

**INFLUENCE OF INFORMATION COMMUNICATION
TECHNOLOGY ON MANAGEMENT OF TRADING
BUSINESSES IN AINAMOI SUB-COUNTY, KERICHO COUNTY,
KENYA**

BY

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DECLARATION

This research project is my original work and has never been presented for the award of any degree in any other University.

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

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DEDICATION

I dedicate this project to my parents, Mr. Stephen Ruttoh and Mrs. Alice Ruttoh for offering me financial and moral support.

ACKNOWLEDGEMENT

I acknowledge the efforts of my supervisor, Mr. Awino Joseph who guided me through the carrying out of my project right from topic selection to final defense. He also deserves credit, being the resident lecturer, for ensuring that the program was carried out successfully by availing the required facilities in time.

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TABLE OF CONTENTS

TITLE	PAGE
DECLARATION	i
DEDICATION	ii
ACKNOWLEDGEMENT	iii
TABLE OF CONTENTS	iv
LIST OF FIGURES.....	viii
LIST OF TABLES	ix
LIST OF ABBREVIATIONS AND ACRONYMS	xi
ABSTRACT	xii

CHAPTER ONE

INTRODUCTION

1.1 Background of Study.....	1
1.2 Statement of The Problem.....	7
1.3 Purpose of The Study.....	8
1.4 Objectives of The Study.....	8
1.5 Research Questions.....	9
1.6 Significance of the Study.....	9
1.7 Limitations of The Study.....	10
1.8 Delimitation of The Study.....	10
1.9 Basic Assumptions of The Study.....	10
1.10 Definition of Significant Terms as Used In The Study.....	11
1.11 Organization of The Study.....	11

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction.....	13
2.2 Concept of Organization Management.....	13
2.3 Marketing Management.....	14
2.4 Accounts Management.....	16
2.5 Human Resource Management.....	17

2.6 Security Management.....	19
2.7 Theoretical Framework.....	20
2.8 Conceptual Framework.....	23
2.9 Gaps in Literature Review.....	24
2.10 Summary of Literature.....	25

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction.....	27
3.2 Research Design.....	27
3.3 Target Population.....	27
3.4 Sample Size and Sample Selection.....	28
3.4.1 Sample Size.....	28
3.4.2 Sample Selection.....	28
3.5 Data Collection Instruments.....	29
3.5.1 Pre-Testing of data Collection Instruments.....	29
3.5.2 Validity of data Collection Instruments	29
3.5.3 Reliability of data Collection Instruments	29
3.6 Procedure Of Data Collection.....	30
3.7 Methods Of Data Analysis	30
3.8 Operational Definition of Variables.....	31
3.9 Ethical Considerations.....	32

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION AND PRESENTATION

4.1 Introduction.....	34
4.2 Response Rate.....	34

4.3 Bio-data Information of Respondents.....	34
4.3.1 Distribution of Respondents by Age.....	35
4.3.2 Distribution of Respondents by Gender.....	35
4.3.3 Respondents' Level of Education.....	36
4.3.4 Respondents Training on ICT.....	36
4.4 Adoption of ICT by Respondents.....	36
4.4.1 Mode of Communication.....	37
4.5 ICT and Human Resource Management.....	38
4.5.1 Number of Employees.....	38
4.5.2 Advertising for Job Vacancies.....	39
4.5.3 Keeping of Employee Records.....	39
4.5.4 Employee Training.....	40
4.6 ICT and Accounts Management.....	40
4.6.1 Keeping of Business Records.....	40
4.6.2 Carrying out Accounting Practices.....	41
4.7 ICT and Marketing Management.....	44
4.7.1 Marketing Methods.....	44
4.7.2 Presence of Business Website.....	45
4.7.3 Market Research.....	46
4.8 ICT and Security Management.....	47
4.8.1 Methods of Storage of Information.....	47
4.8.2 Payment of Transactions.....	48
4.8.3 The use of CCTVs in Business Premises.....	50
4.9 Respondents Perception on the Influence of ICT on Business Management	50

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction.....	52
5.2 Summary of the Findings.....	52
5.3 Conclusions of the Study.....	54
5.4 Recommendations.....	56
5.5 Suggestions for Further Studies.....	57
5.6 Contribution to the Body of Knowledge.....	57

REFERENCES.....	59
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APPENDICES

APPENDIX I: QUESTIONNAIRE.....	68
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LIST OF FIGURES

Figure 1: Conceptual Framework.....	24
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LIST OF TABLES

Table 3.1: Operational Definition of Variables.....	31
Table 4.1: Response Rate.....	34
Table 4.2: Distribution of Respondents by Age.....	35
Table 4.3: Distribution of Respondents by Gender.....	35
Table 4.4: Respondents' Level of Education.....	36
Table 4.5: Adoption of ICT by Respondents.....	37
Table 4.6: Mode of Communication used by Respondents.....	38
Table 4.7: Number of Employees Employed.....	38
Table 4.8: Advertising for Job Vacancies.....	39
Table 4.9: Keeping of Employee Records.....	39
Table 4.10: Employee Training.....	40
Table 4.11: Keeping of Business Records by Respondents.....	41
Table 4.12: Mode of Record Keeping.....	41
Table 4.13: Mode of Carrying out Accounting Practices.....	42
Table 4.14: Mode of carrying out calculations.....	42
Table 4.15: Speed of Retrieval of Information.....	42
Table 4.16: Reconciliation of Accounts.....	43
Table 4.17: Accuracy in Calculations.....	43
Table 4.18: Speed of Calculations.....	44
Table 4.19: Marketing Methods used by Respondents.....	44
Table 4.20: Speed of Online Selling compared to other methods.....	45
Table 4.21: Volume of Sales in Using online selling.....	46
Table 4.22: Methods of Carrying out Market Research.....	46
Table 4.23: Methods of Storage of Information.....	47

Table 4.24: Mode of payment for Transactions.....48

Table 4.25: Security of the Mode of payment used.....49

Table 4.26: Speed of payment using various methods.....49

Table 4.27: The use of CCTVs by Respondents.....50

Table 4.28: Respondents’ views on Effects of ICT on Business Performance.....51

LIST OF ABBREVIATIONS AND ACCRONYMS

CCTVs : Closed Circuit Televisions

HR : Human Resource

ICT : Information Communication Technology

IT : Information Technology

MAS : Management Accounting System

SMEs : Small and Medium sized Enterprises

SPSS : Statistical Package of Social Sciences

ABSTRACT

This research project aimed at investigating the Influence of Information Communication Technology (ICT) on management of trading businesses in Ainamoi sub-county. Researches done in various countries by different researchers show that there is positive correlation between the use of Information Communication Technology and Business Management. The study was guided by the objectives: to determine the influence of Internet use, use of computer Application Software , use of mobile phones and CCTV use on management of trading businesses in Ainamoi Sub-County. The Literature of how various business owners and managers in the world have adopted the use of ICT and the influence that ICT has had on the management of these businesses was captured. This study adopted a descriptive survey design. Khan, (1993) recommends descriptive survey design for its ability to produce statistical information about aspects of education that interest policy makers and researchers. The target population in Ainamoi Sub-county was 1936 entrepreneurs. A sample of 332 entrepreneurs was selected using a stratified sampling whereby the Ainamoi Sub-County was subdivided geographically into 4 different centers (strata) and specific number of entrepreneurs selected randomly from each stratum (center). 200 entrepreneurs were selected from Kericho town, 82 from Nyagacho, 25 from Brooke and 25 from Ainamoi Market. The data was collected from the sample by way of questionnaires. The researcher framed the questions in the questionnaire in such a way as to capture the required information which clearly reflected the influence of ICT on Business management. The findings were therefore compiled and computations done where applicable. These were used to draw conclusion on the research and recommendations made so that if possible, the business managers may act accordingly. The results brought out a true picture of how Information Communication Technology has been employed and its influence on business management. The findings revealed that many Entrepreneurs have not adopted ICT devices except mobile phone whose adoption is 100%. Many of the respondents use traditional methods like books in keeping records, newspapers and posters in advertising, calculators and manual system in calculations, and cash system of payment for transactions. Business owners have been advised to adopt the use of ICT in their businesses to improve performance in management and to increase profitability.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

The question of the significance of ICT for business and society is not only an economic issue; it is just as important in a business management context. Information and communication technologies not only play an essential role for entire industries and sectors, they are equally important within individual enterprises. In addition to energy saving technology, businesses employ new technology in their management by monitoring the movements of employees using Closed Circuit Televisions (CCTVs) and ensuring maximum security of their premises by applying the use of the same technology. Management Accounting Systems (MAS) helps in the management of finances by ensuring that the transactions are properly recorded and computations done accurately. This enables the faster processing of accounting data and ensuring maximum security of the information.

Globally, the Internet economy contributes more to GDP than does the nation of Germany. The Internet's economic effects can lift even mature economies; with a projected average 8% sector growth in the G-20's developed markets through 2015. Growth is particularly fast for developing economies, where mobile technology and Internet enabled services are being rapidly adopted as a substitute for poor fixed-line infrastructure.

Services that the ICT offers to German Businesses are: Manage Customer information; Manage Staff information; Manage Product information; Manage Sales information; Manage Returned product; Manage Feedback; and Manage Reports. In Business, customer is an epicenter of every company to succeed. Sales bring money and thus increase the company's Measurable Organization Value (MOV), Product or Service is to be sold and for all these to be done Staff is needed. The information concerning all elements above need to be kept properly, in secured and organized way.

A study by LIFE 2 on Germany, United Kingdom and United States of America shows that a total of 79 percent of the executives rate the strategic importance of ICT for the success of their company as very high or high; in the United Kingdom it is 87 percent and 77 percent in

Germany, or slightly more than three-quarters of the participants. For the future the ICT executives expect the importance of ICT to rise even further: Internationally, around 84 percent of the surveyed executives state that they expect the strategic relevance of ICT to increase strongly in their company in the next five years.

The future importance of ICT is rated as being particularly high in research & development, logistics, and customer services. In total, 70 percent of the ICT executives believe that ICT will play a very important role in R&D in the future; 66 percent of the executives believe that ICT will play a very important role in the two corporate areas logistics and customer services.

Against this background, with the importance of ICT rising steadily, it comes as no surprise that six out of ten ICT executives (58%) expect a strong increase in their company's IT budget. Three in ten (33%) expect budgets to remain unchanged. Only nine percent of ICT executives expect budgets to be cut.

ICT executives believe that the greatest influence that ICT will have on their enterprise's ability to remain competitive in the future will be by increasing performance (72%) and achieving cost savings (70%) through ICT, as well as knowledge management (69%). In this connection, the participants of the think tank noted that the debate on building competitiveness must not be limited purely to cost-savings and exploiting the cost-cutting options that are available, and neither should ICT be limited to the status of a tool for reducing costs. At the heart of competitive skills and ability lies the enterprise's innovative capabilities and these are often also the result of its use of ICT.

IBIS World predicts that 13 out of Australia's 19 industry sectors will be either transformed or derive significant benefits from ICT by 2050. Public administration and safety, retail, mining, health care and social assistance, professional, scientific and technical services, education and training, and transport, postal and warehousing industries will be among the key beneficiaries. Approximately 461,000 workers are employed in Australia's ICT sector contributing to 4.1 percent of the total workforce. The demand for ICT skills is expected to increase over the next five years and Australia's ability to meet this demand through the supply of ICT skills will be vital to innovation and productivity.

The ICT in Australia is applied in working with users to formulate and document business requirements; identifying, investigating, and analysing business processes, procedures and work practices; identifying and evaluating inefficiencies and recommending optimal business practices, and system functionality and behavior; using project management methodologies, principles and techniques to develop project plans and to cost, resource and manage projects; taking responsibility for deploying functional solutions, such as creating, adopting and implementing system test plans, which ensure acceptable quality and integrity of the system; creating user and training documentation, and conducting formal training classes; developing functional specifications for use by system developers; using data and process modeling techniques to create clear system specifications for the design and development of system software; and acting as a central reference and information source, providing guidance and assistance in the system project decision making process.

According to Dalberg's survey carried out at Ghana, Senegal and Nigeria, more than 80% of SME owners expect that the Internet will help them grow their business, and 70% of those expect to hire new employees as a result. Historically, Internet applications have focused on marketing and communications, but solutions focused on service delivery are on the rise. A Dalberg review of Internet-enabled solutions across the three countries found that Internet-enabled solutions developed within the past three years are increasingly focused on service delivery and information management.

This figure has increased from 17% to 24% of total use cases over the past six years suggesting that new organisations are focusing on increasingly sophisticated uses for the Internet versus organizations that have used the Internet for a while. According to the study, management and operations are not amongst the Internet-based applications, but across sectors, surveyed SMEs consistently cited the Internet for its usefulness in addressing management challenges. These include payroll, information management, and backend systems—where key informant interviews suggest a short-term prioritisation would unlock significant growth.

