THE EFFECT OF ELECTRONIC TAX REGISTERS ON VALUE ADDED TAX ADMINISTRATION IN KENYA

A case study of Hotels in Nairobi County

BY
FRIDAH WANJA MUGO

A RESEARCH PROJECT SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF MASTER OF BUSINESS ADMINISTRATION DEGREE (MBA) SCHOOL OF BUSINESS, UNIVERSITY OF NAIROBI.

NOVEMBER, 2013
DECLARATION

I declare that this research project is my original work and has never been presented in any other University for the award of a degree and that all statements in this research project whether in writing or illustration are true to the best of my knowledge.

Signature ........................................ Date ...........................................

FRIDAH WANJA MUGO

D61 / 76113 / 2012

This research project has been submitted for examination with my approval as a University supervisor.

Signature: ........................................ Date ...........................................

MRS. WINNIE NYAMUTE
Lecturer
Department of Finance and Accounting
School of Business
University of Nairobi
DEDICATION

This Research Project is dedicated to my Dad Mr. Reuben Mugo, who taught me that the best kind of knowledge to have is that which is learnt for a reason. It is also dedicated to my Mom Mrs. Loise Mugo, who taught me that even the biggest task can be accomplished if it is done one step at a time.
ACKNOWLEDGEMENT

I would like to take this opportunity to acknowledge the support and contribution of various sources while working on this research project.

First and foremost, I would like to thank the Almighty God for his care and protection throughout my MBA course.

Secondly, I acknowledge with gratitude the assistance, guidance and advice of my supervisor Mrs. Winnie Nyamute, her timely and invaluable guidance throughout this research project was of great help.

Thirdly my sincere and special appreciation goes to my research assistants who helped me in typing and collecting data my sisters Linda and Lina and my brother Daggie.

Finally, I thank The University of Nairobi for making my dream come true by equipping me with all the required knowledge.
ABSTRACT

This study aimed at assessing The Effect of Electronic Tax Registers (ETRs) in Value Added Tax administration in Kenya. The study sought to determine how ETRs have aided in administration of VAT by Kenya Revenue Authority. Since many researchers have concentrated on tax evasion and tax avoidance, a lot has been desired especially in the area of VAT administration, tax audit time and cost as well as processing of VAT returns. The study objective was therefore to determine the effect of using Electronic Tax Registers (ETRs) in improving VAT administration in Kenya.

The population of study was 90 Hotels in Nairobi County using ETR Machines and the sample consisted of 30 registered hotels which were selected using stratified random sampling. The main instruments used in collecting primary data were questionnaires. Secondary data was also used to augment primary data. The research focused on a survey on taxpayers using Electronic Tax Registers (ETRs). The purpose is to find out their opinions on aspects related to ETRs on VAT administration.

The data collected was analyzed using descriptive statistics like percentages, standard deviations, frequency tables among others the Statistical Package for Social Sciences (SPSS) Version 17 software was used. From the research findings of the study it was identified that introduction of ETRs has greatly enhanced collection and filing of VAT as well as it has reduced tax audit time and cost and staff involved. Business owners in Nairobi County have also witnessed an increased improvement in collection and administration of revenue by the government as well as tax policies in operation of business.
TABLE OF CONTENTS

Declaration ........................................................................................................................................ ii

Dedication ...................................................................................................................................... iii

Acknowledgement ........................................................................................................................ iv

Abstract ......................................................................................................................................... v

List of tables .................................................................................................................................... ix

List of figures .................................................................................................................................. x

List of acronyms ............................................................................................................................ xi

CHAPTER ONE: INTRODUCTION .................................................................................1

1.1 Background of the Study .................................................................................................... 1

1.1.1 Electronic Tax Register (ETR) .................................................................................. 2

1.1.2 Tax Administration ....................................................................................................... 2

1.1.3 Effects of ETRs on Tax Administration ........................................................................ 3

1.1.4 The Hotel Industry in Kenya ....................................................................................... 3

1.2 Research Problem ............................................................................................................. 4

1.3. Research objective ............................................................................................................. 6

1.4. Value of the research ......................................................................................................... 7

CHAPTER TWO: LITERATURE REVIEW ......................................................................9

2.1 Introduction ......................................................................................................................... 9

2.2 Theoretical Review ............................................................................................................ 9

2.2.1 Optimal Tax Theory .................................................................................................... 9

2.2.2 Theory of equal sacrifice ............................................................................................ 10
2.2.3 Benefit theory of taxation................................................................. 11
2.2.4 Rational expectations theory of technology adoption ......................... 11
2.3 Review of Empirical Studies ............................................................. 12
  2.3.1 Tax Auditing and Administration ................................................... 15
  2.3.2 Electronic Auditing and Tax Administration ..................................... 16
2.4 Determinants of Tax Administration .................................................. 17
2.5 Summary of the Literature Review .................................................... 18

