow users to choose different and appropriate services according to their precise needs and potentials from on-line activities and other communication services, rather at competitive prices like high internet cost the urge to improve the total on-line experience for both individuals and businesses ,and the need to explore more applications and spend more time on line is hindered therefore .

MacGregor (2011) alluded that high costs is an obstacle to e-commerce adoption, therefore SMEs would have to rely either on voluntary consultancy from higher education institution or the availability of government assistance and the fact that small businesses faces hitches obtaining finance as compared to larger firms has stand to be a great barrier to e-commerce adoption. High telephones and companies charges contribute to dismay Internet connectivity in 3rd world countries from ecommerce participation.

2.3 ICT skills and adoption of e-commerce

Lack of technical expertise including low computer literacy among employees and owner-managers leading to heavy reliance on external consultants to provide necessary proficiency is an aspect that affect E-commerce adoption in the SMEs yet reliance on external advice does not necessarily have to be from experts Another thing is that, small firms use short term ROI thus e-commerce is a long term and cynicism of IT industry (Scupola 2011)

According to Lapointe and Rivard (2005), There is lack of ICT expertise to manage and support e-commerce software adoption within Small Organizations. Additionally ,Internal Resistance is evident by perceived negative impact of the technology on existing IT infrastructure.Lack of awareness of technology and enabling environment is significant to technology adoption readiness in order to counter competition.

The success of adoption of a technology by organizations depends on the IT level of people within such organizations, People within an organization may resist the adoption of a technology due poor training or even lack of training on the same, which can prompt fear on security risk in using such technology and perceived job loss, or loss of control as a result of adoption of such technology(Bull, C. 2003).

Kurnia *et al.*, (2009) and Molla & Licker, (2005) asserts that decision to reject or accept E-commerce may come from entrepreneurs comfort of e-commerce applications and the external organizations or other business associates .An organization may be influenced to adopt a technology if owner-managers are equipped with skills on the

software applications and also if peer organizations are adopting the same to remain competitive.

2.4 Access to ICT and adoption of e-commerce

UNCTAD (2006) argues that web access in developing countries is principally restricted to e-mail communication and therefore many people continue to view the internet and its application as simply a medium for e-mail, faxing communication and web surfing, making majority of them not fully aware of other web-based applications in the global setting.

The absence of hardware at the organizational and at the individual level is a key barrier to accessing the Internet and involving in e-commerce. The presence of a suitable Internet infrastructure is a necessary but not appropriate condition for the development of e-commerce, the necessary infrastructure and deregulation need to be firmly in place. Oxley and Yeung, (2012) asserts that even with access to the necessary equipment, users can not become active ecommerce participants unless they have reasonable confidence in the integrity of transactions undertaken on- line.

2.5 Perceived benefits and adoption of e-commerce

Potential benefits have emotional impact on e-commerce adoption in an enterprise Reviewed literature shows that the larger the benefits perceived by the entrepreneur, the higher the possibility of ICT adoption. According to Beckinsale and Ram (2011), perceived benefits of ICT adoption often include focus on improving essential to finf new opportunities, business efficiency and operational effectiveness.

The past single physical marketplace located in a geographical area is now a borderless national and international markets facilitated by e-commerce, businesses now have right to use to all people, empowering people in developing Countries both in rural areas and urban centers to enjoy and access products, services, information and interact with other people which was not easily available to them in the past hence creating more business Connections from different locations of the world.(Schneider, 2011).

Businesses can use electronic commerce to increases the precision for exchange of information hence reducing the transaction costs such as costs of sales management,

determining availability of products, provision of price quotes and order-taking processes (Schneider, 2011).

2.6 Firm size and adoption of e-commerce

Bharati and Chaudhury (2006) carried out a study in the US and alluded that, firm size has a major impact on the kind of technology employed, argued that large firms have a high propensity to adopt quality systems due to their unlike small firms which are challenged by sufficient resources. Size of the firm is also a major aspect in determining external expertises advice, with the smallest firms least likely to seek external advice. Davies, (1979).E-commerce adoption is more credible in larger firms, the size of the firm determines the implantation of advanced technology such as business to business depending on the cost and risks of innovative activity in relation to existing technique

New organizations are flexible hence at ease to adopt new technology while old firms are rigid hence challenged by new technology. Financial level of a company determine the adoption of technology by a firm independent firms are often flexible in deciding whether or not to implement a technology but are always challenged by financial factors unlike dependent firms .