More than half of firms cited in the survey related services in supply chain management as driving current impact. Cost savings from enterprise systems, for example, have delivered 30% savings for national health insurance schemes. Despite their reported usefulness, enterprise systems receive little attention from policymakers and donors who tend to focus on user facing

solutions such as mobile phone technologies. According to an International Telecommunications Union (ITU) Report in 2013, Africa was the fastest growing region in terms of mobile broadband including 93 million subscriptions, 11% penetration and an 82% Cumulative Annual Growth Rate (CAGR) between 2010 and 2013.

The ICT industry according to Isoun, (2003) appears to be making significant in road into the Nigeria society. Prior to 1999, ICT resources and facilities were grossly limited in the country. Only very few wealthy Nigerians had access to these facilities and services. Internet facilities and services were rare to come by and the facsimile (ie. Fax) remained for a long time, the only means available to Nigerians for transmitting and receiving data or documents to other parts of the world. Public awareness of ICT and its application was low.

But now, the picture is entirely different. Huge investments have been made by both the public and private sectors in the ICT business in the country. Within the last three (3) years, the country has witnessed tremendous expansion in ICT resources and facilities. A significant milestone in the development of the ICT industry in the country is the formulation of a National Information Technology Policy (NITP), which was approved in March, 2001 by the Federal Executive Council. With the enactment of this policy came the establishment of an implementing agency- the National Information Technology Development Agency (NITDA) in April 2001. This agency is charged with the responsibility of implementing Nigeria 's IT policy "as well as promote the healthy growth and development of the IT industry in Nigeria (Isoun, 2003).

According to Shokane (2003), however, despite the existence of these interventions to facilitate access to business information in South Africa - and the fact that information has been recognised as an important resource to use in modern business - there is still an apparent lack of, and need for, information by business entrepreneurs. In most areas of South Africa, there is also a heavy reliance on business colleagues, friends and relatives as sources of information. This situation is, apparently, attributed to a lack of systematic information skills on the part of business managers and insufficient knowledge or no knowledge of the true information needs of business managers on the part of information specialists (Shokane 2003).

An Analysis of the Role of ICTs to achieving the Millennium Development Goals by Professor Clement Dzidonu, President, Accra Institute of Technology (AIT) found out that Nigeria in 2000

developed its national information technology (IT) policy, with the vision to make Nigeria an IT capable country in Africa and a key player in using IT as the engine for sustainable development and global competitiveness. The Government in its policy document recognizes IT as a strategic imperative for national development and has resolved to provide considerable national resources, both financial and otherwise for the realization of the National IT Vision statement.

The Nigerian IT Policy Framework targeted a number of strategic areas for implementation, the key ones are: Human Resource Development; Infrastructure Development; Governance; Research and Development (R&D); Health; Agriculture; Urban and Rural Development; Trade and Commerce; Fiscal Measures; Government and Private Sector Partnerships; Arts, Culture & Tourism; National Security and Law Enforcement; Legislation; IT Popularization and Awareness. Some of the specific strategies targeted for implementation include: Establishing a coordinated program for the development of a National, State and Local

In East Africa, the telecom companies of Safaricom, MTN Uganda and Zain are offering financial services of sending and receiving domestic and international payments. Safaricom alone serves more than seven million users with an agent's network that exceeds the total number of bank branches in Kenya (Kinyanjui, 2009).

In Uganda, commonly used information and communication technologies (ICTs) include management information systems (MIS), personal digital assistants (PDA), automated teller machines (ATMs), mobile phones, and smart cards (Ssewanyana, 2008). MIS is important to MFIs as it is the back office and backbone of any ICT innovation for microfinance services, as it can effectively support loan portfolio, transactions, operational growth, decision making, transparent and quality services to the client, time management, and increased outreach (Turaga, 2004). PDAs also can help MFIs to save time on micro lending, lower operational costs, reduce human errors, allow loan officers to increase outreach, reduce paper work, and standardize credit processes (Turaga, 2004).

A study by Olaf Nielinger (2003) on "ICT-utilisation of Small and Medium Enterprises (SME) in Tanzania" shows that an overall diffusion of almost 90%, either fixed line, mobile or public access, underlines the importance of the telephone. Furthermore, there is a remarkable disproportion in the availability of fax and email and their actual usage. 36% of the enterprises

have access to a fax-machine and one-third have access to email. However, both means account for only 10% or 9% of total business correspondence, leaving outstanding 81% of business correspondence to traditional, non-electronic means.

On the significance of individual Technology, 60% of respondents recognized the telephone and 38% the cell phone as 'very significant' or 'significant'. Computer based applications are led by email (28%), then come other computer applications (25%) and last is the World Wide Web with 12%. Interestingly, responses referring to an 'average' or 'less significance' decrease as overall responses decrease, too. While about 10% or 5% regard the telephone or the cell phone to be less important, email and computer based applications count only 1-2% of indistinctive answers and the World Wide Web counts even none.

With the advent of e-business, many businesses in the world have been able to compete in the global markets regardless of language, cultural barriers, physical distance and national boundaries since products, services and transaction processes can be re-engineered to adjust to changing business environment. E-business has evolved through the basic e-mail and electronic data interchange of the past few years to the sophisticated web-based interactive systems today.

E-money has also played a key role in the transfer of money since payment of transactions can be done promptly without delay. An example of e-money in Kenya is the "M-pesa" and "Orange Money" offered by Safaricom and Orange service providers respectively. Internet and e-commerce which have been responsible for the continued gradual removal of barriers of language, culture and national boundaries will help in globalization and acceleration of international trade. International organizations like the World Trade Organizations (WTO) are already spearheading the policy and regulatory issues in the international scene particularly in the e-commerce environment to reach globalization vision.

A study by Muathe Stephen Makau A, Nelson H. Were Wawire and Gorretty A. Ofafa on the relationship between organizational factors and adoption of ICT among health related SMEs in Nairobi shows that ICT is most widely used in: marketing development (5.72), inventory tracking (5.72), strategic planning purposes (5.35), external communication (5.25), internal communication (5.12), purchasing and supplies (4.63), discharge (4.46), admission (4.39), and administrative purposes (4.36).

The high ranking of ICT application in marketing development and inventory tracking shows that SMEs are more interested in reaching new customers and markets. Thus ICT is used as a marketing tool and also as a tool to safeguard the utilization of the available stocks. The adoption and use of ICT improves the overall efficiency of SMEs since ICT applications make paper records obsolete and enable the storage of all patients' information in electronic form.

A study by IICD in Eldoret shows that youths can utilize the use of ICT in farming through trainings in the use of ICT sites which include the use of Facebook and Twitter, which they can access on their mobile phones. The Youth Farmer Group in Eldoret, Kenya, uses Facebook to engage with each other, share experiences and information. The Facebook group named "Chepkorio Youth Farmers" has reached over 80 members and has become an active hub for youth farmers to promote ICT adoption and application in agriculture by exposing youngsters who are keen on farming, farming as a business and all kind of agriculture-related information. The shared information includes tips about farming, latest prices of crops, new sales opportunities, and even representation at conferences.

Kericho County uses the Social Network Services like Facebook, twitter and e-mail services to communicate to the county staff, members and other relevant parties. Advertisement of jobs, tenders and short-listing of qualified candidates are always done online.

This study therefore seeks to examine the influence of Information Communication Technology in the management performance of Businesses by trading entrepreneurs in Ainamoi Sub-County.

1.2 Statement of the problem

Many businesses do not perform well with a large number of them hardly surviving the teething problems. Most of them are shut down barely a year after commencing which has led to many problems to entrepreneurs who might have taken a loan to run their businesses. In many cases managers get surprises when they are expecting better performance only to receive the opposite of expectations simply because some records are missing or there were arithmetic errors in calculations of accounts.

Assets are stolen by outsiders or even the employees themselves, without the knowledge of the management because there were no proper records kept for the same and that there was no way of

detecting the theft. Business enterprises which do not use ICT in carrying out their market research always face stiff competition from the competitors who already employ the use of ICT. This is because market research done online is always cheaper therefore reducing the cost of operation hence increasing profits to the business.

The use of internet in advertising and reaching to customers is of great help to the business enterprises because there will be increased volume of sales, but since many enterprises are not utilizing the technology their sales volume is always low with competitors overtaking them. Recruitment of Human Resources is also a great challenge to businesses which do not employ the use of ICT since it is always expensive to do it manually or through media. Holding training seminars for employees is also expensive since the training facilities and trainer demand some costs and it is also time consuming. But with the advent of ICT employees can have their training online which requires little time to carry out and every employee receive the training in his/her office.

Many businesses in Ainamoi, Kericho County are unable to get the information about the market availability and the information concerning the competitors. They also are unable neither to market their products to the international scenes nor to know exactly what the customers need. Their level of production, in addition is very low since the kinds of technology they are using are the outdated ones. Due to the utilization of old technology, the enterprises are incurring high expenses since the high number of employees in this technology required to perform different activities, (Kericho County Ministry of Trade, 2014).

The studies that have so far been carried out are mostly generalists. This study therefore tried to investigate the Influence of Information Communication Technology on management of businesses in Ainamoi Sub-County so that the business managers and entrepreneurs might be advised accordingly. This study aimed at investigating four areas of ICT which have significant influences on Management. These areas were the use of Internet, the use of Computer Application Software, the use of Mobile Phones and the use of Closed Circuit Televisions.

1.3 Purpose of the study

The purpose of this study was to investigate the influence of Information Communication Technology on Management of Trading businesses in Ainamoi Sub-county.

1.4 Objectives of the study

The objectives of this study were:

1. To determine the influence of Internet use on management of trading businesses in Ainamoi Sub-County;
2. To examine how computer Application Software influences management of trading businesses in Ainamoi Sub-County;
3. To determine the extent to which the use of mobile phones influences Management of trading businesses in Ainamoi Sub-County;
4. To evaluate the contribution of CCTV use on management of trading businesses in Ainamoi Sub-County

1.5 Research Questions

The research questions that were used to assist the researcher in getting the information about the influence of Information Communication Technology on management performance by trading businesses in Ainamoi Sub-County were:

1. How does the use of Internet influence management of trading businesses in Ainamoi Sub-County?
2. How does the use of computer Application Software influence management of trading businesses in Ainamoi Sub-County?
3. To what extent does the use of mobile phones influence Management of trading businesses in Ainamoi Sub-County?
4. What contribution does the use of CCTV have on management of trading businesses in Ainamoi Sub-County?

1.6 Significance of the study

This study was carried out majorly to help the researcher investigate the influence of Information Communication Technology on Management of Trading Businesses. This knowledge would be of great importance to the student of Master of Arts Degree in Project Planning and Management since he would relate how ICT influences business management and apply the same to the management of projects.

Also students taking Business Management, Human Resource Management, Accounting, Finance Management, Banking, Purchasing management, Supplies management, Entrepreneurship, Sales Management, Marketing Management, Computer Science, Information Science, Applied Statistics and other related courses will benefit from this research by applying the knowledge of how ICT use influences businesses management to the businesses they will be managing. It would also be of great importance to the project managers and business owners since they would be advised accordingly to improve how they manage their businesses or projects.

1.7 Limitations of the study

One of the limitations of this study was that some of the respondents were unwilling to give the correct information about their enterprises for fear that their competitors might find out their weaknesses hence capitalizing on them. Most of the business owners were illiterate and was difficult for them to fill the questionnaires since they could not understand. This was solved by guiding the researcher through the questions in the questionnaire and filling the answers given by the respondents.

In addition, most small scale enterprises do not keep records and this was a great challenge to the researcher since the information regarding past sales and profits which was very much important in comparing the performance before and after adoption of Information Communication Technology might not have been given accurately. The researcher tried to overcome these limitations by creating a rapport with the respondents and assuring them that the information that they were going to give would be treated with utmost confidentiality. Also the entrepreneurs who kept records were requested to fill the questionnaires using the records they kept but those who didn't keep records were allowed to estimate their profits and their sales figures.

1.8 Delimitations of the study

The study was done within Ainamoi Sub-County. The study concentrated on the trading enterprises to represent all the other sectors. Four different trading centers were covered, that was: Kericho town, Nyagacho Market, Brooke Market, and Ainamoi Market. The study dealt mainly with how different Information Communication Technology devices like computers and mobile phones are used and how different enterprises perform when this technology is employed.

1.9 Basic assumptions of the study

There were assumptions made since not always is the data collected accurate of what is actually taking place but should only be not far from the truth. The assumptions made therefore were that: The sample collected represented the entire population; the instruments used were valid and reliable and gave the exact information that was required; when carrying out the research, the respondents were truthful and gave the correct answers.

1.10 Definition of significant terms as used in the study

During the research, the following terminologies were widely used. Their meanings are given as follows:

Closed Circuit Television: This is the use of video cameras to transmit a signal to a specific place, on a limited set of monitors.

Computer Application Software: This is a set of computer programs designed to permit the user to perform a group of coordinated functions, tasks, or activities. Application software cannot run on itself but is dependent on system software to execute.

Entrepreneur: According to Joseph Alloys Schumpeter an entrepreneur is one who combines various input factors in an innovative manner to generate value to the customer with the hope that this value will exceed the cost of the input factors, thus generating superior returns that result in the creation of wealth.

Information Communication Technology (ICT): This is a phrase used to describe a range of technologies for gathering, storing, retrieving, processing, analyzing and transmitting information. It includes the use of Computers, Mobile phones, Tax Registers, Closed Circuit Televisions and other related devices.