CHAPTER THREE: RESEARCH METHODOLOGY ............................... 19
3.1 Introduction ......................................................................................... 19
3.2 Research Design ................................................................................. 19
3.3 Population of Study ........................................................................... 19
3.4 The Sample ......................................................................................... 20
3.5 Data Collection .................................................................................. 21
3.6 Data analysis ...................................................................................... 22

CHAPTER FOUR: DATA ANALYSIS, RESULTS AND DISCUSSION ........ 24
4.1 Introduction ......................................................................................... 24
4.2 Research Findings .............................................................................. 24
  4.2.1 The job roles ................................................................................. 24
  4.2.2 Experience with the ETR Machines .............................................. 25
  4.2.3 Time taken before ETRs Introduction ........................................... 27
4.3 Descriptive Statistics .......................................................................... 31
4.4 Effect of Using ETRs in VAT processing in Hotels ................................ 32
4.5 The level of education of the respondents .......................................... 34
4.6 Time taken after introduction of ETRs .................................................................36
4.7 Discussions and Interpretation of Findings ..........................................................37

CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS ...39

5.1 Introduction ............................................................................................................39
5.2 Summary of the findings .......................................................................................39
5.3 Conclusions ...........................................................................................................41
5.4 Limitations of the study .......................................................................................43
5.5 Recommendations ...............................................................................................44
  5.5.1 Policy Recommendations ...............................................................................44
  5.5.2. Recommendations for further research ....................................................45

REFERENCES ............................................................................................................46

APPENDICES ............................................................................................................ i
Appendix I: Questionnaire ......................................................................................... i
Appendix II: List of Hotels in Nairobi County .............................................................. v
LIST OF TABLES

Table 1: Job roles ........................................................................................................... 24
Table 2: Experience with ETR Machines ........................................................................ 25
Table 3: Before the introduction of the ETRs, how much time were the respondents
taking to prepare VAT returns. ..................................................................................... 27
Table 4: Descriptive statistics ....................................................................................... 28
Table 5: Correlations .................................................................................................... 29
Table 6: Descriptive Statistics ....................................................................................... 31
Table 7: After the introduction of ETR Machines how much time are you taking to
prepare VAT returns ..................................................................................................... 32
Table 8: Effect of Using ETRs in VAT processing in Hotels ......................................... 33
Table 9: The level of education of the respondents ....................................................... 34
Table 10: Before the introduction of ETRs how much time were you taking to prepare
VAT returns .................................................................................................................... 35
LIST OF FIGURES

Figure 1: Experience with ETR Machines.................................................................26

Figure 2: The pie chart below indicates how much time the hotels used to take to prepare
their VAT returns before the introduction of ETR Machines...............................30

Figure 3: Before the introduction of ETRs how much time were you taking to prepare
VAT Returns.................................................................35

Figure 4: After introduction of ETRs how much time are you taking to prepare VAT ... 36
# LIST OF ACRONYMS

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BC</td>
<td>Before Christ</td>
</tr>
<tr>
<td>CPA</td>
<td>Certified Public Accountant</td>
</tr>
<tr>
<td>EAC</td>
<td>East African Community</td>
</tr>
<tr>
<td>EDR</td>
<td>Effective Date of Registration</td>
</tr>
<tr>
<td>ETR</td>
<td>Electronic Tax Register</td>
</tr>
<tr>
<td>GOK</td>
<td>Government of Kenya</td>
</tr>
<tr>
<td>ICT</td>
<td>Information and Communication Technology</td>
</tr>
<tr>
<td>IMF</td>
<td>International Monetary Fund.</td>
</tr>
<tr>
<td>IS</td>
<td>Information Systems</td>
</tr>
<tr>
<td>KRA</td>
<td>Kenya Revenue Authority</td>
</tr>
<tr>
<td>MoF</td>
<td>Ministry of Finance</td>
</tr>
<tr>
<td>UK</td>
<td>United Kingdom</td>
</tr>
<tr>
<td>VAT</td>
<td>Value Added Tax</td>
</tr>
</tbody>
</table>
CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

The first known system of taxation was in Ancient Egypt around 3000 BC - 2800 BC in the first dynasty of the Old Kingdom. Records show that the Pharaoh would conduct a biennial tour of the kingdom, collecting tax revenues from the people. Other records are granary receipts on limestone flakes and papyrus—Early taxation is also described in the Bible. In Genesis (chapter 47, verse 24 - the New International Version), it states "But when the crop comes in, give a fifth of it to Pharaoh. The other four-fifths you may keep as seed for the fields and as food for yourselves and your households and your children". Joseph was telling the people of Egypt how to divide their crop, providing a portion to the Pharaoh. A share (20%) of the crop was the tax (www.wikipedia.com).