2.7 Theoretical Framework

Technology acceptance model explains how a computer improve performance of a job when completing a task. A person's subjective perception of the simplicity of using a computer system is referred to “Perceive ease of use” which distresses the perceived usefulness, and therefore having subsidiary effect on technology acceptance by the operator.

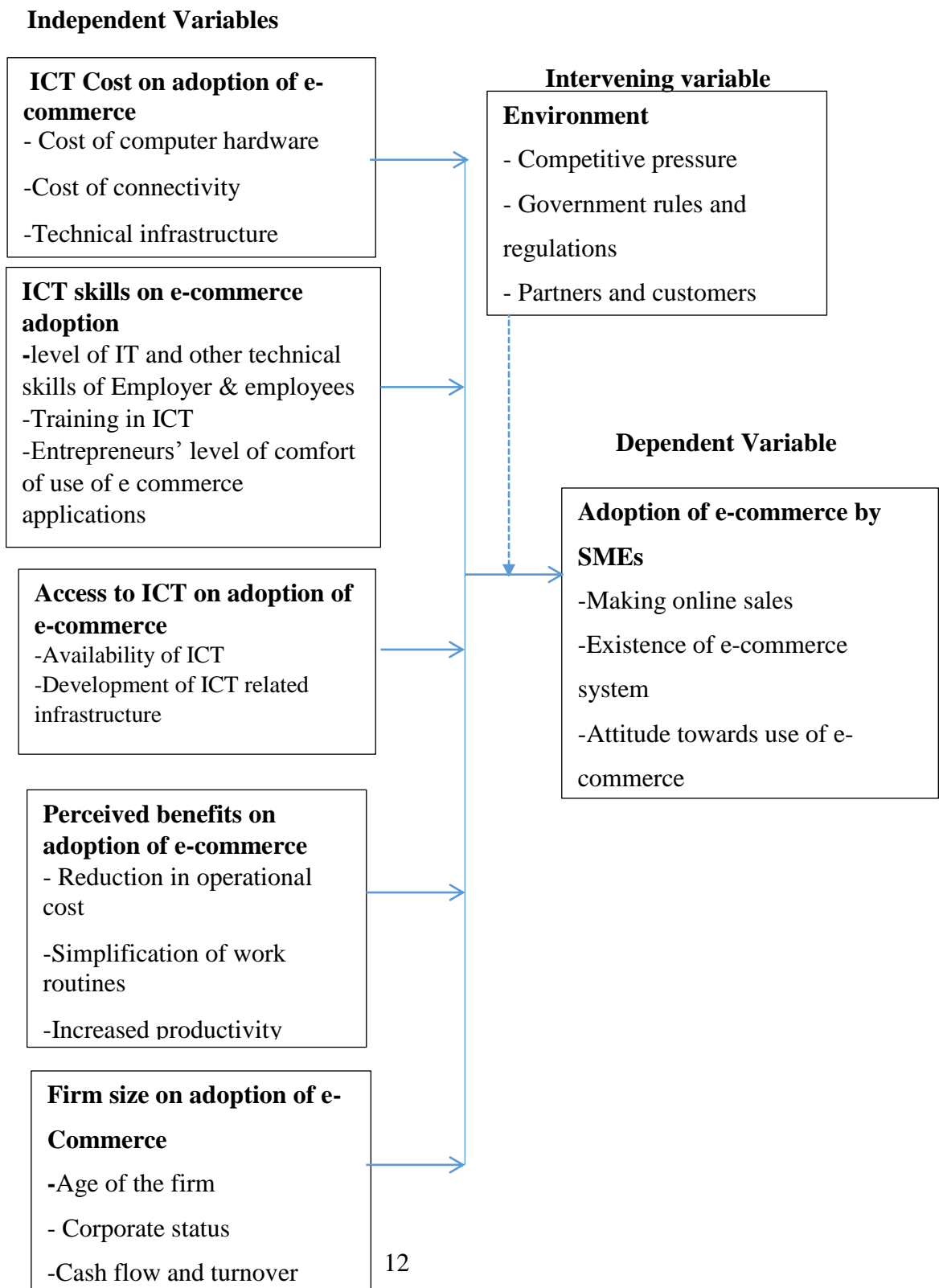
The TAM focuses on the attitude explanations of intention to use a specific technology or service and is a widely applied model for user acceptance and usage. Park (2009) 23 r The framework of behavioural intention, all the relationships among the TAM constructs were significant except parameter estimates from perceived usefulness, perceived ease of use, and system accessibility. Both perceived usefulness and perceived ease of use were found to be significant in affecting user attitude. Due to the natural limitations of the TAM model,