Information Technology (IT): Refers to the study, the design, development, support of management of computer-based information systems particularly software applications and computer hardware (Information Technology Association of America-ITAA).

Internet: This is a global system of interconnected computer networks that use the standard Internet protocol suite (IP) to link several billion devices worldwide. It is a network of networks

that consists of millions of private, public, academic, business, and government networks of local to global scope, linked by a broad array of electronic, wireless, and optical networking technologies.

Management: This is an act of allocating resources to accomplish desired goals and objectives efficiently and effectively. Management comprises planning, organizing, staffing, leading or directing, and controlling an organization (a group of one or more people or entities) or effort for the purpose of accomplishing a goal.

Mobile Phones: This is a device that can make and receive telephone calls over a radio link while moving around a wide geographic area. It does so by connecting to a cellular network provided by a mobile phone operator, allowing access to the public telephone network. It also provides a wide variety of other services such as text messaging, Multi-Media Message Service, email, Internet access, short-range wireless communications (infrared, Bluetooth), business applications, gaming, and photography.

Trading Businesses: These are businesses which are involved in buying and selling of products either to consumers or to other businesses for a profit.

1.11 Organization of the study

This research report covers the following areas: The first chapter of this report contains the background of the study, the statement of the problem, purpose of the study, objectives, Research questions, significance of the study, limitations of the study, delimitations of the study, assumptions of the study and the definitions of significant terms.

The second chapter which is the Literature Review containing the Introduction, Concept of Management of Businesses, Internet Use, Computer application Software, Mobile Phone Use, Use of Closed Circuit Television, Theoretical framework, Conceptual framework and Gaps in Literature Review and summary of the Literature review.

The third chapter is the Research methodology and it contains the introduction, Research Design, Target population, Sample size and sample selection, Data Collection Instruments, Pre-testing, Validity, Reliability, Procedure of Data Collection, Methods of data Analysis, Operational

Definition of the Variables and Ethical Considerations. The fourth Chapter focuses on data analysis, presentation, interpretation and discussion.

The final chapter contains the introduction of the chapter, summary of the findings, conclusion of the study, Recommendations, Suggestions for further studies and Contribution to the body of knowledge.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter contains the Concept of Management of Businesses, Internet, Computer Application Software, Mobile Phones, Closed Circuit Televisions, Theoretical framework, Conceptual framework, Gaps in Literature Review and summary of the Literature review.

2.2 Concept of management of businesses

Management is the function that coordinates the efforts of people to accomplish goals and objectives using available resources efficiently and effectively. The management of an organization cannot be achieved effectively if the required resources are not available. Success of the organizational management can also be achieved if the manager has got the requisite skills and experience to drive the organizational activities for the achievement of the set goals. In addition, if the right technology which is up-to-date is used managerial activities are going to be made easier. This will bring about efficiency and effectiveness in the organization. For example the use of Information Communication Technology helps the organization to perform better in management.

Many authors like Demartini (2010), Assinform (2010), Al-Qirim (2004) and Barb-Sanchez *et al* (2007) have emphasized on the need to invest on sophisticated Information Communication Technology (ICT) to enhance organizational information processing capabilities and thus performance. The anecdotal argument is, the use of advanced IT leads to more available information and thus leads to increased information accessibility to support decision making. Enterprises with extensive IT resources may gain competitive edge by deploying them in support of or to strengthen their businesses, including marketing of products and services both locally and internationally. (Tomas Hult, 2013).

Management Accounting System (MAS) is an important component of a modern information system within the SMEs (Romney marshal, 2009). The SMEs setting will provide a relatively focused insight into the management needs for management accounting information and ICT as an information processing mechanism (Michele Pomberg *et al* 2012; Laura *et al* 2012).

Dirk Pilat, Senior Analyst for Organization for Economic Co-operation and Development (OECD), also pointed out the economic impacts of ICT on economic growth and efficiency of businesses.

Capital deepening through investment in ICT is important for economic growth as it establishes the infrastructure for the use of ICT (the ICT networks) and provides productive equipment and software to businesses. Since investment mechanically adds to the capital available to workers, it contributes to labour productivity growth. Estimates accounted for between 0.3 and 0.8 percentage points of growth in GDP and labour productivity over the 1995-2001 periods in United States and Australia. Investment in software accounted for up to a third of the overall contribution of ICT investment (Dirk Pilat, 2008).

2.3 Influence of internet use on business management

The internet is one of the ways in which businesses advertise. The main form is advertisements or prompts on media focused websites. Communication helps businesses grow and prosper, creates relationships, strengthens the effectiveness of organizations, and allows people to learn about one another. Technologies, such as the Internet, mobile phones, social media, and customer relationship management systems greatly affect the way companies communicate with prospective customers, (<http://en.wiktionary.org/wiki/social+media>). These new forms of communication are changing the media landscape and the type of messaging strategy organizations use.

Tele-marketing is often used by media companies, especially 'sales departments' to generate appointments with potential customers (Eliashberg and Shugan 1997). Company Directory Software is used to identify decision makers within companies, capturing their details. Often electronic versions of customer database lists are purchased, allowing sales to contact potential customers directly the objective being, to secure appointments that lead to orders.

Direct mailing is a way in which companies send material / product information, directly to potential customers. The aim is to focus on real customers rather than sending catalogues / information to people who have very little interest in the product. Companies also keep up to date customer databases, (Romney marshal, 2009), saving thousands of pounds on future marketing campaigns. This ensures that advertising is directed to the people who have a potential interest in their products or services.

The Internet now provides a wide variety of search services for finding websites, sellers, services, people, product information, archived information, news, weather, messages, companionship, reviews, announcements, other search engines, and so on (Bradlow and Schmittlein 2000). There are now a variety of Web search services that enable buyers—both business and consumer—to find, at least, each other. One immediate implication is that the web search activity could vastly change the type, quantity, and cost of information.

Search engines are now becoming an important part of the distribution channel. Search engines can disseminate information about the products and services of many organizations (Bradlow and Schmittlein 2000). Search engines can also actively enable the finding of particular products and services while making it difficult to find other products and services. In many ways, search engines are gatekeepers, similar to traditional retailers who provide selected information, narrow buyer choices to a chosen assortment, and target particular items to particular customers.

Related to enhanced search technology are the expanding presence of third-party evaluators such as professional reviewers (Eliashberg and Shugan 1997), user reviews (Novak et al. 2000), and interested third parties who provide “free ink” (i.e., free announcements of new products or new marketing strategies in the form of current news or popular entertainment).

More rapid communication might intensify seasons and change the nature of product introductions across different international markets (Tellis *et al.* 2003). Perhaps more rapid communication causes more rapid diffusion, but that expectation might depend on the nature of the information being diffused and the quality of the product.

American research (Global 500 Web Site Recruiting, 2000) shows, that 79% of companies from the Global 500 group (500 largest world companies by revenue) at least to a certain extent use the Internet for seeking new personnel. Also, comparison of data for years 2000 and 1998 shows that percentage of companies that use the Internet for mentioned purpose has grown considerably from 29% in 1998.

According to 1999 RIS-research (RIS – “Raba Interneta v Sloveniji” - Usage of Internet in Slovenia.), only 4% of companies have used Internet for recruiting in same fashion. The main advantages for Internet supported recruiting are (Achieving Results with Internet Recruiting, 1998): Lower costs of recruiting (savings in invitations for application, postal-costs, data-processing costs and interviewing costs); Quicker process of recruitment period from the point when the need for a new employee is sensed until the point when he starts doing his job is,

according to the research, cut for twelve days; and Possibility to attract better and more candidates – invitation for application published on a website can also be spotted by those, who are currently not seeking new employment actively.

Tele working as outlined in European Commission's annual report for year 2000 (Johnston & Nolan, 2001), is a wide concept, whose 'common element' is 'the use of computers and telecommunications to change the accepted geography of work'. It means that we are 'moving the work to workers instead of moving the workers to work', with help of information technologies (Nilles, 1998).

Tele working offers significant advantages, which could be summarized and classified in three views: Individual's, organisational and macro-societal; from the second perspective, benefits of telecommuting include higher productivity ("more work being done") and "decrease of absenteeism"(Nilles, 1998). Because the employees are more satisfied and their morale is increased, they are more unlikely to be searching for another job – organisations experience lower turnover rate.

According to Dash, employee fluctuation can decrease by 50-80% when tele working is introduced (Dash, 1999). Besides, organisations have 'the ability to access a broader pool of employees as the geographic tie to an "office" is diminished' (Venkatesh & Speier, 2000). Furthermore, organizations 'real estate costs can be cut because of the reduced office space requirements' (Nilles, 1998). Additionally, customer service improves due to flexible working hours (twenty- four-seven concept), (Tele work the Benefits – and some Issues, 2000).

Internet-based technology offers numerous possibilities for getting hold of new knowledge and skills. Company wise, it offers much quicker access to latest scientific and technological innovations of other companies and research institutions (Jerman-Blazic, 1996). For each individual it offers itself as vast searchable database of web pages, newsgroups, mailing lists, online courses, forums, etc.

2.4 Influence of computer application software on business management

ICT can be used in accounting to carry out recording of transactions and in calculations of different figures (Michele Pomberg *et al* 2012; Laura *et al* 2012). It is helpful in bringing about accuracy in that computers perform calculations without errors irrespective of such calculations

being simple or extremely complex. However, care should be observed to input the right information. Else, garbage in will result in garbage out. Accounting and spreadsheet software is used to keep accurate records of sales, manufacturing, advertising and distribution costs.

Romney marshal, (2009) says that apart from being accurate, computers have the ability to process huge volumes of data very rapidly. Reports such as account balances, control accounts, trial balances, income statements and balance sheet can be obtained at few clicks. Also, reports can be processed in different formats to suit the needs of the users. Computers have the ability to do the jobs that would require several workers had a manual system been used. Examples include preparation of control accounts, financial statements and preparing payroll which only requires the right software to be used (Romney marshal, 2009).

Accounting software allows reconciliations to be performed automatically and rapidly. Management Accounting System (MAS) is an important component of a modern information system within the SMEs (Romney marshal, 2009). These include reconciling cash book balance with balance on bank statement and reconciling control account balances with balances from sales ledger and purchases ledger.

Computers also provide virtually unlimited space for storing data on discs (hard disks, servers, removable disks and even on the internet). These require very little space and may retain information for years. Besides, information can be safeguarded by making backups (keeping same information on different disks). Using computers reduces considerably the use of filing cabinets. The SMEs setting will provide a relatively focused insight into the management needs for management accounting information and ICT as an information processing mechanism (Michele Pomberg *et al* 2012; Laura *et al* 2012).

Information Communication Technology plays a critical role in leveraging and complementing human and business resources (Powell and Dent-Micallef, 1997). The importance of using the HR - IT tools, the authors express as follows: “in organizations, despite increasing needs for technological advancement, human and cultural factors play a more important role than before. However, technology is often seen by management as essential means to compete in the global market. To that technology, including information technology, brings the desired results, the most important issue for an organization is how to manage the technology with respect to human

organizational aspects, how to analyze and understand human factors guided by the norms, shared beliefs, and assumptions of the organization, as well as by individuals' unique values-all together known as "culture" (Zakaria and Yusof, 2001).

Information systems in HR can provide better services to line managers, serve as a pipeline connecting a personal policy and personal processes in all organization and thus facilitate personal management in the company, provide important data for a strategic personal decision-making and enable a quick acquiring and analysis of information for HR assistants, and reduce cost labors at performance of personal activities (Armstrong, 2002). The study called "Effects of HRM practices on IT usage" (Lee, 2009) shows that organizations use technologies for HR field such as employee participation, clearly defined jobs and extensive formal training. On the other hand, according to survey, companies which are using external IT capability, only internal career opportunities used IT tools.

HR function used to employ IT for administrative processes, primarily payroll processing, with little attention being paid to so-called transformational HR practices (DeSanctis, 1986). Nevertheless the results present in paper (Bondarouk and Ruël, 2009) that "in 2006, as the Cedar Crestone 2006 HCM Survey shows, companies broadened the scope of HRM applications: although administrative e-HRM was still the most popular application (62% of surveyed companies), companies reported an increasing use of strategic applications like talent acquisition services (61%), performance management (52%), or compensation management (49%)."

Computer Application Software can also be applied in securing both data stored and the physical assets of the business (Harbert 2004). Physical assets and goods are not allowed to go out without being discharged in the computer by entering their back codes into the register created in advance in the computer. Unauthorized taking away of these assets will make the computer raise an alarm which will alert the security officers for appropriate action to be taken. The use of Biometrics and Smart Cards also improves security. Biometrics is the automated identification or verification of a person made by comparisons of physical, physiological, or behavioural traits to a stored digital template, (Harbert 2004).

From a marketing viewpoint, one clear potential benefit from biometrics is the mitigation of arbitrage. In many situations, arbitrage vastly decreases the advantage from potentially profitable

targeting strategies. For example, amusement parks that sell annual passes can use biometrics to discourage buyers from lending their cards out or to prevent someone from using a lost or stolen card, (Lorek 2004).