Later, in the Persian Empire, a regulated and sustainable tax system was introduced by Darius I the Great in 500 BC; the Persian system of taxation was tailored to each Satrapy (the area ruled by a Satrap or provincial governor). At differing times, there were between 20 and 30 Satrapies in the Empire and each was assessed according to its supposed productivity. It was the responsibility of the Satrap to collect the due amount and to send it to the emperor, after deducting his expenses (the expenses and the power of deciding precisely how and from whom to raise the money in the province, offer maximum opportunity for rich pickings). The quantities demanded from the various provinces gave a vivid picture of their economic potential. For instance, Babylon was assessed for the highest amount and for a startling mixture of commodities; 1,000 silver talents and four months supply of food for the army. India, a province fabled for its gold,
was to supply gold dust equal in value to the very large amount of 4,680 silver talents. Egypt was known for the wealth of its crops; it was to be the granary of the Persian Empire (and, later, of the Roman Empire) and was required to provide 120,000 measures of grain in addition to 700 talents of silver. This was exclusively a tax levied on subject peoples. Persians and Medes paid no tax, but, they were liable at any time to serve in the army. (www.wikipedia.com).

1.1.1 Electronic Tax Register (ETR)

The ETR programme is one among many tax administration reform measures that the KRA has undertaken. ETRs were introduced in June 2004 to ensure that sales are properly recorded by registered taxpayers in the country (Price Waterhouse Coopers, Oct. 2005). Electronic Tax Register (ETR) is a device approved by the government to record and issue fiscal data of goods and services sold. It is fitted with a memory that is placed in a permanent transparent substance (mass) that allows single recording data for the program for the register of operations. Its use should negate the possibility of erasing its fiscal data. Each ETR is identified by a single unique number assigned by the government. ETRs record sales at the point of sale thus they are best placed to record VAT payable after every period. Every businessman is therefore an informal revenue collector for the government and in fact the penalties of late submission are costly.

1.1.2 Tax Administration

Tax administration are the guidelines policies, structures, processes and measures undertaken by the government to ensure the successful collection and remittance of the revenue to authorities within the minimum period of time as well minimum costs been incurred in collection to safeguard the government interest in productivity and efficiency
as one of the cannons of taxation. Administration is one of the key issues that
government puts in place as regards to the collection of taxes in order to ensure the
intended purpose of the legislation. In VAT the administration strategies include ETR
Machines, VAT PIN’s, filling of monthly VAT returns with penalties for non-
compliance, use of VAT agents to withhold VAT and latter submit it, use of VAT
certificate to represent payment, VAT refunds as well as VAT audit in clients business.

1.1.3 Effects of ETRs on Tax Administration

The Effects of ETR Machines on the Tax Administration in Kenya have been identified
by the way ETR Machines have helped the government of Kenya to solve the problem of
increased costs and time consumed in administering tax in Kenya. ETRs have also helped
in reducing tax avoidance and tax evasion by companies in Kenya which is the reason
why they were adopted since they contribute positively in the Tax Administration in
Kenya. Tax Administration is one of the key issues that government puts in place as
regards to the collection of taxes in order to ensure the intended purpose of the legislation
is met. Kenya now has solved many issues which are associated with VAT and hence
increasing its Tax Collection.

1.1.4 The Hotel Industry in Kenya

This study is relevant to the environment in Kenya today since the ETR Machines are
being used in many companies and are helping the government of Kenya to solve many
corrupt cases related to VAT collection and remittance. The study also suggests what
needs to be done in order to improve the VAT Administration in Kenya so as to save the
government time of collecting taxes and also increase the amount collected as VAT in the
country. The Hotel Industry has also benefited from the ETR Machines in that it has been able to save the time taken to prepare and submit the VAT returns also it has been able to save on the auditors time since they only review the ETR Machines unlike in the past when they used to do their audit manually.

1.2 Research Problem

The Electronic Tax registers (ETRs) were introduced in Kenya with a main aim of combating vices that were mainly associated with collection of taxes, tax evasion and avoidance, filling of wrong VAT returns and claiming of underserved tax refunds and other costs associated with administration of VAT. The Kenya Revenue Authority focuses on effective method of revenue collection so as to meet the country’s budget revenue target. The tax base in Kenya as in most sub-Saharan African countries is extremely low. So far attempts to increase tax revenue have focused on closing the ‘taxation gap’ and expanding the tax base. The main policies recommended by the IMF have led to trade liberalization, the transition from a sales tax to a system of VAT (IMF Nov 2005). Such policies have been adopted by most African countries with Kenya being no exception.