Venkatesh, Morris & Davis, (2003) and later Wu and Wang (2005) extended the model and developed the Unified (extended) Theory of Acceptance and Use of Technology (UTAUT) model by consolidating previous studies related to TAM. The UTAUT aimed at elucidation a user plans to use information systems (IS) and subsequent usage behaviour. The theory holds that four key constructs performance expectancy, effort expectancy, social influence, and facilitating conditions are direct determinants of usage intention and behaviour while gender, age, experience, and voluntariness of use act as controlling or moderating aspects that impact innovation adoption

Kholoud (2009), the degree to which an individual believes that using e-commerce will help them attain performance gains is the performance expectancy, while effort expectancy is the perceived amount of effort that the user needs to put into learning and operate e-commerce. Social influence, here, is the degree to which an individual perceives and facilitating conditions is the provision of support for users in terms of computer hardware and software necessity to work on e-commerce (Venkatesh *et. al.*, 2003). The model therefore is based on literature review and recommends that subsequent researches should focus on the empirical validation of the conceptual model.

2.8 Conceptual framework

Figure 2.1: Conceptual Framework



2.10 Summary of Literature Review

Information and Communication Technology can advance the key roles of small firms in all business levels developing businesses. SMEs can gain from developing advantages of intensive resources, handling information, enjoy condensed transaction costs, develop capacity for information gathering and distribution of international scale and gain access to rapid flow of information through use of information technology.

The efficiency of an organization can be improved through shared files and computer networks, evidence show that access to ICTs has a direct impact on improving the standards of living and quality of life of the general populace. Through growth and productivity indirect impact, has long been documented, on poverty alleviation, ICT adoption in SMEs can reduce operation cost by decreasing processing cost and improving the profitability of the company. The Internet technologies opportunities has forced many to think that the new technology will provide answers to challenges faced by developing countries.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

Classified the research design , highlights the target population, Sampling procedures, the methods of data collection , analysis and the measures undertaken to ensure the validity of data collected, and its reliability.

3.2 Research Design

Researcher conducted descriptive design in order to address research questions. This entailed both the qualitative and quantitative perspectives. The researcher visited the study area to obtain insights on the study. The type of study conducted by the researcher was descriptive, both quantitative and qualitative in nature which was able to address the research questions.

3.3 Target Population

This was 1569 small and medium enterprises (SMEs) owners/managers. The study population targeted the operators of small and medium enterprises in Kamukunji, Nairobi, Kenya.

3.4.1 Sample Size

A purposive sampling procedure involves the hand-picking of subjects on the basis of certain specific characteristics (Clothes Dealers, Furniture and Steel Makers, Food stuff sellers, Hardware dealers). Mugenda & Mugenda (2003), further defines a sample as definite part of a population that is a representation of the whole population. In this study, a simple random technique was used to select the sample. The sample Population for this study was 55 SME owners/managers operating Kamukunji industry. The sample was chosen using stratified method.

Table 3.1 Target Population

Categories	Target population	Sample size
Clothes Dealers	469	16
Furniture and Steel Makers	400	14
Food stuff sellers	334	12
Hardware dealers	366	13
Total	1569	55

3.4.2 Sampling Procedure

In order to carry out this study, a smaller group of 55 respondents was chosen from the total target population of 1569 people, by putting the sampling frame into four categories.

3.5 Data Collection Instruments

This study used the questionnaire as the main instrument of data collection due to its ability to collect large amount of information in a reasonably quick span of time and economic manner and its suitability to fit the quantitative approach which this study adopted,

3.5.1 Pilot Testing

This constituted 1 respondent per ward adding up to 6 respondents since Kamukunji constituency has 6 wards, this was selected using simple random sampling. After the piloting, the questions in the questionnaire assessed and those that were found not to be clear were reframed for clarity.