2.5 Influence of Mobile Phones on Business Management

In the current decade, use of mobile telephony has increased fourfold, from approximately 1 billion to 4 billion active subscriptions worldwide (ITU, 2009). The successful entrepreneur, enabled by his mobile phone, plays a prominent role in the global development narrative and become a semi-regular fixture in the popular press (Economist, 2005) and practitioner media (Bhavnani *et al.*, 2008). This narrative has quickly changed as well, shifting from forward-looking hope to conventional wisdom without pausing long for reflection beyond anecdotes and linear extrapolation.

Like landlines, mobile phones allow people to communicate at a distance and exchange information instantaneously. Thus, there is significant potential for mobile use to increase MSE productivity. However, since the dynamics underpinning this potential are nuanced, and since current supporting evidence is scarce and methodologically heterogeneous (Jagun *et al.*, 2008), it is important to more rigorously examine mobile use by MSEs.

There is a difference between using a mobile to serve existing customers more effectively, and using it to start a new business. There is a difference between using a mobile to check market prices and using it to bypass a middleman who carries goods to market. The popular narratives generally fail to make such distinctions; yet these same distinctions have significant implications for topics of interest to the development community, including the changing role of the informal sector and small enterprise in developing economies, our ideas about entrepreneurship and livelihoods, and our understanding of the informational society as a whole (Castells, 1996).

Recently, studies have emerged that directly address how MSEs in the developing world are using mobiles rather than landlines or other ICTs. The studies are not as numerous as the enthusiasm in the popular press might suggest. They are a tiny fraction of the total literature on mobile use in the developing world (Donner, 2008). Particularly focused and powerful evidence appears in Jensen's (2007) research on the fishermen of Kerala.

Working with five-year time series data at three fish markets in coastal India, Jensen and his team found that "the adoption of mobile phones by fishermen and wholesalers was associated with a dramatic reduction in price dispersion, the complete elimination of waste, and near-perfect

adherence to the Law of One Price. Both consumer and producer welfare increased.” (Jensen, 2007, p. 879). Soon after the introduction of mobile coverage, fishermen bought mobiles and accumulated lists of up to 100 buyers in their handsets’ address books; subsequently, while still at sea, fishermen could call a range of possible landing points and buyers in order to determine the best price and best place to sell their catch.

Jagun, Heeks, and Whalley’s (2008) examination of the mobile’s role in mediating supply chains in the Nigerian market for traditional hand-woven ceremonial cloth is broader in scope. They describe “process” benefits to mobile use, as calls at a distance reduce the time of trades and replace costly journeys. They also describe “structural” impacts; finding no disintermediation of traders, but rather an intensification of their role.

Traders are more likely to have mobiles than the less prosperous weavers in the supply chain, and thus are better positioned to coordinate with a wider range of downstream customers and to maintain a more dynamic and responsive set of relationships with weavers. For example, mobiles give weavers increased access to credit by enabling calls on their behalf to fabric vendors by traders, who vouch for the veracity of weavers’ orders, and promise to cover the costs of the fabric in advance of the completion of the weavers’ work.

Studies (Boadi *et al.*, 2007; Donner, 2006a) provide anecdotes of small employers giving mobile phones to employees to facilitate easy communication between management and employees.

The most common finding links mobile use to an increase in the flow of information between actors in the value system. The two primary sub-themes are more frequent or wide-ranging exchanges of price information (Abraham, 2007; Aker, 2008; Overå, 2006), and a more generalized discussion of increased communication with customers (Esselaar *et al.*, 2007; Thomas S.J. Molony, 2006; Samuel *et al.*, 2005; Frempong, 2009). These findings are reflections of the frequent references to marketing and sales and procurement activities in the previous value chain analysis. Jagun *et al.* (2008) mention an increase in the completeness of the information, but they saw no increase in quality.

Samuel, Shah, and Hadingham (2005) highlight the importance of mobiles to microenterprises in South Africa, Tanzania, and Egypt: roughly 60% of the microentrepreneurs surveyed in each country reported that the mobile had increased the profitability of the business. Molony (2005) is more muted in his assessment, highlighting the continued importance of interpersonal trust when

considering the appeal of mediated (mobile) communications relative to face-to-face meetings among Tanzanian micro entrepreneurs.

2.6 Influence of closed circuit television on business management

Closed-circuit television (CCTV), also known as video surveillance, is the use of video cameras to transmit a signal to a specific place, on a limited set of monitors. It differs from broadcast television in that the signal is not openly transmitted, though it may employ point to point (P2P), point to multipoint, or mesh wireless links. This term is most often applied to those used for surveillance in areas that may need monitoring such as banks, casinos, airports, military installations, and convenience stores.

In industrial plants, CCTV equipment may be used to observe parts of a process from a central control room, for example when the environment is not suitable for humans (Hempel & Töpfer 2002). CCTV systems may operate continuously or only as required to monitor a particular event. A more advanced form of CCTV, utilizing Digital Video Recorders (DVRs), provides recording for possibly many years, with a variety of quality and performance options and extra features (such as motion detection and email alerts).

More recently, decentralized IP cameras, some equipped with megapixel sensors, support recording directly to network-attached storage devices, or internal flash for completely stand-alone operation. Surveillance of the public using CCTV is particularly common in many areas around the world. In recent years, the use of body worn video cameras has been introduced as a new form of surveillance (Clive Norris and Gary Armstrong, 1999).

Most companies implement video cameras to prevent theft or corporate espionage; avoid legal problems due to employee actions, or to raise employee productivity. A 1998 survey of 1,085 corporations conducted by the American Management Association (AMA) shows more than 40 percent engaged in some kind of intrusive employee monitoring. Such monitoring includes checking of e-mail, voice mail and telephone conversations; recording of computer keystrokes; and video recording of job performance (Doyle, 1998 p. 1). Of the companies who responded to the AMA Survey 24.7% of general services, 22.2% of public administration, 14.9% of financial services, 13.1% of other non-profits, and 12.3% of manufacturing companies reported using video recording for employee evaluations (AMA, 2000).

Surveillance, as a concept and management tool, is described by several sociologists and criminologists, like Clive Norris and Gary Armstrong (1999), as the “elementary building block of all human societies, a form of power” (p.85), representative of the development of technology. Surveillance can be both public and private. One of the most common forms is video surveillance, otherwise known as Closed Circuit Television or CCTV1.

Video surveillance is a technology system of surveillance by cameras, which can be set up and used by public authorities on public places for crime prevention and/or crime prosecution. It is a multifunctional technology, initially used to manage risk in cases of traffic jams, fire, accidents and crime (Hempel & Töpfer 2002). The system consists of video cameras connected in a closed circuit television. Images are sent to a central television monitor or recorded in a control room (European Commission for Democracy Through Law 2007).

The inevitable and continuous changing face of CCTV technology suggests that surveillance is in a constant state of flux, in terms of technical features, the public’s reaction, its use and management by authorities, and the nature of security. CCTV systems are increasingly used for varied purposes and places, which Jean Ruegg, Valérie November and Francisco Klauser (2004) suggest is due to the rise in the number of possible applications of video surveillance.

CCTV systems have expanded to facial recognition systems, infrared devices, computerised databases to track people, recording of sounds and voices (microphones), automated license plate identification, cellular alarm communication, roving video surveillance, unmanned aerial vehicles and wireless high-speed computer networks that transfer images at faster rates and improved quality.

2.7 Theoretical Framework

Technological change is the main driving force behind economic growth (Haines & Joel D., 2006). The crucial role of technological change in explaining the patterns of economic growth attracted broad attention in mainstream economics. This study employs the use of **Neo-classical Growth Model**, developed by Julio Davila *et al*, 2012. The model provides a theoretical framework for understanding geographical differences in patterns of growth in per capita output. In the model, aggregate output depends on capital, labor and labor-augmenting technological change. Julio identified that capital and labor (physical inputs) alone cannot be held responsible

for most of the economic growth but there is something else. This ‘something’ was identified as ‘total factor productivity growth’ which often has been equated with ‘technological change’.

Technological change is all about knowledge creation. In a growth perspective, this implies that economic growth ultimately driven by accumulation of knowledge or human capital, thereby generating positive externalities. The essential idea in the first endogenous growth models by Krugman, 2013 and Carroll, 2011, is that knowledge should be considered as a kind of renewable capital good, with capital being a broad concept including knowledge or human capital.

Massive structural change is happening within nations as well as across borders. Urbanization and the transition from agrarian to manufacturing or industrial economy and then to a service based society has the obvious aspect of this change for some time. The explosion of trade associated with globalization, technological progress and information revolution have added to this.

The impacts of ICT investment on economic growth has enhanced technological progress in the production of computers, e.g. the release of increasingly powerful computer chips, which is projected to continue for the foreseeable future. As long as enterprises producing these technologies are confronted with sufficient competitive pressure, prices of these technologies will continue to decline, encouraging ICT investment and stimulating further productivity growth hence enhancing the performance of these enterprises (Dirk Pilat, 2008).

The second important economic impact of ICT is linked to having a sector producing ICT goods and services. Production has been characterized by rapid technological progress and very strong demand. The sector has therefore grown very fast, making a large contribution to economic growth, employment and exports. Moreover, having a strong ICT sector may help enterprises that wish to use the technology, since the close proximity of producing enterprises might have advantages when developing ICT applications for specific purposes.

Empirical studies show that in Finland, Ireland and Korea, close to 1 percentage point of aggregate labour productivity growth over the 1995-2001 period was due to the strong productivity performance of the ICT manufacturing sector. Partly, this is linked to the liberalization of telecommunications markets and the high speed of technological change in this market. (Dirk Pilat, 2008)

A third impact of ICT that shows up at the aggregate level is linked to the use of ICT. Several studies have examined the performance of those sectors of the economy that are intensive users of ICT. Most of these are located in the services sector, e.g. industries such as finance, business services and distribution. In some countries, notably the United States and Australia, there is evidence that sectors that have invested most in ICT, such as wholesale and retail trade, have experienced an increase in the overall efficiency of using labour and capital, or multi-factor productivity growth. This could be because these sectors have received productivity gains from ICT use over and above the labour productivity gains they received from investment in ICT, for instance because of network effects. (Dirk Pilat, 2008)

The strongest evidence for the economic impacts of ICT emerges from enterprises -level studies. Enterprise -level data point to factors influencing the impacts of ICT that cannot be observed at the aggregate level. For example, the role of ICT in helping enterprises gain market share can only be examined with enterprise -level data, as can the role of organizational change. Over the past years, much progress has been made in developing statistics on the use of various ICT technologies in the economy. In addition, many countries have developed databases that provide detailed and comprehensive data on the performance of individual projects. Combining these two sources of information can help establish a link between project performance and their use of ICT.

Moreover, provided that these databases cover a large proportion of the economy can also link the performance of individual projects to that of the economy as a whole. The empirical evidence from such studies, which have now been carried out in many countries, shows that ICT may have several impacts. For example, the effective use of ICT may help businesses gain market share more than less productive enterprises, which could raise overall productivity. In addition, the use of ICT may help project managers innovate, e.g. by helping them to expand their product range, customize the services offered, or respond better to client demand. Moreover, ICT may help reduce inefficiency in the use of capital and labour, e.g. by reducing inventories. These effects would all lead to higher productivity growth.

The enterprise -level evidence also suggests that individual projects may start at a smaller scale than others, but grow much more quickly and get higher returns from their investments in ICT when successful. This may be linked to less aversion to risk (e.g. in United States), where it is

linked to its financial system, which provides greater opportunities for risky financing to innovative entrepreneurs. Moreover, if they do not succeed, the costs of failure are relatively limited. (Dirk Pilat, 2008)

Several studies have examined the relationship between IT sophistication and performance of SMEs. For example, Fernando (2013) found computerization to be a significant predictor of the performance of small manufacturing enterprises. Pilget *et al*, (2013) carried out a study on this relationship and found that ICT management was positively related to structural sophistication, and ICT usage was positively related to performance.

On the other hand, Dirk Pilat, (2008) found SMEs with less sophisticated ICT performed no better than SMEs with less sophisticated IT. But more recently, Nelson (2012) examined the alignment between ICT strategy and business strategy among SMEs. They found out that groups with high ICT alignment achieved better than those with low ICT alignment. There is evidence that ICT helps businesses develop and implement business strategy, (Nelson Ndubisi, 2012). He found that there is direct relationship between innovation & business performance.

Generally results from the past studies indicate that ICT adoption has grown tremendously with Businesses yet there is considerable evidence to suggest that very few of the resulting systems have had significant impact on the way management generate revenue. Boston consulting group (2013) found limited evidence that IT is used to support quality growth.

The most prevalent applications in businesses are transactional in nature and are mainly used for administrative and operational tasks. These applications are easy to deploy because they are hosted centrally, (Chintan, 2009). Chintan argued that the key problem of lack of strategic ICT usage in businesses relates to the poor security between what the software tools are offering and what is needed, with neither the users nor the suppliers in a strong position to communicate with each other. The situation is even more crucial within SMEs as there is cloud usage at companies where unavoidable speed of threats is exhibited. (Eric Slick, 2013).