Kenya is ranked among low income countries or low compliance countries with a hard task of ensuring efficient and effective tax administration in order to ensure tax compliance, hence raising more revenue. Administration of tax in Kenya is by Kenya Revenue Authority established through an Act of Parliament on July 1st 1995 (Cap 469). Kenya Revenue Authority is supposed to promote compliance with Kenya’s tax, ensure responsible enforcement by highly motivated and professional staff thereby maximizing revenue collection at the least possible cost for the social economic well being of
Kenyan’s (CIAT, 2006) To achieve maximum tax collection the government had to use ETRs for recording tax collected at the point of sale of the VAT levied products and services. All the goods or services sold are receipted through the ETRs therefore the record of the VAT on the products sold is kept. The information kept is used in auditing by the Kenya Revenue Authority (KRA website).

The ETRs are used in recording VAT collected on behalf of the government by businesses. However it is also being used in reducing audit time. This research project is aimed at solving the problem ‘How effective has the electronic tax registers been in VAT administration in Kenya by the Kenya Revenue Authority’.

Considering the significance of tax administration, many studies have been conducted in some developing and transitional countries with respect to the main VAT administration tasks. These studies include Jantscher (1990); Edmiston and Bird (2004); Bird and Gendron (2005). These papers assessed how Tax administrators in developing and transitional countries perform their duties and how effective taxpayer requirements differ from the legislation. More specifically, the analysis focused on practices of different developing countries with respect to taxpayer identification, invoicing, filing and payment process, control of filing and payments, refunds, audits and penalties. In addition, the costs of VAT administration were briefly examined in the case of Jantscher’s (1900) study. The main conclusion of these studies is that VATs prevailing in developing countries were quite different from the broad based tax discussed in public finance literature and that administrative problems have a major contribution to this divergence. Administrative problems, in turn, may be partly caused by administrative resources constraint.
VAT administrative costs can include costs incurred by tax authorities in performing the tasks entrusted in them. In developing countries, estimates of VAT administrative costs are. In fact, as a measure of efficiency, some governments attempted to develop percentages of administrative costs to the revenue generated by taxes. In the case of VAT, (Bird et al 1990) indicated that fragmentary data, supplemented by the impressions of administrators, suggest that administrative costs usually range between one and two percent of the VAT revenues collected. In addition to the administrative activities and their availability of administrative sources, VAT administration deals with issues of such administrative organs like should administer the tax. Of particular importance for this paper is the VAT administrative organ. It suffices, however, to note that for a successful VAT the significance of appropriate institutional setup with proper human and material deployment must not be underestimated.

In respect of the VAT administrative organs, as (Vazquez et al 2005) noted the assignment of responsibilities ought to be seen as an element that must interact and be compatible with a decentralized financial system. The decision on who should administer VAT should be made within the framework of the overall fiscal system, particularly the assignment of VAT. The research gap exists in the effect of ETR Machines in Administration of tax as past studies (Magutu .et. al 2010) focused on how ETRs assisted in processing the returns. The study therefore sought to answer the question ‘How effective are ETRs in combating tax vices in tax Administration?

1.3. Research objective

To determine the effect of using Electronic Tax Registers (ETRs) in improving VAT administration in Kenya.
1.4. Value of the research

**Government officials (Kenya Revenue Authority)**

The Findings of this study will help them to measure the extent to which they should rely on the ETR Machines to administer tax collection. They will therefore be able to emphasize its adoption in firms with an annual turnover exceeding 3 million if it is effective. The study will also show how much time and cost is saved while collecting these taxes.

**Auditors**

This research will help them in regards to saving audit time as well as audit cost. It will help auditors understand the how of ETR Machines can assist them to do sales audit. The extent to which these machines influence audit time will help auditors to plan their audit time as well as resources used during auditing effective use of ETRs will assist in reducing the total audit risk that is inherent, detention and control risks.

**Other Researchers**

This study will add to the existing literature in this topic. The findings and conclusions made at the end of this study will form a base for criticism or for building conclusions. The study also stimulates further research in the area of taxation.

**Business persons**

It will assist business persons in knowing the merits and demerits derived from adopting ETR Machines. The study compares the benefits derived from the usage of ETRs against the cost of acquiring it. This will therefore help such business persons make informed decisions regarding the acquisition of ETR Machines.
CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter is devoted to reviewing literature relevant to the current study on ETRs and Tax Administration. It provides a critical look at the work that has been done by other researchers which is related to this study. Relevant literature is presented and discussed under different sub-sections as outlined below. The section gives a review of theoretical and empirical literature. The section is finalized with a conclusion.

2.2 Theoretical Review

To fulfill the objective of this study, theories were employed to guide the study. Theories are important in any research study since they provide a model to test concepts and a framework to guide the study. The following theories were employed: optimal tax theory, theory of equal sacrifice, benefit theory of taxation and rational expectations theory of technology adoption. These theories are discussed here under.