3.5.2 Validity of the instrument

Validity is the accuracy and meaningfulness of inferences constructed on research results. It is the point to which results obtained from the data analysis represent the variables of the study. The questionnaires were given to some professionals including my supervisor to assure construct validity of the instrument and critique it.

3.5.3 Reliability of Instruments

Measure of internal consistency ("reliability"), considered as the best to determine if the questions in the questionnaire is reliable. 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 items is deleted. This was an indication of the reliability of the items to measure the desired attribute.

3.6 Data collection Procedure

Researcher sought authorization from the University and the National Commission for Science Technology and Innovation (NACOSTI). Data collection involved a self-administered survey. The 55 questionnaires were universally distributed to the respondents distributed to the Respondents to fill in.

3.7 Data analysis Technique

According to Orodho, (2003) Findings were analyzed, presented in union with the objectives of the study so as to select the most accurate and quality information from the feedback by the various defendants. The report was produced both quantitative and qualitative data to explain the factors influencing adoption of E-commerce in Kamukunji Constituency. Returned questionnaires were coded and edited for completeness and consistency. Descriptive statistics and inferential analysis using statistical package for social science (SPSS) was employed to analyze the data.

3.8 Ethical issues

The researcher gave a written declaration to assure those concerned of their confidentiality and that the information given was used for purpose of learning and treated as such. The official letter from the university helped to instill confidence in the sources of data and therefore the letter was of utmost importance to the study.

3.9 Operational definition of variables

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. (Mugenda and Mugenda 2003)

Table 3.2: Operationalization of variables

Objectives	Types of variables	Indicators	Measurement Scale	Method of Data collection	Instrument/ data collection tool	Data analysis Technique
To examine cost of ICT Kamukunji constituency	Independent variable Cost of ICT Dependent variable Adoption of e-commerce	-Cost of computer hardware -Cost of connectivity -Technical infrastructure	Ordinal Ordinal Nominal	Administering questionnaires	Questionnaire Questionnaire	Frequencies and percentages
establish the influence of ICT skills on e-commerce adoption by the SMEs in Kamukunji constituency	ICT skills	-level of IT and other technical skills of Employer and employees -Training in ICT -Entrepreneurs' level of comfort of use of e commerce applications	Interval Ordinal Ordinal	Interviewing Interviewing Interviewing	Interview questionnaires Interview questionnaires Survey	Correlation analysis Frequency
To determine the influence of ICT access on e-commerce adoption by SMEs in Nairobi Kamukunji constituency	ICT access	-Availability of ICT -Development of ICT related infrastructure	Ordinal Nominal	Interviewing Administering questionnaires	Focus group discussion Survey	Frequency and percentages Frequency percentages
To establish the influence of benefits Kamukunji constituency	perceived benefits	-reduction in operational cost -Simplification of work routines -Increased productivity	Interval Nominal Ratio	Observation Interview Administering questionnaires	Checklist Questionnaire Questionnaire	Frequency And percentages
To survey the effect of firm size on adoption of e-commerce	perceived benefits	-Age of the firm - Corporate status -Cash flow and turnover	Nominal Ratio Interval	Administering questionnaire	Interview questionnaire	Percentages

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION AND INTERPRETATION

4.1 Introduction

Presents the major facts analysis techniques used in the study and findings and results of the application of the variables using descriptive and inferential statistics. Data was analyzed, results interpreted

4.2 Questionnaire return Rate

Data was collected from the SME's in Kamukunji Constituency. The sample of the study consisted of 55 respondents and 50 were returned and analyzed. This represents 90.9 % return rate.

4.3 Demographic

It established background information of respondents in terms of gender distribution, education level and Years on Service working within SME's

4.3.1 Gender Distribution

The researcher further established respondents' gender distribution. The results indicated in the Table 4.1

Table 4.1: Gender

Gender	Frequency	Percent
Male	33	66.0
Female	17	34.0
Total	50	100

Majority of 66% were male, 34% female as shown in Figure 4.1. This was a good distribution which depicts a fair balance of gender. Since majority of the responses for this study relies on the perceptual measures of the respondents, this gender distribution is expected to accommodate the opinions and views from both sides of the gender divide.