2.8 Conceptual Framework

Conceptual framework brings out clearly the relationship between Information Communication Technology and Business Management. It describes Business Management as a dependent

variable which is affected by the use of Information Communication Technology. It also shows Information Communication Technology as independent variable, that which is not affected by any factor but it affects the Business Management. The Information Communication Technology is seen to have an impact on the Management of Businesses. It concentrates on a few areas of ICT to represent the entire ICT usage. The diagram shows the relationship of use of ICT facets like Internet, Computer Application Software, Mobile Phones and Closed Circuit Televisions as Independent Variables and the Business Management as the dependent Variable. It also has the government policy on the use of ICT as moderating Variable. This relationship can best be described by the diagram below:

Figure 2.1: Conceptual Framework of the study

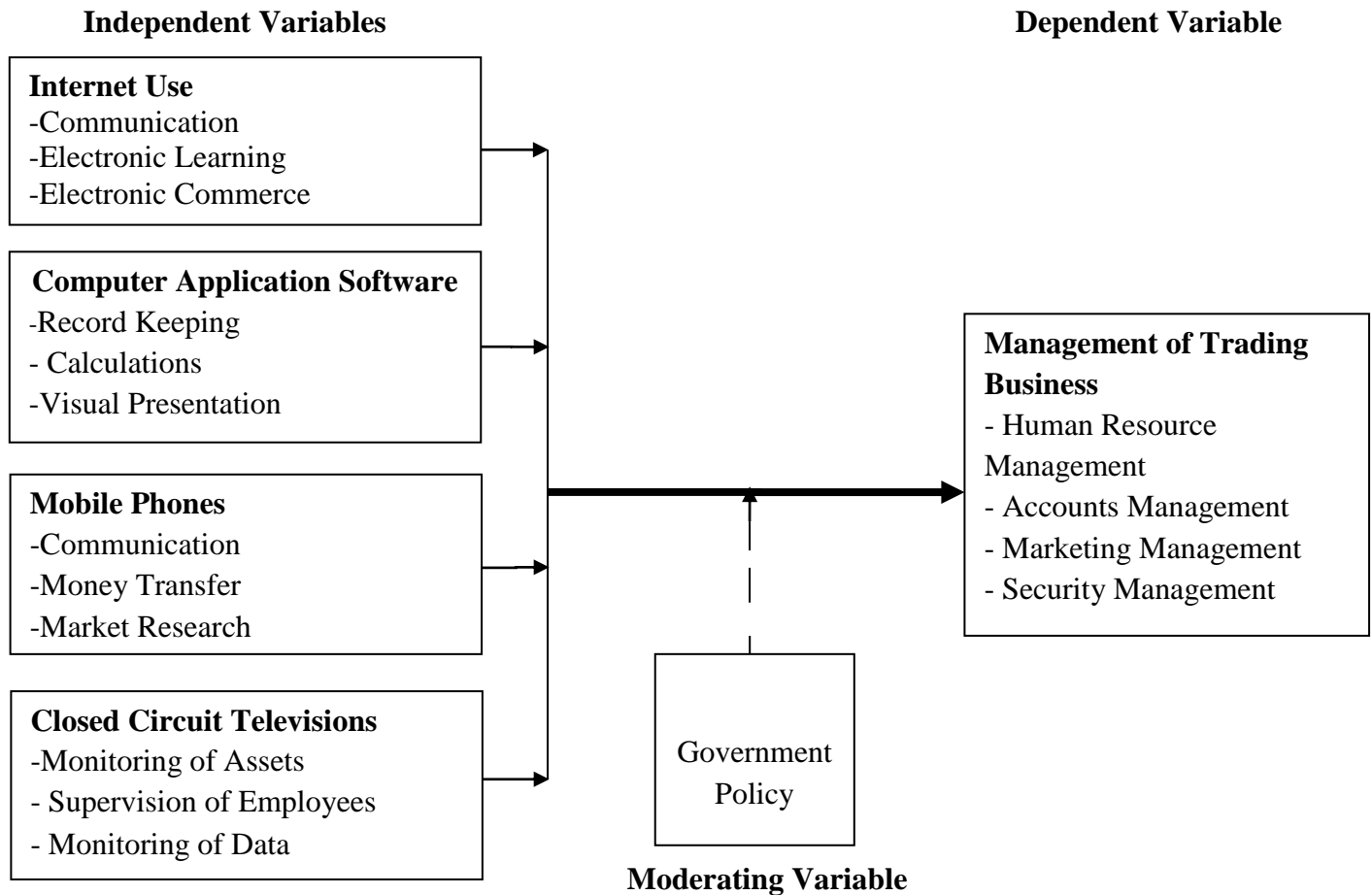


Fig. 1: Conceptual Framework of Influence of ICT on Management of Trading Businesses.

2.9 Gaps in Literature Review

The previous researches concentrated mainly on the general use and effect of ICT on business Management. This study therefore majored on specifically four areas of ICT, that is, Use of Internet in Management of Business, Use of Computer Application Software in Management of Business, Use of Mobile Phones in Management of Business and Use of Closed Circuit Televisions in Management of Business. These areas have not been comprehensively tackled in their entirety.

2.10 Summary of Literature Review

The above discussions show that the impact of ICT on Business Management may not be a direct one but may be intermediated by other factors. Sophisticated ICT alone does not guarantee an increase in Management performance. This ambiguity warranted further exploration of the relationship between ICT sophistication and Management of businesses.

There is considerable evidence to suggest that financial accounting remains the principle source of information for project management (Nassim, 2013). These studies suggest that most businesses have little management information, poor control; and decision making is based on ad hoc basis. Martin Nixon, (2013) found financial awareness among the managers of businesses vary considerably and the use of computers for the preparation of management accounting information is not at its full potential (Pory Cooper, 2013).

Although considerable evidence has been placed on the potential benefits of ICT applications to organizational performance, results from several empirical studies report insignificant relationship between ICT sophistication and business performance (Shaymal, 2004). He argued that use of different measures of ICT sophistication makes it difficult to make comparisons between studies, particularly its impacts on performance.

Other researchers like Shin (2004), called for more indirect approach to measure the relationship between technology and management. He further argued that ICT is an essential tool but not sufficient by itself to be truly effective. Rather it needs to be coupled with other factors like business strategy to have an impact on management. These factors are often translated in terms of organizational requirements (Alcott & Blake, 2008)). The required information would then be

made available by the organization by, among others, investing in more sophisticated ICT (Vincenzo Spiezia, 2012). Adrian, (2008) argues that the effectiveness of ICT will be contingent on organizational requirements, which is reflected by the availability of that information.

Thomas Anderson explores the inter-independence between technology transfer and their connection to innovation, Information Communication Technology (ICT) and institutional change. The extent to which the opportunities offered by new technology are strongly influenced by knowledge transfer coupled with the absorptive capacity. Institutional reforms should be led by the need for fostering demand-led “pull” of technologies in response to real needs. Crucial governance structures, including those that impact on universities and learning processes need to appreciate diversity and openness. The interface between transfers of technology and knowledge and the means for engineering local capacity and competence developments needed to be reviewed in this light.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter contains the Research Design; the target population; the sample size and sampling selection, and the sampling Technique used; Data Collection Instruments; pre-testing of the instruments, validity of the instruments; Reliability of the instruments; Procedure of data collection; Methods of data Analysis; Operational Definitions of the variables; and Ethical issues that pertain to the behavior of both the researcher and the respondents in the process of conducting the research.

3.2 Research Design

This study adopted a descriptive survey design which according to Churchill (1991) is appropriate where the study seeks to describe the characteristics of certain groups, estimate the proportion of people who have certain characteristics and make predictions. The study aimed at collecting information from respondents on influence of information and communication technology on management of trading enterprises in Ainamoi Sub-County. Khan, (1993) recommends descriptive survey design for its ability to produce statistical information about aspects of education that interest policy makers and researchers.

Descriptive survey research designs are used in preliminary and exploratory studies to allow researchers to gather information and summarize, present and interpret data for the purpose of clarification (Orodho, 2003). According to Mugenda and Mugenda (2003) the purpose of descriptive research is to determine and report the way things are and it helps in establishing the current status of the population under study. The design was chosen for this study due to its ability to ensure minimization of bias and maximization of reliability of evidence collected.

3.3 Target Population

Population refers to the total number of items under study which in this case is the number of entrepreneurs that are in Ainamoi Sub-County. The research targeted only trading entrepreneurs

within Ainamoi Sub-County. A total of 1936 trading entrepreneurs are found in this study area, (Kenya National Bureau of Statistics, Kericho County, 2014).

3.4 Sample size and sample selection

3.4.1 Sample size

A sample is a small number chosen to represent the whole population. Statistically, in order for generalization to take place, a sample of at least 30 must exist (Wiersma, 2005). To determine the size of the sample to be used, the Yamani Taro (1967) formula was used. It states that the desired sample size is a function of the target population and the maximum acceptable margin of error (also known as the sampling error). From the population of 1936 Entrepreneurs, a sample of 332 Entrepreneurs was selected for the study.

3.4.2 Sample selection

This population was divided geographically into 4 groups (strata) and the sample of the trading entrepreneurs was selected by simple random method from each stratum. 200 entrepreneurs were selected from Kericho town, 82 from Nyagacho market, 25 from Brooke and 25 from Ainamoi Market.

3.5 Data collection instruments

The instrument that was used to collect the data was the Questionnaire. This instrument was designed as to capture the information about the influence of Information Communication Technology on the Management of trading enterprises.

3.5.1 Pretesting of the data collection instrument

The instrument was pre-tested before the actual research study was carried out to ensure the validity and the reliability of the said instrument. This was done by having 30 Entrepreneurs from among those who were not sampled fill the questionnaires and the researcher confirmed if the answers given would answer the research questions. These entrepreneurs did not take part in the main study.

3.5.2 Validity of data collection instruments

The research instrument used for this was self-administered questionnaires. Validity shows whether the items measure what they are designed to measure (Borg and Gall, 1989). Pre-testing was conducted to assist in determining accuracy, clarity, and suitability of the research instrument. Borg and Gall (1989) notes that two to three cases are sufficient for some pilot studies. For this study, a sample of thirty was sufficient. Content validity was examined to ensure the instruments would answer all the research questions (Borg and Gall, 1996). Based on the analysis of the pretest results, the researcher made corrections, adjustments, and additions to the research instrument.

3.5.3 Reliability of data collection instruments

Using the primary method of data collection like the questionnaires ensured the reliability of the data since they were collected first hand from the respondents. The stratified sampling that was used followed by simple random sampling from each stratum also ensured that all the entrepreneurs had equal chances of being selected therefore ensuring accurate representation hence reliability. Questions were pretested before the actual study to ascertain their appropriateness and relevancy to the study.

3.6 Procedure for data collection

The data relating to the use of ICT by entrepreneurs and their performance was collected by actual visitation of the area of study. Before collection of the data, the researcher first got permission from the relevant authorities like Commission of Higher Education and the sub-county administration. The researcher then visited the actual area of study and familiarized himself with the entrepreneurs assuring them that the research would have no negative impact on them. Questionnaires were given to them and given time to fill. They were then collected by the researcher after an agreed time period which was not more than one week.

Where there was a misunderstanding of the question the researcher helped to clarify so that the correct data could be collected. The questionnaire used had two sections: section A which tried to capture the personal details of the respondent which included age, gender, level of education and professional training; and section B which tried to capture the business information.

The data collected under business section included the kind of Information Communication Technology used; how the businesses kept their records; how they carried out their accounting practices; how they marketed their products; how they recruited employees, how they keep data for the employees and whether they use CCTVs for security of their assets or not.

3.7 Methods of data analysis

The process of data analysis involved data clean up and explanation. The data was then checked for any errors and omissions (Kothari, 2004). Frequency tables and percentages were used to present the findings. Responses in the questionnaires were tabulated and processed by use of a computer Statistical Package for Social Science (SPSS) version 17.0 program to analyze the data. The analysis included the composition of respondents by gender; composition of respondents by age; the level of education that the respondents had; the kinds of training that they had acquired; the number of entrepreneurs who employed the use of Information Technology; type of ICT adopted; marketing strategies; how the respondents kept records; mode of recruitment of employees; whether CCTVs are used for security or not; and the perception of the respondents themselves about the Information Communication Technology. Frequency Tables were used to interpret the results of the study.

3.8 Operational definition of the variables

The research tried to capture and make conclusion on the Influence of ICT use in Management of Trading Enterprises. It concentrated on four aspects of ICT to draw the general influence on management of trading enterprises. These four areas are: Internet; Computer Application Software, Mobile Phones and Closed Circuit televisions. The use of ICT in accounting was measured by checking on how respondents carry out their calculations and how they draw the financial statements.