2.2.1 Optimal Tax Theory

Optimal tax theory is based on the foundational work of (Ramsey et al., 1928). The standard theory of optimal taxation posits that a tax system should be chosen to maximize a social welfare function subject to a set of constraints. The social planner is posited as a utilitarian: that is, the social welfare function is based on the utilities of individuals in the society. Optimal tax theory is concerned with the ideal level and form of economic redistribution. The optimal tax theory seeks to determine how government can maximize social welfare through taxes and transfers, without increasing the sacrifice on the part of tax payers. Whether conscious or not, optimal tax theory actually embodies a resource
egalitarian view of distributive justice to a large extent. However, the reasoning behind the theory’s principles emphasizes incentives, efficiency, and the information that choices reveal about individual wellbeing. This theory indicates that optimal taxation is a function of tax charge and how this tax is collected to ensure fair redistribution of welfare. This theory was relevant to this study since ETRs were introduced with the aim of increasing tax administration efficiency. This indicates that if ETRs reduce tax audit cost and time it would also contribute to VAT being optimal.

2.2.2 Theory of equal sacrifice

Equal sacrifice theory which is based on the works of (Seligman, 1948) holds that each taxpayer should make the same sacrifice of utility that he or she obtains from income. The magnitude of a person’s sacrifice depends not only on the size of the tax payment but also on the person’s income and other circumstances. This principle is often used to justify introduction of taxes and methods of payment. This theory leads to two corollary notions of equity: vertical equity and horizontal equity. Vertical equity states that a person with a greater ability to pay taxes should contribute a larger amount. Horizontal equity states that taxpayers with the same ability to pay should contribute the same amount in taxes. Equal sacrifice also posits that taxpayers should not be overburdened by taxation and hence taxes and methods of collection should be economical. Taxes have economic effects, and these effects entail social consequences. The choice of the taxes to be laid and rates at which they are to be applied expresses a preference for one set of economic effects, and hence of social consequences, to another. The theory of taxation, progressive or other, and the method of collection should correspond to these facts. This theory was relevant to the study since it gave the researcher a way to evaluate whether
introduction of ETRs has brought more sacrifice in utility on part of taxpayers and whether it has brought positive contributions in terms of reducing cost and time of compliance.

2.2.3 Benefit theory of taxation

Carver (1959) developed this theory and indicated that tax payers should make the least sacrifice when paying taxes which should be equal to the benefit they expect from payment of those taxes. This sacrifice can be seen in form of tax paid and the method of payment. One of the very generally accepted principles of taxation is that taxes may be levied according to the benefits derived; that is, the amount of each person's tax should correspond to the services which society renders him. Obviously, however, such a principle has, in practice, serious limitations. Sometimes those who are least able to pay taxes need most the state's aid. However, the state should ensure that it does not make taxpayers sacrifice much than the benefit they derive from taxes in form of huge taxes or stiff and uneconomical ways of paying those taxes. This theory was employed in this study to evaluate whether Hotels which are obligated to comply with ETRs perceive it as a burden or as an efficient way of paying taxes. This theory provided a model to test the effect of ETRs in the Kenyan context in administering VAT.

2.2.4 Rational expectations theory of technology adoption

Rational expectations theory of technology adoption was developed by (Davis, 1989). In this theory, Davis posited that maximizing adoption of technology requires understanding of the motivations of different groups of users and tailoring the deployment messages and materials to address their perspectives. This theory indicates that much of the technology adoption decision depends on a firm’s expectations about the benefits and costs of the
technology. In this research, the rational expectations theory was used to test the adoption of ETR Machines in VAT filing and see how Hotels have received this idea. This theory indicates that adoption of a technology such as ETR Machines depends on how the stakeholders value it in terms of bringing benefits to the business and / or reducing costs and increasing efficiency. This theory was therefore valuable since it provided the researcher with a theoretical framework to test the ETRs effect.

2.3 Review of Empirical Studies

Kenya introduced Value Added Tax in the year 1990 to replace the Sales Tax which had been in operation since 1973. VAT has been the choice instrument for unexpected expenditure by increasing VAT rates. The analysis showed that the determinants of VAT revenue have a significant effect on the responsiveness of VAT revenue. This implies that the growth in VAT revenue during the period of study was accounted for by changes in its determinants. In the VAT revenue equation, the positive intercept effect is counteracted by negative effects that are greater the higher are standard tax rate, inflation rate and foreign exchange rate. This study also finds that multiple rates, higher range between highest and lowest non-zero VAT rates, and the longer the VAT has been in operation (age of the VAT) are associated with higher revenues.