4.3.2 Level of Education of Respondents

The researcher also sought to establish the respondents' highest level of education. The results are as indicated in the Table 4.2.

Table 4.2 Level of Education of Respondents

Education Level	Percentage (%)
Trade	30
Secondary	28
Undergraduate	18
Primary	12
Postgraduate	4
None	2
Total	100

Majority (30%) held Trade certificate level of education while (28%) possess Secondary education level, 18% had undergraduate degree, 12% Primary Level, 8% had no formal education and 4% had a Postgraduate Degree as shown in table 4.2.

4.3.3 Years on Service in SME's

Table 4.3.

Table 4.3 Years of service working in SME

Years on service	Frequency	Percent
1-5 YEARS	27	54
6-10 YEARS	12	24
11-15 YEARS	7	14
ABOVE 16 YEARS	4	8
Total	50	100

For each respondent, the period of service working in SME's: 54% of the respondents indicated their having worked between 1 to 5 years, 24% indicated between 6 to 10 years, 14% indicated 11 to 15 years and another 8% indicated above 16 years.

4.4 Cost of ICT and Adoption of E-Commerce

Table 4.4 Cost of ICT

	N	Frequencies	Percentages	Mean	Std. Deviation
Cost of Computer Hardware	50	50	100	3.4400	.51834
Cost of Internet connectivity	50	50	100	3.1400	.55860
Aggregate Score	50	50	100	3.2900	.563675

From the findings, respondents agreed that; cost of computer hardware (mean 3.44), and cost of internet connectivity (mean 3.14) an aggregate mean of 3.29.

4.5 ICT Skills and Adoption of e-commerce

Table 4.5 ICT Skills

	N	Frequencies	Percentages	Mean	Std. Deviation
Level of ICT Skills	50	50	100	3.6400	.54321

Training	50	50	100	3.8400	.56832
People ability	50	50	100	3.8400	.52943
Operational capability	50	50	100	3.900	.53240
Application skills	50	50	100	3.3400	.51123
Aggregate Score	50	50	100	3.712	.54334

The respondents agreed that ICT Skills have been integrated into SME's e-commerce adoption with the Level of ICT skill (mean = 3.64), Training (mean = 3.84), People ability (mean = 3.84), operational capability (mean = 3.900) and application skills (mean = 3.3400)

4.6 ICT Access

Table 4.6 ICT Access

	N	Frequencies	Percentages	Mean	Std. Deviation
Accessibility	50	50	100	3.6600	.76990
ICT Infrastructure	50	50	100	3.3000	.55701
Aggregate Score	50	50	100	3.4800	.58605

From table 4.6, the responses ranged between 2 and 5 on ICT accessibility while ICT infrastructure responses between 1 and 5. From the study, the respondents agreed that ICT access (mean = 3.66) while ICT infrastructure (mean = 3.3) are factors of ICT access

4.7 ICT Benefits and adoption of e-commerce

Table 4.7 ICT Benefits

	N	Frequencies	Percentages	Mean	Std. Deviation
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Operation costs	50	50	100	3.4800	.45854
Simplification	50	50	100	3.8200	.45555
Customer satisfaction	50	50	100	3.7800	.44752
Development of new products	50	50	100	3.6000	.43700
Marketing	50	50	100	3.5200	.45620
Communication	50	50	100	3.7000	.44761
Aggregate Score	50	50	100	3.6500	.4496525

The response to these factors ranged from 1 to 5. The respondents agreed that operational cost (mean = 3.48), Simplification (mean = 3.82), Customer satisfaction (mean = 3.78), development of new products (mean = 3.60), Marketing (Mean = 3.52) and Communication (mean = 3.70)

4.8 Firm Size and Adoption of e-commerce

Table 4.8 Firm Size

	N	Frequencies	Percentages	Mean	Std. Deviation
Age of the Firms	50	50	100	3.7200	.54321
Effects	50	50	100	3.3400	.56832
Cash Flow	50	50	100	3.4000	.52943
Aggregate Score	50	50	100	3.4867	.54334

The respondents agreed that firm size has an effect on ecommerce development with the age of the firm (mean = 3.72), effects (mean = 3.34) and cash flow (mean = 3.40) as shown in Table 4.8.