Its efficiency was measured by the length of time they take in drawing the statements and the accuracy of the figures. Respondents also showed how they carry out recruitment of employees and how they keep records of employees to get rid of ghost workers. This revealed how the use of ICT is helpful in Human Resource Management. The sales volume was also used to show the impacts of ICT on Marketing. The use of ICT for security was revealed through the keeping of records using ICT by the respondents to avoid manipulation of records and through the use of

CCTVs to check for theft of physical assets. The table below shows how these variables were measured:

Table 3.1: Operational Definition of the Variables

Research Objective	Variable	Indicator	Measurements	Study Design	Tools of Analysis
To determine the influence of Internet use on management of trading businesses in Ainamoi Sub-County	-Communication -Electronic Learning -Electronic Commerce	-Very Efficient - Efficient -Moderately Efficient - Inefficient -Very Inefficient	Likert Scale	Quantitative	Percentages and Frequencies
To examine how computer Application Software influence management of trading businesses in Ainamoi Sub-County	-Record Keeping -Carrying out Calculations -Visual Presentation	-Very Efficient - Efficient -Moderately Efficient - Inefficient -Very Inefficient	Likert Scale	Quantitative	Percentages and Frequencies
To determine the extent to which the use of mobile phones influence on Management of trading businesses in Ainamoi Sub-County	-Communication -Money Transfer -Market Research	-Very Efficient - Efficient -Moderately Efficient - Inefficient -Very Inefficient	Likert Scale	Quantitative	Percentages and Frequencies
To evaluate the contribution of CCTV use on management of trading businesses in Ainamoi Sub-County	-Monitoring of Assets - Supervision of Employees - Monitoring of Data	-Very Efficient - Efficient -Moderately Efficient - Inefficient -Very Inefficient	Likert Scale	Quantitative	Percentages and Frequencies

3.9 Ethical Considerations

As far as this research is concerned, the researcher ensured that he maintained all the ethical standards as much as possible. The respondents were briefed on the importance of the study and how they were going to benefit to avoid suspicion on anything. The questionnaires were framed in such a way that the identity of the respondent could not be revealed. It therefore would not contain anywhere where the name of the respondent or the enterprise is written.

This is because some respondents do not like their secrets to be known by others and if they felt that it might be revealed then they were going to give wrong information which would therefore make the researcher to draw wrong conclusion. The respondents were also given the questionnaires to fill after they had accepted but for those who refused, they were not be forced to do so. They were also mobilized to fill the questionnaire and submit in time to save the researcher time for collecting and compiling the data.

The researcher also used his original work while analyzing, interpreting and presenting the data collected to avoid plagiarism. It is only in the Literature Review and Background of the study where information has been borrowed from other scholars.

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION, AND INTERPRETATION

4.1.Introduction

This chapter contains five sections. The first section looks at the bio-data information of the respondents, which include age, gender, level of Education and training. The second section gives information on how respondents use ICT in Human Resource Management. The third section discusses the use of ICT in accounting and record keeping by the respondents while the fourth section discusses how ICT is used in Marketing. The final section touches on the use of ICT in Security management by the respondents.

4.2.Response Rate

Out of the 332 questionnaires administered to the respondents, 320 were returned for analysis while the other 12 were not returned. This translates to 96.39 per cent return rate of the respondents. This rate is considered high and good enough to be used in drawing conclusion. The table below summarizes this information:

Table 4.1: Response Rate

Response Rate	Frequency	Percentage
Questionnaires Returned	320	96.39
Questionnaires not Returned	12	3.61
Total	332	100

4.3.The bio-data information of the respondents

The study sought to find out the bio-data information of the respondents to know the characteristics of the respondents that dominate in business. This is for general information and is not a direct objective of the study. This is summarized in the table below:

4.3.1. Distribution of respondents by age

Table 4.2: Distribution of the Entrepreneurs by Age

Age Group	Frequency	Percentage
10-20	8	2.5
20-30	146	45.5
30-40	80	25
40-50	57	18
≥50	29	9
Total	320	100

From the table above, most of the entrepreneurs are in the bracket 20-30 with 45.5% proportion being the highest of the other categories. This is followed by those between the ages of 30-40 with a proportion of 25%. This therefore means that most of the people in business are young people between the ages of 20-40 years. This might be because they are young and are trying to find a way of getting an income as they wait for employment or as an alternative to formal employment. The entrepreneurs who are above the age of 50 are 9% which means that most people at that age do not want to engage themselves in business because they see it as being too much involving and they fear stiff competition from young people especially at this ICT age.

4.3.2. Distribution of respondents by gender

Out of the 320 respondents, 208 of them were males while 112 were females. This shows that more males than females are in business. The table below can summarize this information.

Table 4.3: Distribution of Entrepreneurs by Gender

Gender	Frequency	Percentage
Males	208	96.39
Females	112	3.61
Total	320	100

4.3.3. Respondents' level of education

The entrepreneurs interviewed reflected that most of the persons in business field have gone to tertiary level of their studies. Tertiary level means either going up to middle level colleges or university level. The percentage of the entrepreneurs who have gone to tertiary level of their studies is 55% (176 out of 320), those who went up to secondary level are 32.5% (104 out of 320) while those who attained primary education are 12.5% (40 out of 320). This shows that most of the entrepreneurs have got the ability to manage their businesses well and can even be able to know the current trend in business environment especially in connection to the technological changes. The table below can represent this:

Table 4.4: Respondents' level of education

Level of Education	Frequency	Percentage
Primary	176	55
Secondary	104	32.5
Tertiary	40	12.5
Total	320	100

4.3.4. Respondents' Training on ICT

Out of the 320 respondents, 80% (256 out of 320) of them have gone for training in one or more of ICT related courses. This shows that the respondents are mostly having the requisite skills to use the ICT devices.

4.4. Adoption of ICT by the respondents

From the research, it was found that most of the entrepreneurs have not adopted the use of ICT devices except the mobile phones. 100% of the respondents are using mobile phones for various purposes in their day to day running of the businesses. Only 80 out of 320 (25%) respondents have adopted the use of computer system while the other 240 (75%) are still using the old method in carrying out various operations of their businesses. Only 5% (16 out of 320) of the respondents employ the use of CCTVs to manage their businesses. This might be because the use of CCTVs is expensive or due to the fact that most of these enterprises are too small for the use of CCTVs

for management or for security purpose. The above results can best be demonstrated by the use of the table and the diagrams below:

Table 4.5: Adoption of ICT by respondents

ICT Device Used	Number of Respondents	Percentage
Computer system	80	25
Mobile phone	320	100
CCTVs	16	5

From the above observation, it is clear that most entrepreneurs have not taken the initiative to use the ICT system especially the computer and CCTVs. It is only the mobile phone that has been adopted by every respondent interviewed. This can be attributed to the fact that these devices apart from the mobile phone are expensive to buy and therefore the entrepreneurs find it uneconomical to adopt them when they could have used the money to purchase some other goods for sale. It can as well be due to the fact that most of the entrepreneurs do not know how to use these devices or they don't have knowledge about their importance at all. From those who use computer system for different operations, a good number of them said that they are using it for record keeping while others use it for carrying out calculations and very few use it for communication purposes. The use of mobile phone is mostly for communication while a few have gone ahead to use it for payment of transactions through M-Pesa service.

4.4.1. Mode of Communication Used by Respondents

From the study, respondents use various methods to carry out communication both within the organization and outside the organization. 100% of the respondents use mobile phones for communication. This was followed by those who use word of mouth at 65% then those who use written memo at 58.13%. The least method used by respondents for communication is the e-mail, represented by 35.63% of the respondents. This is represented by the table below:

Table 4.6: Mode of Communication Used by Respondents

Mode of Communication	Frequency	Percentage
Mobile Phone	320	100
E-mail	114	35.63
Written Memo	186	58.13
Word of Mouth	208	65

As far as efficiency of the mode of communication is concerned, it was reported by 100% of those who use mobile phones that it is very efficient method, followed by those who use e-mail at 85.96% then those who use written memo at 56.18%. Only 40.87% of those who use word of mouth report this mode as very efficient. This shows that the most efficient of the four modes are the use of mobile phones and the use of e-mail.

4.5. ICT and Human Resource Management

4.5.1. Number of Employees

It was found out from the research that most of the respondents employ 0-20, which is the highest percentage of 75% (240 out of 320). There was no respondent employing between 60-80, 80-100 and 100 and above number of employees. This could be due to the fact that most of these businesses are small and require a huge number of workforces. The help of a table below can best describe this information.

Table 4.7: Number of employees employed

Class	Frequency	Percentage
0-20	240	75
20-40	64	20
40-60	16	5
60-80	0	0
80-100	0	0
100 and above	0	0
Total	320	100

4.5.2. Advertising for job vacancies

When asked on the mode of advertisement of job vacancies, most of the respondents use newspapers, represented by 40 % (128 out of 320), followed by those who use posters at 38% (122 out of 320) while those who use website are the least at 22 % (70 out of 320). This shows that most of the Entrepreneurs have not adopted the use of Website for advertising their job vacancies. A higher number (90 %) of those who use Website responded that they are finding it efficient, while a smaller number (80 %) of those who use Newspapers said that they are finding efficient. Only 60 % of those who use posters reported efficiency of that particular mode of advertising. This in essence shows that the use of Website is the most efficient method of informing potential employees of the vacancy available. The table below summarizes this information:

Table 4.8: Advertising for job vacancies

Mode of Advertisement	Frequency	Percentage
Newspapers	128	40
Posters	122	38
Website	70	22
Total	320	100

4.5.3. Keeping of employee records

As far as keeping of employee records is concerned, 78% of the respondents use books, which is the highest number, followed by 19% being those who use computers and only 3 % said that they do not keep records of their employees. This is shown in the table below:

Table 4.9: Keeping of employee records

System used	No. of Respondents	Percentage
Books	250	78
Computer System	60	19
No Records	10	3
Total	320	100

Among those who use books, 70% reported that it is efficient when locating an employee data and 68% said that it is efficient in storage capacity. 95% of those who use computerized system reported that it is efficient when locating an employee data and 98% said that the computer could store huge information about the employees. This shows that as far as retrieval of employee information and as far as storage capacity is concerned, computer system is found to be the most efficient.

4.5.4. Employee Training

Equal numbers of respondents, (48.13% each) carry out their training of employees through indoor seminars and outdoor workshops. Only 3.75 % of the respondents train their employees through online method. Asked about efficiency, 92.2% of those who use indoor seminars said to be efficient; 85.06% of those who use outdoor workshops reported efficiency on the method while only 66.67 % of those who use online have found it to be efficient. This shows that the use of online training is not efficient as compared to other methods. This could be attributed to the fact that most people gain more on a one on one training where there is an interaction with the trainer or maybe some employees do not know how to retrieve the online lessons from the computer. The table 4.10 below summarizes this:

Table 4.10: Employee Training

Mode of Training	Frequency	Percentage
Indoor Seminars	154	48.13
Outdoor Workshops	154	48.13
Online Training	12	3.75
Total	320	100

4.6. ICT and accounts management

4.6.1. Keeping of business records

Majority of the respondents keep business records in one way or another. 93.13% (298 out of 320) of the respondents reported to be keeping business records while only 6.88% (22 out of 320) do not do so. This is shown below:

Table 4.11: Keeping of business records by respondents

Keeping of Records	Frequency	Percentage
Keeping Records	298	93.13
Not Keeping Records	22	6.88
Total	320	100

Among those who keep records, 75.17 % of them use books while 24.83 % use computer system to keep their records. This shows that most of those who have adopted the use of computer are using it for record keeping among other purposes as shown in table 4.12 below. As far as quantity of information stored is concerned, 80% of the respondents affirmed that computer has bigger storage capacity than the books.

Table 4.12: Mode of Record Keeping

Mode of Record Keeping	Frequency	Percentage
Books	224	75.17
Computer System	74	24.83
Total	298	100

4.6.2. Carrying out accounting practices

Concerning how accounting practices are carried out, 76.88% (246 out of 320) of the respondents responded that they do so manually while only 23.12% (74 out of 320) use computerized system to do so. Table 4.13 below summarizes this information.

Table 4.13: Mode of carrying out accounting practices

Mode	Frequency	Percentage
Manual System	246	76.88
Computerized System	74	23.12
Total	320	100

As regards calculations of the accounts, 60% of the respondents use calculators, followed by those who do it manually at 25% while those who use computerized system were only 15%. This shows that the use of computer in accounting by the Entrepreneurs is still very low and can be attributed to its high cost or lack of skills of using it. This can be summarized by the table below:

Table 4.14: Mode of carrying out calculations

Mode of Calculation	Frequency	Percentage
Calculators	192	60
Manual Method	80	25
Computer System	48	15
Total	320	100

91.56% of the respondents who use computerized system of accounting believe that retrieval of information is faster when using computer than when using any other method. Also a very high number (87.81%) of those who use books do acknowledge that using computer is faster than using books. The table below best explains this information:

Table 4.15: Speed of retrieval of information

Method	Faster (%)	Similar (%)	Slower (%)
Computer System	91.56%	5.31%	3.13%
Books	7.81%	4.38%	87.81%

When reconciling various accounts in the books of accounts, 59.69% of those who use book-keeping systems responded that the accounts always agree. A higher percentage, 95.94% of those who use computerized system of accounting responded that the accounts always agree. From this information, it is clear that use of computerized system of accounting will ensure that the data kept is the accurate one and therefore computerized system can be trusted. Table 4.16 summarizes this.