This study will provide decision makers with an analytical framework which can be used to estimate the associated revenues for VAT in Kenya and guidance to policymakers in countries planning to introduce a VAT. It identifies the determinants of VAT revenues which when properly understood, documented, and captured in relevant tax revenue models, would make it possible to estimate accurately VAT revenues within a specified period of time. Although past studies advocated for raising rates within the
existing system as the most obvious approach for increasing revenues, policy makers should note that this study found that the tax rate cannot be pushed too high without markedly reducing VAT revenue. The study also contributes to the existing literature on the VAT structure in Kenya and stimulates further research in the area of VAT. The study showed that Kenya’s VAT revenue is very responsive to changes in its determinants and supports other researchers’ findings that the determinants of VAT revenue have a significant effect on VAT revenue.

Forrester Research (2001) identified that savings fall in the following three categories. First, Automated data entry yields great savings. Government clerks need not reenter tax information once entered by taxpayer and stored electronically in the relevant database. As a result, the productivity of data entry and checking doubles to tax files a day-reducing labor expenses for data handling personnel by 80 percent. Second, fewer errors lighten verification and correction burden. Intelligent data entry and the elimination of data re-entry, combine to bring the error rate to 5 percent in countries. Third, electronic data exchange reduces printing and mailing time and costs. Tax departments may spend considerable amount of money to subcontract printing and mailing of tax forms.

Despite dramatic improvements in recent years in information technology, including automated data capture, the administrative and taxpayer compliance burden associated with large-scale invoice matching continues to be significant (Fu, Fan & Chao, 2006). Automation of taxation is not an end in itself, but a crucial component of taxation reforms, which aims at modernizing tax administrations and aligning the legal framework and procedures with international standards and best practices. Automation facilitates the clearance of legitimate trade, improves the efficiency of taxation controls and secures
revenue collection (Moyi and Muriithi, 2003). In addition, it helps address expectations of traders and transport operators regarding transparency, predictability and reliability, as well as the simplification of border-crossing and administrative procedures.

Governments and Hotels alike cannot realize any return on their investments in information systems (IS) like ETRs, unless the systems are actually used by their intended users. Despite their sizable cost, IS has been found underutilized or sometimes abandoned because of the lack of user acceptance (Fu et-al 2006). Understanding why individuals accept or reject an IS has proven to be a challenging issue. The proliferation of e-government worldwide raises the problem of how governments can increase their citizen’s adoption of ETRs, e-tax or e-Filing. An IMF study, 2005 on VAT refunds found out that a pre-condition for successful reform is a strong commitment on the part of government and key stakeholders. The premises and equipment necessary for automation may include new or rehabilitated offices, hardware, software, internal communication systems and connection to external networks, and they may also require the set-up of wireless networks and links. Furthermore, the introduction of ICTs needs to be accompanied by extensive capacity building. Benefits of automation include a reduction of fraud, remote access to information, improved collection of statistics, and uniform application of tax legislation (Lumumba et al., 2010).

The sign of the relationship between efficiency and the method of processing tax returns and the system of tax collection used by taxpayers is one of the questions that still are not resolved nowadays. Allingham and Sandmo, (1972) introduced the portfolio approach to solve the individual tax cost problem and showed that, under weak tax processing systems, a number of costs are incurred. However, IMF (2005) found out that a rise in the
use of ICT in collecting taxes increases the amount of tax collected and reduces processing costs and filing time. A number of issues can therefore be regarded as possible problems that are faced by taxpayers in processing of their VAT returns using Electronic Tax Registers. Such issues include: Time taken in processing VAT returns; Tax preparation costs; Staff costs required to process returns and improve revenue capture through more accurate data entry; Costs of stationery in form of receipt books, writing materials, files and filing of tax returns systems; Costs that are incurred in processing tax refunds; Costs of auditing sales records; Insurance costs for the ETRs; Space for keeping past data records; Prosecution; refund; follow up time and costs (Lumumba et al, 2010).

2.3.1 Tax Auditing and Administration

Tax audit is generally defined as an examination as to whether the taxpayer has correctly assessed and reported tax liability and has fulfilled other tax obligations according to tax legislation and the tax system in general (Arenas, 2002). Auditing of taxpayers is the activity of the tax authority to persecute the discovery of (all or part) of under reporting of tax basis (Das-Gupta and Gang, 1996). Concepts and relations of auditing and tax evasion are studied from an economical and theoretical point of view from a pioneer work of (Allingham and Sandmo, 1972).

In a field of private financial audit statements audit the audit must comprise of all the economic financial operations, including the taxes originated ones, and the auditor’s opinion must also include whether the taxpayer has correctly assessed the liability. The use of a tax audit made by the financial statements auditor with an own sense is used where financial information of medium and big companies and the tax forms related must be tax- audited (Lin, 2000). A firm may entrust a certified public accountant to prepare,
attest and file its business income tax returns. The CPA may adjust the accounting income to taxable income based on the laws and attach signed ‘tax returns attestation report’ to the tax return (Article 102 of the Income Tax). Tax Auditing is necessary in Tax Administration since it helps to ascertain that all the tax has been collected and that there was no tax avoidance by a company.