4.9 Adoption of e- commerce

Table 4.9 Adoption of e- commerce

	N	Frequencies	Percentages	Mean	Std. Deviation
Making online Sales	50	50	100	3.7400	.47308
Existence of e-commerce	50	50	100	3.6600	.44767
Attitude towards use of e-commerce	50	50	100	3.700	.41780
Aggregate Score	50	50	100	3.700	.43107

The responses to the statements on making online sales, existence of e-commerce and attitude towards e-commerce 1 and 5. These responses were presented by a mean of 3.74, 3.66, and 3.70 respectively with an aggregate mean of 3.7.

4.10 Regression Analysis

The variables have a curvilinear relationship thus requiring use of analysis of variance (ANOVA) to develop a predictive model. From the correlation matrix, regression

analysis was carried out to develop a model showing the relationship between e-commerce components (independent variables) and adoption of e-commerce in SME's (dependent variable).

4.10.1 Model Summary

Table 4.10 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.350	.122	.079	.45397	1.547

From the model summary, 12.2%

4.10.2 Analysis of Variance – ANOVA

Analysis of variance determines whether mean scores of the independent variables within SME's differ significantly from each other. It also determines whether the various variables interact significantly with each other.

Table 4.11 ANOVA for Overall e-commerce adoption

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	2.330	2	.582	2.826	.030
	Residual	16.693	47	.206		
	TOTAL	19.023	49			

The ANOVA was derived from the correlation matrix and was computed by way of dividing the established variations of the group averages by the expected variations. As can be observed in table 4.11 of the Analysis of variance (ANOVA) for regression coefficients.

CHAPTER FIVE

SUMMARY OF FINDINGS, DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

It sought to investigate the factors influencing adoption of electronic commerce within SME's in Kamukunji Constituency Nairobi Kenya. The conclusion relates directly to the objectives/research questions and the recommendations were deduced from discussion and conclusion.

5.2 Summary of Findings

The explored the factors influencing adoption of e-commerce within SME's at Kamukunji Constituency in Nairobi Kenya. The study made inference on the research hypotheses that; cost of ICT, ICT skills, access to ICT, perceived benefits and firm

size have no significant. Study had 0.122 R². This means that 12.2% variation on adoption of e-commerce is explained/ predicted by joint contribution of cost of ICT, ICT skills, access to ICT, perceived benefits and firm size. From the study findings, it can be concluded that, majority of the SME's in Kamukunji Constituency have adopted e-commerce in SME's.

5.2.1 Cost of ICT

Research findings revealed that cost of ICT has a positive and significant (aggregate Mean= 3.29). From the findings cost of ICT influenced the e-commerce development in Kamukunji Constituency. On overall, majority of the respondents with an average percentage rated all cost of ICT factors as influencing adoption of e-commerce from a strongly agree to strongly disagree. Study therefore, concluded that factors such as cost of computer hardware and cost of internet connectivity influenced how cost of ICT influenced adoption of e-commerce in Kamukunji Constituency, Nairobi County Kenya.

5.2.2 ICT knowledge and skills

The study sought to find out the level of ICT skills influenced adoption of e-commerce in Kamukunji Constituency, Nairobi County Kenya. From the findings, the respondents agreed that ICT skills have been integrated into the SME's and has a constructive influence on adoption of e-commerce with an aggregate mean of 3.71.

5.2.3 ICT access

The research investigates the level of ICT access in SME's influenced adoption of e-commerce in Kamukunji Constituency, Nairobi County Kenya. From the findings, the respondents indicated that ICT access affected the SME's, an aggregate mean of 3.48 which in turn had great influence on overall adoption of e-commerce in SME's in Kamukunji Constituency.

5.2.4. Benefits

The study sought to find out the scope to which benefits influenced adoption of e-commerce within SME's in Kamukunji Constituency, Nairobi County Kenya. From the findings, respondents indicated that perceived benefits influenced adoption of e-

commerce within SME's in Kamukunji Constituency, Nairobi Kenya with an aggregate mean of 3.65.