Table 4.16: Reconciliation of Accounts

Method	Always Agree	Rarely Agree	Never Agree
Computer System	95.94%	4.06%	0%
Books	59.69%	30.63%	9.68%

As concerns the accuracy of figures when using manual method, calculators and when using sophisticated computerized system, 42.5% of respondents who use manual method reported that the figures are always accurate; 56.25% of those who use calculators reported accuracy of figures; while 93.75% of those who use computerized system also gave the feedback that the figures are always accurate. From this point of view, it can be concluded that the use of computerized system will in many cases bring more accurate information as compared to when the traditional methods (manual and calculators) are used. The table below displays this information:

Table 4.17: Accuracy in Calculation

Method	Always Accurate	Rarely Accurate	Never Accurate
Manual System	42.5%	37.5%	20%
Calculators	56.25%	28.13%	15.63%
Computerized System	93.75%	6.25%	0%

The respondents also gave their experience in terms of speed of carrying out calculations using the various methods. 97.92% of those who use computerized system gave the view that the speed of calculation is very fast; 65.10% of those who use calculators also gave their experience that the

speed of using calculators is very fast; while only 27.50% of those who use manual system experience very fast speed of calculations. This information confirms that the use of computerized system is always faster as compared to other methods and therefore would always bring efficiency and effectiveness in business. This is summarized in the table below:

Table 4.18: Speed of Calculation

Method	Always Fast	Moderately Fast	Very Slow
Manual System	27.50%	25%	47.50%
Calculators	65.10%	20.83%	14.06%
Computerized System	97.92%	2.08%	0%

4.7. ICT and marketing management

4.7.1. Marketing methods

A great number of respondents (55%) use posters to carry out their marketing activities. This was followed by those who use personal selling at 30%, then those who use media at 10% and the least are those who use online in marketing at 5%. This information is represented by the table below.

Table 4.19: Marketing methods used by respondents

Marketing Method	No. of Respondents	Percentage
Posters	176	55
Personal Selling	96	30
Media	32	10
Online	16	5
Total	320	100

From the above information, it is clear that most Entrepreneurs are still using the traditional methods for marketing like posters and personal selling and have not embraced the use of latest technology like media and online marketing.

57.95% of those who use posters find it being very efficient, while those who use personal selling, 64.58% find it very efficient. This is lower than those who use media and online which had 87.5% and 75% respectively reporting efficiency in the methods they use. This shows that the use of media to carry out marketing activities is the most effective method followed by online method. The least efficient method is the use of posters.

4.7.2. Presence of a business website

From the study, it was found that 30 out of 320 respondents (9.38%) have an established Business Website where they interact with the customers, suppliers, employees and other stakeholders. The other group, represented by 90.62%, does not already have the Website. This shows that most of the Entrepreneurs are still behind in terms of using ICT in marketing their products and services and when buying and selling products and services online.

Among those who have an established Business Website, 86.67% of them find the speed of selling to be faster, 10% find the speed to be moderate while 4% say that the speed is slow compared to other methods of selling. This can be summarized by the table below:

Table 4.20: Speed of online selling compared to other methods

Speed	Frequency	Percentage
Faster	26	86.67
Moderate	3	10
Slow	1	4
Total	30	100

66.67% of those who already have an established Business Website report the volume of sales to be large followed by those who find the volume of sales to be average at 26.67%, while those who find the volume to be small are only 6.67%. This shows that if properly utilized by those who know how to use it, the use of Website will always increase the speed of selling the products and services by the businesses and makes these businesses make large volume of their sales without much struggle. This is represented by the table below:

Table 4.21: Volume of sales in using online selling

Volume	Frequency	Percentage
Large	20	66.67
Average	8	26.67
Small	2	6.67
Total	30	100

4.7.3. Market Research

From the study, many Entrepreneurs carry out market research using their mobile phones. This is represented by 61% of the respondents. The least are those who use online to carry out their market research at 8% of the respondents. This is summarized by the help of a table below:

Table 4.22: Method of carrying out market research

Research Method	Frequency	Percentage
Visitation of the Study Area	67	21
Use of Mobile Phones	195	61
Online	26	8
Posting of Questionnaires	32	10
Total	320	100

Among those who use actual visitation of area of study to carry out market research, 43% find it cheap while 57% of them find it costly; for those who use mobile phones to do the same exercise, 92% find it cheap while 8% find it costly; for those who use online method of carrying the same exercise, 95% find it cheap while only 5% find it costly; and those who post questionnaires directly to their respondents, 48% find it cheap while 52% find it costly. This information shows that the use of ICT, which in this case is the mobile phones and online, provides cheaper method of carrying out market research.

As far as time for collection of market information is concerned, a high percentage (98%) of those who use mobile phones reported that they get feedback from their respondents very fast. This was followed by those who use online at 86% while those who use actual visitation of area of study and those who post Questionnaires to their respondents trail at 68% and 40% respectively. This proves that the use of ICT in carrying out market research is faster compared to other methods.

4.8. ICT and security management

4.8.1. Method of storage of information

Asked about the methods used to store business information, most Entrepreneurs were found to be using books (78%). This was followed by those use computer system at 19% and 3% of the respondents declared that they do not keep any records. The table below can summarize this information.

Table 4.23: Method of storage of information

Method used	Frequency	Percentage
Books	250	78
Computer System	60	19
No Records	10	3
Total	320	100

It was reported by 78.2% of those who use books to keep records that unauthorized persons can never access their information while 94.8% of those who use computer system also gave the same information that unauthorized persons would never access their information. This shows that information kept using computerized system is difficult to be accessed by unauthorized persons.

Using books as a way of storing data, it was reported by 88% of the respondents who use this method that their business secrets is secure and their competitors will not access it. 92.6% of those who use computer system that their trade secrets would never be accessed by their

competitors. This information reveals that it is more secretive to use computer system to keep trade secrets than to use books.

4.8.2. Payment of transactions

Most Entrepreneurs pay their transactions using cash. This is represented by 272 out of 320 respondents (85%). This was followed by those who use cheques at 8% (26 out of 320), then those who use Mobile money Transfer at 6% (19 out of 320) and the least are those who use direct bank deposits at 1% (3 out of 320).

Table 4.24: Mode of payment for transactions

Mode of Payment	Frequency	Percentage
Cash	272	85
Cheques	26	8
Mobile money Transfer	19	6
Direct Bank Deposit	3	1
Total	320	100

In terms of security, 61.76% of those who use cash system for payment find it insecure as compared to 38.24% who find it secure. 92.31% of those who use cheques for payments reported that the system is the most secure. For those who use mobile money transfer system, 89.47% find it more secure as opposed to 10.53% who find it insecure. 66.67% of those who use direct bank deposit report high security in payment of the transactions compared to 33.33% who say it is insecure. This shows that it is more secure to use Cheques and Mobile money transfer than to use the other two methods.

Table 4.25: Security of the mode of payment used

Mode of Payment	Security	Frequency	Percentage
Cash	Secure	104	38.24
	Insecure	168	61.76
	Total	272	100

Cheque	Secure	24	92.31
	Insecure	2	7.69
	Total	26	100
Mobile Money Transfer	Secure	17	89.47
	Insecure	2	10.53
	Total	19	100
Direct Bank Deposit	Secure	2	66.67
	Insecure	1	33.33
	Total	3	100

As regards speed of payment, those who use cash system reported the highest number at 94.85% declaring that the speed of payment is fast. This was followed by those who use mobile money transfer at 94.74%, then followed by those who use direct bank deposit at 66.67% and finally those who use cheques at 57.69%. This shows that it is faster to use cash and mobile money transfer for payment and it is the slowest system when cheques are used.

Table 4.26: Speed of payment using various methods

Mode of Payment	Speed	Frequency	Percentage
Cash	Fast	258	94.85
	Slow	14	5.15
	Total	272	100
Cheque	Fast	15	57.69
	Slow	11	42.31
	Total	26	100
Mobile Money Transfer	Fast	18	94.74
	Slow	1	5.26
	Total	19	100
Direct Bank Deposit	Fast	2	66.67
	Slow	1	33.33
	Total	3	100

4.8.3. The use of CCTVs in business premises.

The study revealed that most Entrepreneurs do not use Closed Circuit Televisions in their premises to safeguard their property. This was shown by only 8 out of 320 respondents (2.5%) having adopted the use of CCTVs while the other 312 out of 320 (97.5%) having not adopted the use of the same technology. This could be due to the fact that the technology is expensive to install or due to lack of skills on how to use it or simply due to the mindset that their premises are secure. The table below summarizes this information.

Table 4.27: The use of CCTVs by respondents

Use of CCTVs	Frequency	Percentage
Using	8	2.5
Not Using	312	97.5
Total	320	100

Among those who use CCTVs 87.5% of them believe that their assets are secure while only 12.5% doubt if they are secure. Among those who don't use CCTVs, 91.99% doubt if their assets are secure and only 5% believe that they are secure. This shows that the use of CCTVs in safeguarding the premises will always improve the security of business against theft of physical assets by outsiders or even employees.

4.9. Respondents' perception on the influence of ICT on business management

The study sought to find out the level of agreement on the perceived indicators on the fact that ICT has positive influence on management of trading businesses. This would give information on how the respondents, both those who have adopted the use of Information Communication Technology and those who have not, view the importance of using ICT in business. The findings are revealed in the Table below:

Table 4.28: Respondents' views on the fact that the use of ICT on business management has a positive influence

		Strongly Agree (%)	Agree (%)	Undecided (%)	Disagree (%)	Strongly Disagree (%)
Human	Resource					
Management		44	31	3	12	10
Accounts Management		51	28	9	8	4
Marketing Management		46	22	5	20	7
Security management		62	21	3	9	5

From the above, it is clear that most respondents strongly agree that the use of ICT in business will have a positive influence on its management. This is shown by 44% strongly agreeing on the influence of ICT on Human Resource Management as opposed to 10% who strongly disagree. As regards Accounts Management, 51% of the respondents strongly agree on the positive influence of ICT on management of Accounts as opposed to 4% who strongly disagree. 46% of the respondents strongly agree that ICT use in Marketing brings about positive influence as opposed to 7 % who strongly disagree. Also 62% of the respondents strongly agree that the use of ICT in Security Management brings about positive performance; only 5% strongly disagree to this.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSION, AND RECOMMENDATIONS

5.1 Introduction

The basic purpose of this chapter is to give the summary, conclusions and recommendation of the study. This was based on the research findings that has been presented and discussed in the previous Chapters.

5.2 Summary of the findings

The study aimed at investigating the influence of Information Communication Technology on Management of Trading Businesses in Ainamoi Sub-county. The task included: to determine the influence of Internet use on management of trading businesses in Ainamoi Sub-County; to examine how the use of computer Application Software influences management of trading businesses in Ainamoi Sub-County; to determine the extent to which the use of mobile phones influences management of trading businesses in Ainamoi Sub-County; and to evaluate the influence of CCTV use on management of trading businesses in Ainamoi Sub-County.

The researcher reviewed previous studies with a view to establish research gap which the present study sought to bridge. This was done through library research. The procedure included reading, evaluating the methodology employed in terms of design choice, target population, sample and sampling procedure, data collection instruments (that is suitability, validity and reliability), data collection procedures, data analysis, findings and recommendations. The study benefited so much from the literature review for it guided the present study by pointing to areas that needed to be investigated.

The study employed quantitative research as the main approach to guide the study. The target population was 1936 entrepreneurs, out of which a sample of 332 entrepreneurs was selected by stratified sampling followed by simple random sampling. The research instrument used for data collection was closed ended Questionnaire which was distributed to the respondents and collected after a week. Data analysis was carried out immediately after collecting the data from the field. The data was summarized into frequencies and percentages and presented in form of tables.

The study revealed that most of the respondents were between the age of 20-30 years (45.5%) and 30-40 years (25%). Most of the respondents were males (65%) while their counterpart females were 35%. The findings further revealed that majority of the respondents (55%) have

attained tertiary level of education. It was also noted that 80% of the respondents have trained in an ICT related course. The findings revealed that the adoption of ICT devices by the respondents is still very low. The adoption of computer was found to be 25% while that of CCTVs was found to be 5%. It is only Mobile phones, which have gained 100% adoption.

The findings revealed that the use of mobile phones for communication is the most efficient method where 100% of the respondents reported very efficient when it is used. This was followed by the use of e-mail where 85.96% of the respondents reported it being very efficient. This shows that the use of the two ICT modes of communication brings about efficiency in terms of speed and reliability of the information delivered.

Most of the enterprises that participated (75%) employ less than 20 employees and the advertisement of job vacancies is mostly done through written media. The study found out that it is more efficient to use Website to advertise job vacancies than any other mode. Majority of respondents keep employee records in books, which is found to be less efficient compared to keeping records using computerized system. Training of employees using indoor seminars is widely used and was found to be the most efficient method compared to outdoor workshop, which is also widely used, and online training, which is not so much employed by the respondents.

The study further revealed that 93% of the respondents keep business records and 5.17% of these use books of accounts while only 17.83% use computerized system. It was confirmed by 80% of the respondents that using computerized system is more efficient as it has a bigger storage capacity than books, carry out calculations faster than calculators and manual methods of calculations, brings more accurate figures than the calculators and manual methods. Also 96% of those who use computerized system believe that reconciliation of various accounts is always accurate while for those who use books, only 59.82% believe on the same.