2.3.2 Electronic Auditing and Tax Administration

Electronic auditing, or e-Auditing, is computer-assisted auditing using electronic records to complete all or part of the audit. If you use a computer to record your business activity and maintain this data electronically, you are a candidate for an electronic audit. During an electronic audit, you provide electronic machine-sensible records and we use computer software programs to analyze the data. We prefer to examine electronic records whenever possible, because it is the most accurate and efficient method of conducting an audit. From a strictly public point of view, (Das-Gupta and Gang, 1996) indicate that, traditionally, “auditing of taxpayers has been defined as an activity of the tax authority to persecute the discovery of all or a part of under reporting of tax basis”. The introduction of tax automation minimizes direct contacts between tax collection officers and traders or their agents, and hence leads to a reduction of corruption (Fjeldstad and Rakner, 2003).

The concepts and relations of auditing and tax evasion are studied, from an economic and theoretical point of view from the pioneer work of (Allingham and Sandmo, 1972). Electronic Auditing has assisted Tax administration in that now the Auditors only use a short time to do their audit unlike in the past when they were doing their audit manually. Electronic auditing is now easy since only the ETR receipts are viewed and the auditor gets the whole financial information of a company.
2.4 Determinants of Tax Administration

Kenya introduced Value Added Tax in the year 1990 to replace the Sales Tax which had been in operation since 1973 (KRA Website). VAT has been the choice instrument for unexpected expenditure by increasing VAT rates. The determinants of VAT revenue have a significant effect on the responsiveness of VAT revenue; this implies that the growth in VAT revenue during the period of study will be accounted for by changes in its determinants. In VAT the administration strategies include ETR Machines, VAT PIN’s, filling of monthly VAT returns with penalties for non-compliance, use of VAT agents to withhold VAT and latter submit it, use of VAT certificate to represent payment, VAT refunds as well as VAT audit in clients business.

The determinants of Tax Administration are therefore the volume of sales that companies are making, the large number of companies which are undertaking their operations in a country, the level of corruption in a country that is characterized by failure of companies to submit the VAT collected and hence the need for VAT administration in Kenya. Also due to the need of money by the government for the purposes of financing its operations the government has therefore devised ways of administering tax in the country in order to have maximum collection of the taxes to enable meet its expenses in the country.
2.5 Summary of the Literature Review

This section of the study discussed the various theoretical and empirical literatures throughout the world in VAT and Electronic filing of VAT. The section also outlined how the use of electronic forms of VAT filing is expected to affect and has affected the government and Hotels in Kenya. Since many researchers have concentrated on tax evasion and tax avoidance, a lot has been desired especially in the area of VAT administration, tax audit time and cost as well as processing of VAT returns.

This section therefore revealed a gap between expectations of taxpayers in regard to VAT Administration and those of the government hence justifying the need for this study. Review of empirical literature also identified that there are mixed outcomes on the use of ICT in tax administration and hence there is need to find the exact situation in Kenya. There has also been very few local studies done on this area and most of the literary articles are from other countries mostly European. This therefore has paved the way for this study. The research gap exists in the effect of ETR Machines in Administration of tax as past studies (Magutu .et. al 2010) focused on how ETRs assisted in processing the returns. The study therefore answers the question ‘How effective are ETRs in combating tax vices in tax administration.'
CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents the research methodology adopted. It discusses the research design, the target population, samples and sampling design, data analysis, data collection instruments and data presentation techniques.

3.2 Research Design

This study adopted descriptive approach. Descriptive research is a process of collecting data in order to test hypotheses or to answer questions concerning the current status of the subject in the study (Mugenda 2003). This is a scientific approach that aims primarily at gathering knowledge (descriptions and explanations) about the object of study but does not wish to modify the object. The descriptive research design was used to identify the effects of ETR Machines on VAT Administration by the government in Kenya.

The target was to find out how things are, or how they have been. The study also included gathering opinions about the desirability of the present state of things, but it did not include planning any improvements. This is because the research was up to answer the questions “what?” and “how?” with regards to descriptive approach.

3.3 Population of Study

The Population of study was all Hotels registered VAT tax payers in Nairobi County. The researcher chose the County because it comprises the highest population of major tax payers and was also convenient for data collection. The population of study was 90 registered Hotels in Nairobi County. According to the VAT Act, Cap 476, any trader
whose turnover exceeds three million shillings should register for VAT. This study was therefore for Hotels who are using ETRs specifically the Hotels since they handle a big range of foods which are taxable. In order obtain information regarding effect of ETRs in VAT Administration.

3.4 The Sample

The sample was restricted to selected Hotels within Nairobi County. These Hotels were selected using Stratified random sampling method. This is a method of sampling that involves the division of a population into smaller groups known as strata. The strata are formed based on members shared attributes or characteristics. A random sample from each stratum was taken in a number proportional to the stratum’s size when compared to the population. The subsets of strata were then pooled to form a random sample.