5.2.5. Firm Size and e-commerce adoption

The study sought to find out the magnitude to which firm size influenced adoption of e-commerce within SME's in Kamukunji Constituency, Nairobi County Kenya. From the findings, respondents indicated that firm size influenced adoption of e-commerce within SME's in Kamukunji Constituency, Nairobi Kenya with an aggregate mean of 3.49.

5.3 Discussions of the Findings

The study discover the factors influencing e-commerce implementation within SME's in Kamukunji Constituency, Nairobi Kenya. The purpose of discussion was to look at the findings of the study, compare the findings with what has been found out by other researchers and presented arguments for the findings based on what was discovered during literature review.

5.3.1 Cost of ICT and adoption of e-commerce

Research findings revealed an aggregate Mean= 3.29. Lewis and Cockrill, (2012) a significant investment for smaller companies is evident by competitive workforce brought about by technical training and time for employees ,imposing a stark strain on the limited time and monetary resources of small firms, mainly those lagging behind larger firms.

5.3.2 ICT skills on adoption of e-commerce

From findings, the respondents agreed that ICT knowledge and skills have been integrated into the SME's with an aggregate mean of 3.71.computer illiteracy and expertise has a negative impact on internet and e-commerce adoption

5.3.3 Access to ICT and e-commerce adoption

From the findings the respondents indicated that, access to ICT influenced the adoption of e-commerce of SME's with an aggregate mean of 3.48 which in turn influence

overall implementation of e-commerce within SME's in Kamukunji constituency, Nairobi Kenya. These unique characteristics affect internet technologies adoption in SMEs in Africa.

5.3.4. ICT Benefits

From the findings, respondents asserted, ICT benefits influenced adoption of e-commerce within SME's in Kamukunji constituency, Nairobi Kenya with an aggregate mean of 3.65. In conformity with the findings, Line with findings of the study, a study by Schneider, (2011) found out that companies using new technology in their sales reduce their costs of business operations.

5.3.5. Firm Size and adoption of e-commerce

From the findings, respondents indicated that firm size influenced adoption of e-commerce within SME's in Kamukunji constituency, Nairobi Kenya with an aggregate mean of 3.49. In conformity with the findings

5.4 Conclusions of the Study

Majority of the businesses have ICT knowledge and skills. Most of them are trained up to Trade level. This shows that they are not adequately trained. It was found out that acquiring skills plays a big part in the e-commerce adoption by enterprises. Training enables one to use and adopt e-commerce and that most people know how to use the computers. From the findings, the respondents agreed that ICT skills have been integrated into the SME's and has an aggregate mean of 3.71.

Majority of the businesses have access to ICT, that they are able to access internet and use mobile phone. The challenge is that acquiring computer and access to internet is costly that is why we have other businesses who are not able to access internet. The cost of connectivity, maintenance and web design construction is too high. The coverage by internet service providers was found to be very good. Findings indicated that perceived benefits influenced adoption of e-commerce within SME's in Kamukunji Constituency, Nairobi Kenya with an aggregate mean of 3.65.

5.5 Recommendations of the Study

SME's in Kamukunji constituency need to incorporate all the e-commerce components into the system. This will enhance improved e-commerce adoption in their firms. The SME's need to find out ways of encouraging employees to make use of e-commerce systems. If employees are encouraged to use the e-commerce, adoption of the same will greatly improve. It is therefore recommended that policy makers, managers of SME and the practitioners ought to come up with strategies and program to overcome challenges faced in the adoption of e-commerce in their business as well as to ensure efficiency, effectiveness and high productivity in their businesses. In summary, the government of Kenya should embrace policies on Information and Communications Technology named e-procurement and integrated financial and management information system, all considered to be a drivers of innovation strategy action.

5.6 Further Research suggested areas

The findings emphasized the importance of the e-commerce technology within small and medium enterprises in Kamukunji constituency, Nairobi Kenya. Future research will need to be carried in other areas within small and medium enterprises and counties to confirm if the relationship between e-commerce components and SME's can be generalized. Further studies on challenges of adoption of e-commerce and their remedies should be carried out.

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APPENDIX I: INTRODUCTION LETTER

Dear respondents,

RE: REQUEST FOR ASSISTANCE IN FILLING QUESTIONNAIRES

I am Master of Arts (project planning and management) student at the University of Nairobi undertaking research on Factors influencing adaption of e-commerce at the Kamukunji constituency, Kenya

I have designed this questionnaire to get your response on the issues related on this topic. It will be my pleasure if you spend few minutes to fill this questionnaire. Your response is very important and will enable me to make proper analysis of the research. Your response will be treated confidentially and will remain anonymous. I kindly request you to complete this questionnaire honestly.