The study also found that 90.62% of the respondents do not have a business website and therefore carry most of their business activities using traditional methods like posters, media and personal selling. As far as efficiency in advertising is concerned, those who use media method reported the highest at 87.5% while those who use online, 75% reported the same. As far as volume of sales and speed of selling is concerned, it was found that online selling sell a larger volume at a faster rate compared to other methods. The study further revealed that most respondents use mobile phones to carry out their market research at 61% compared to actual visitation of the area of

study, posting of Questionnaires, and online research. It was also found out that the use of mobile phones and online research are more efficient in terms of time and cost respectively compared to other methods.

The study further depicts most respondents use books to store their delicate data compared to those who use computerized system. 78.2% of those who use books believe that their information is secure from unauthorized persons from their competitors. This was smaller proportion compared to those who use computerized system where 94.8% believed that their information is secure.

Further, most respondents (85%) use cash system of payment of transaction either by their customers or to their suppliers compared to other methods like cheques, mobile money transfer, and direct bank deposit. They also acknowledged that the use of cash for payment is the most insecure method compared to direct bank deposit and mobile money transfer which are the most secure methods.

But as far as speed of payment is concerned, it was found that cash system of payment is the fastest method compared to cheques which is the slowest method of them all. A very small percentage of respondents (2.5%) have CCTVs installed in their premises. 87.5% of this believe that their physical assets are secure while only 5% of those who do not have CCTVs believe the same.

It was found out from the study that a higher percentage of respondents have faith on the use of ICT in management that it brings about efficiency and greater performance. 44% strongly agree that the use of ICT in Human Resource Management is efficient compared to 10% who strongly disagree on the same.

On the side of Accounts Management, 51% of the respondents highly agree on the efficiency of ICT compared to 4% who strongly disagree. Also 46% of the respondents strongly agree on the use of ICT in Marketing Management to bring about efficiency compared to 7% who strongly disagree on the same. Further, 62% of the respondents highly agree that ICT brings more efficiency in Security management compared to 5% who strongly disagree.

5.3 Conclusions on the Study

Based on the above findings, the following conclusions were made on Influence of Information Communication Technology on Management by Trading Businesses in Ainamoi Sub-County, Kericho County, Kenya.

The study found that most of the respondents have not adopted the use of ICT in their businesses. This could be attributed to the fact that these devices are expensive to them, where most of them find it better to use the amount they were to use in buying these devices in expanding their businesses, or maybe due to lack of skills on how to use them. Among those who have adopted the use of ICT, it was found that more efficiency is brought about in Human Resource Management especially in Recruitment of employees and keeping of employee records. It is only in carrying out of training where online training is not found to be efficient compared to seminars and workshops.

The research findings also found out that most respondents keep business records but very few of them use computerized system while others use books. The use of computerized system of accounting was found to be more efficient than the use of books of accounts. This is because computerized system has bigger capacity than books, brings about accurate figures in calculations, and is faster when carrying out calculations and when retrieving information. It also brings about perfect reconciliation of various accounts hence is more reliable than using books and calculators or manual system for calculations.

As far as Marketing Management is concerned majority of the respondents are still using traditional methods like posters and personal selling. It was found more efficiency is brought about when Information Communication Technology is employed. This was revealed by respondents admitting that there is high efficiency in using ICT in advertising, having larger volume of sales and carrying out selling at a faster rate. Respondents also admitted that using mobile phones to carry out market research or using online market research is more cost effective and saves time.

It was also found out from the research that it is more secure to keep delicate information about the business using computerized system than keeping them in the books. This, the respondents say, bars unauthorized persons from assessing their information and making it impossible for the competitors to access the trade secrets of the business. It was further found out that it is more secure to use mobile money transfer and direct bank deposit to pay for transactions than to use cash system. It was also revealed by the study that the use of Closed Circuit Televisions in Business premises brings about enhanced security of physical assets than when the system is not employed.

Generally, the study showed that respondents have strong agreement that the use of ICT in Human Resource Management, Accounts Management, Marketing Management and Security Management brings about efficiency and greater performance in business.

5.4.1 Recommendations for policy formulation

On the basis of the above conclusions, the following recommendations are made for the Influence of Information Communication Technology on Management of Trading Businesses in Ainamoi Sub-County, Kericho County, Kenya.

From the findings, the study recommends that businesses should consider employing the use of Information Communication Technology in their business activities. They should not see adopting of this technology as a cost but should see it as an investment, which in the long run will contribute in the efficiency and profitability of their businesses through better performance. The use of ICT will reduce the cost of operation since it is cheaper to carry out online recruitment of employees, train employees online, advertise the products and services carry out market research and employs fewer people since most activities will be automated.

Businesses are further advised to consider adopting ICT in accounting practices since it would always bring about accurate figures at a faster rate, which will always reduce the chances of errors, which in most cases make the business to experience losses. The use of computerized system in accounting will also reduce the chances of fraud by the employees since the various ledgers will always be showing that there is a problem when they fail to reconcile.

The study further advises business owners to employ the use of ICT in marketing where they can be selling and buying their products online through Electronic Commerce. This will increase the speed of selling therefore increasing customer satisfaction and enhancing customer loyalty. This by extension will increase the sales volume of the organization and ultimately increases profitability.

Having a business Website is one way of making your business known to your potential prospects and suppliers. This will reduce the cost of advertising since it would be automatic where the customers will be accessing the information about your products and even place orders without you incurring a single cent. Through the same site, a business can interact with the customers and even carry out a market research at a faster rate and at a cheaper cost by simply asking them some relevant questions.

Business owners are further advised by the study to employ the use of CCTVs in their premises. This will bring about enhanced security of the physical assets to avoid theft and pilferage. The use of CCTVs will also enhance management of employees by Human Resource Manager since they will be monitored wherever they work without necessarily having the Human Resource Manager being physically present.

5.4.2 Suggestions for Further Studies

This study sought to assess the Influence of Information and Communication Technology on Management of Trading Businesses in Ainamoi Sub-County, Kericho County, Kenya, attempting to bridge the gap in knowledge that existed. Although the study attained this, it mainly focused on four areas of management operations, these were: Human Resource Management, Accounts Management, Marketing Management and Security Management. There is need to replicate the study using other areas of management operations so as to find out if the use of ICT in management influences the other management operation areas.

The study also concentrated on trading enterprises. A similar study can be done on other sectors like manufacturing and service industries so that a general conclusion can be drawn. Another study can also be carried out from other counties of Kenya or from other countries so that comparison can be done and a general conclusion be drawn. Another study can also be done on the level of Adoption of Information Communication Technology by businesses.

5.5 Contribution of the study to the body of knowledge

The study has contributed to the body of knowledge in various ways as shown below:

Research Question	Contribution to the body of Knowledge
1. How does the Internet use influence management of trading businesses in Ainamoi Sub-County?	The use of internet brings about reduced cost of advertising, increased sales volume, increased speed of selling, cheaper and faster marketing research. It also enhances faster and cheaper process of recruitment of employees
2. How does computer	The use of Computer Application

Application Software
influence management of
trading businesses in
Ainamoi Sub-County?

Software brings about accuracy in calculations, enhances speed of calculation of figures, brings about reconciliation of ledger accounts, makes it easier when retrieving employee data. It also helps in prevention of delicate data from being accessed by unauthorized persons, bars competitors from getting trade secrets of the business

3. To what extent does the use of mobile phones influence Management of trading businesses in Ainamoi Sub-County?

The use of mobile phones ensures faster and safer mode of money transfer, faster and cheaper market research, faster and reliable passing of information.

4. What contribution does the use of CCTV have on management of trading businesses in Ainamoi Sub-County?

The use of CCTVs reduces the theft of physical assets by employees and outsiders and ensures efficiency when supervising employees.

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APPENDICES

Appendix I: Questionnaire

UNIVERSITY OF NAIROBI
RESEARCH QUESTIONNAIRE

I am a student of The University of Nairobi taking Master of Arts in Project Planning and Management. I am carrying out a research on ‘Influence of ICT use on Management of Trading Enterprises in Ainamoi Sub-County.’ It is a requirement to carry out a research project as part of the syllabus before completion of the program. I therefore request that you fill this questionnaire to enable me carry out this research successfully. Please answer all the questions honestly so that I may be able to draw a correct conclusion from the study. Do not indicate your name or the name of your enterprise anywhere in this questionnaire. The information you give will be treated with utmost confidentiality and will not be revealed to anybody but is purely for academic purpose. Thanks in advance.

(Use a \surd to affirm a statement)

RESPONDENT’S PERSONAL DETAILS

What is your age in years?

- 10-20 yrs []
- 20-30 yrs []
- 30-40 yrs []
- 40-50 yrs []
- 50 yrs and above []

Gender: Male []

Female []

Level of Education: Primary []

Secondary []

Tertiary []

Have you done any training in ICT? Yes [] No []

BUSINESS INFORMATION

1) a) Which one of the following ICT devices do you use in your organization? (You can tick more than one) Mobile Phone [] Computer [] CCTV []

b) Which mode of Communication do you use in your organization?

Mobile phone [] E-mail [] Written memo [] Word of Mouth []

c) How do you rate the method of communication above?

Very efficient [] Efficient [] Moderately Efficient [] Inefficient []

2) (a) How many employees do you have?

0-20 [] 20-40 [] 40-60 [] 60-80 [] 80-100 [] 100 and above []

(b) How do you normally advertise for job vacancies?

Using Newspapers [] Using Posters [] Using Website []

(c) How do you find the above method of advertisement?

Efficient [] Somehow Efficient [] Inefficient []

(d) How do you keep employee records?

Using books [] Using Computer system [] I don't keep []

(e) How efficient is the method used above when locating an employee and in storage capacity?

Efficient [] Somehow Efficient [] Inefficient []

(f) How do you normally carry out employee training?

Indoor Seminars [] Outdoor Workshops [] Online Training []

(g) How do you find the approach you use in terms of effectiveness in training, time usage and cost incurred?

Efficient [] Somehow Efficient [] Inefficient []

3) (a) Do you keep the business records? Yes [] No []

(b) If you keep records, how do you do so?

Using Books [] Using Computer []

(c) What quantity of information can the computer store compared to that of Books?

Larger [] Smaller [] No difference []

(d) How do you carry out accounting practices?

Manually [] Using Computer []

(e) How do you carry out calculations of your accounting figures?

Using Calculators [] Manually [] Using Computer []

(f) How do you find retrieval of information using computers compared to books?

Faster [] Slower [] Similar []

(g) How do the accounting statements agree when using the above method of accounting?

Always agree [] rarely agree [] Never agree []

(h) How do you find accuracy of the figures when using the above method of accounting?

Always accurate [] Rarely Accurate [] Never Accurate []

(i) How do you find the speed of carrying out calculations using the above method?

Very fast [] moderately fast [] Very slow []

4) (a) How do you carry out your Marketing?

Posters [] Personal selling [] Media [] Online []

(b) How do you find the above method in terms of reaching customers?

Very efficient [] Efficient [] Moderately Efficient [] Inefficient [] Very Inefficient []

(c) Do you have an established website where you sell you products online? Yes [] No []

(d) If the answer to 'C' above is yes, how do you find:

i. The speed of selling your products? Faster [] Moderate [] Slow []

ii. The volume of products sold? Large [] Average [] Small []

(e) How do you carry out Market Research?

Actual Visitation of study area [] Use of Mobile phones [] Online [] Posting
Questionnaires []

(f) How do you find the above method in terms of:

i.) Cost? Very Cheap [] Cheap [] Moderately Cheap [] Expensive [] Very Expensive []

ii.) Time? Very fast [] Fast [] moderately fast [] Slow [] Very Slow []

5) a) Which method do you use for the storage of your business information?

Books [] Computer [] I don't keep []

b) When using the above method, do you think unauthorized persons get access to this information? Yes [] Sometimes [] Never []

c) Using the method stated in 4 (a) above, do you think the trade secrets will be able to be known by your competitors? Yes [] Sometimes [] Never []

d) How do you normally pay suppliers and how do your customers pay for the transactions?
Cash [] Cheque [] Mobile money transfer [] Direct Bank Deposits []

e) When the above method is used, how do you find in terms of:

i) Security? Secure [] Insecure []

ii) Speed? Fast [] Slow []

f) Do you employ the use of CCTVs in your business premises?

Yes [] No []

g) If you employ the use of CCTVs, do you think your physical assets are secure?

Yes [] I doubt [] Somehow [] No []

h) If you don't use CCTVs, do you think your assets are secure?

Yes [] I doubt [] Somehow []

6) In your own view, do you agree that the use of ICT in the following areas of business management has a positive influence? :

a) Human Resource Management

Strongly agree [] Agree [] Disagree [] Strongly Disagree []

b) Accounts Management

Strongly agree [] Agree [] Disagree [] Strongly Disagree []

c) Marketing Management

Strongly agree [] Agree [] Disagree [] Strongly Disagree []

d) Security Management

Strongly agree [] Agree [] Disagree [] Strongly Disagree []

Thanks for Your Cooperation