Thank you for your cooperation.

Wilter Chepngeno.

APPENDIX II: QUESTIONNAIRE

Instructions

This questionnaire is an attempt to establish the Factors influencing the adoption of electronic commerce by the small and medium enterprise of Kamukunji constituency, Kenya Please answer the questions honestly and diligently following the instructions given. The answers you give will be used for the research purpose only and your identity will be treated confidentially.

Section A: Bio-data

1. Gender Male [] Female [] **(Tick as Appropriate)**
2. Age (Years) 20-25 [] 26-30 [] 31-35 [] 36-40 [] 41-50 []
51 years and above []
3. Level of Education None [] Primary [] Secondary [] Trade/Technical qualification [] Undergraduate [] post graduate
4. Years of service 0-5 [] 5-10 [] 10-15 [] Over 15+ []

Section B: FACTORS INFLUENCING ADOPTION OF ELECTRONIC COMMERCE WITHIN SMALL AND MEDIUM ENTERPRISES IN KENYA,

PART A: Cost of ICT on adoption of e-commerce

Please indicate the extent to which Cost of ICT factors influence e-commerce. Use a scale of 1-5, 5=strongly agree, 4= Agree, 3=Neutral, 2=disagree, 1=strongly disagree

Statement	1	2	3	4	5
High cost of computer hardware has a negative influence on adoption of e-commerce					
The cost of internet connectivity is affordable to SMEs in kamukunji					

PART B: ICT knowledge and skills on adoption of e-commerce

Please indicate the extent to which ICT Knowledge factors influence e-commerce. Use a scale of 1-5, 5=strongly agree, 4= Agree, 3=Neutral, 2=disagree, 1=strongly disagree

Statements	1	2	3	4	5
E-commerce project requires considerable level of ICT skills					
Without training of the human resources on the ever changing technology adoption of e-commerce will be hampered					
The ability to configure, operate and maintains a system is a critical success factor and this depends on people.					
The Adoption of e-commerce depends on the ICT skills of people operating it					
Entrepreneurs are comfortable with use and applications of e-commerce					

PART C: ICT access on adoption of e-commerce

Please indicate the extent to which ICT access factors influence e-commerce. Use a scale of 1-5, 5=strongly agree, 4= Agree, 3=Neutral, 2=disagree, 1=strongly disagree

Statement	1	2	3	4	5
Accessibility and availability of ICT is effective for adoption of e-commerce.					
SMEs have successfully develop ICT and related Infrastructure					

PART D: Perceived benefits on adoption of e-commerce

Please indicate the extent to which Perceived benefits factors influence e-commerce. Use a scale of 1-5, 5=strongly agree, 4= Agree, 3=Neutral, 2=disagree, 1=strongly disagree

Statements	1	2	3	4	5
The adoption of e-commerce enhances reduction of operation cost					
E-commerce allow simplification of work routines					
E-commerce improve customer satisfaction					
Adoption of e-commerce lead to development of new products					
E-commerce Improve marketing					
E-commerce Improve communication					

PART E: Firm size

Please indicate the extent to which Firm size influence e-commerce. Use a scale of 1-5, 5=strongly agree, 4= Agree, 3=Neutral, 2=disagree, 1=strongly disagree

Statement	1	2	3	4	5
Adoption of e-commerce is affected by the age of a firm in an SME					
E-commerce adoption has an effect on the Corporate of your organization					
SMEs with strong cash flow and turn over find it easier to adopt e-commerce					

PART E: Adoption of e-commerce

Please indicate the extent to which Firm size influence e-commerce. Use a scale of 1-5, 5=strongly agree, 4= Agree, 3=Neutral, 2=disagree, 1=strongly disagree

Statement	1	2	3	4	5
Online sales has been carefully designed to meet organization business requirement					
SMEs in Kamukunji constituency have adopted e-commerce system					
Both Sellers and buyers have positive attitude towards e-commerce					

THANK YOU FOR YOUR PARTICIPATION