The study was based on this type of sampling because it captures key population characteristics in the sample similar to a weighted average. It therefore produces characteristics in the sample that are proportional to the overall population. It was also effective since the study was based on populations with a variety of attributes. A sample size of 30 Hotels was considered. This sample being a representative of the whole population allowed generalized conclusion of the entire population. The population size was 90 Hotels which are located within Nairobi County. (Appendix 2)
3.5 Data Collection

Both primary and secondary data was employed in this study. The data collected was basically qualitative. The main data analysis was performed on the primary data in form of questionnaires which were semi structured. The questionnaires were administered to respondents in 30 Hotels. The ‘drop and pick later’ method of data collection was employed. This method was considered because of time factor and to encourage more respondents who took time filling the questionnaires. Head of departments, managers, accountants, auditors, audit seniors, filled the questionnaires as they are the ones who use ETR Machines in Hotels. Secondary data was used to augment the report and finding. Secondary data was obtained from various publications on VAT i.e. from books, magazines and the internet.

Semi structured questionnaires were used to collect data. The researcher opted to use the questionnaires as a tool since they are easy to construct having rules and principles for construction that are easy to follow also, copies of the questionnaires reach a considerable number of respondents either by personal distribution. Generally, responses by interviewees were standardized and this made tabulation easy. More importantly, the respondents were free in replying the questions since there was no interviewer to influence their responses. This was one of the ways to avoid biases and in particular the interviewer’s bias.
The researcher conducted pre-tests on survey instruments to identify any questions, wording or ordering that could be unclear to the respondents, to determine if any critical measures can be omitted from the survey instrument and to provide an estimate of the respondents’ burden. The survey instruments were then revised to reflect the pre-test findings.

3.6 Data analysis

The technique to be used to analyze and interpret the data collected was descriptive statistics i.e. cross tabulation. Frequency tables, proportions or percentages graphs were generated to test the effect of ETR Machines in the Administration of VAT. Frequency tables and descriptive statistics were also used to determine the effect of ETR Machines before and after their introduction. To determine the relative importance of ETR in Administration of VAT, frequency tables and descriptive tables were also used. The above analysis was used to help in identifying the relative importance of factors such as job role, age, and experience with ETR Machines, level of education, how conversant one is with ETR Machines and many other factors in the process of implementation of ETR Machine. Frequency tables, pie charts, summarized percentages, and graphs. These methods of analysis were appropriate because they are easy to apply. Tables and figures were the main methods of data presentation.

Further analysis involved an in depth study with reference to the level of satisfaction through the use of ETR Machines, richer findings were undertaken using cross tabulation, efficiency index and other techniques using SPSS version 17 as the data required. The Data Analysis Model was to test the effect of ETR Machines before and after their introduction as a form of VAT Administration Tool.
3.6 Data Validity and Reliability

To understand the meaning of reliability and validity, it is necessary to present the various definitions of reliability and validity given by many researchers from different perspectives. Although the term reliability is a concept used for testing or evaluating quantitative research, the idea is most often used in all kinds of research. This relates to the concept of a good quality research when reliability is a concept to evaluate quality in quantitative study with a purpose of explaining while quality concept in qualitative study has the purpose of generating understanding as Stenbacka V. (2001) stated.

To ensure reliability in qualitative research, examination of trustworthiness is crucial according to Seale B. (1999). While establishing good quality studies through reliability and validity in qualitative research, the trustworthiness of a research report lies at the heart of issues conventionally discussed as validity and reliability (Seale B., 1999). When judging or testing qualitative work, (Strauss and Corbin, 1990) suggest that the usual canons of good science require redefinition in order to fit the realities of qualitative research.

If the issues of reliability, validity, trustworthiness, quality and rigor are meant to differentiate a good from a bad research then testing and increasing the reliability, validity, trustworthiness, quality and rigor was important to the research in any paradigm. Psychometric scales i.e. opinions, perceptions and attitude of the ETR users in relation to the improvement of audit time and cost was measured using content validity and test-retest reliability tests.
CHAPTER FOUR: DATA ANALYSIS, RESULTS AND DISCUSSION

4.1 Introduction
This chapter presents the research findings. The research findings presented in this section are based on the research objective focused on by the study which was: To evaluate the effect of using Electronic Tax Registers (ETRs) in VAT Administration. Whereas the study had targeted a total of 30 respondents, only 22 respondents were considered valid and adequate for analysis stage this represents 73.3% of the sample. These responses formed the basis for the analysis presented in this chapter. The analysis of the data was done using proportions and percentage and the finding were presented using graphs, pie charts and tables.

4.2 Research Findings

4.2.1 The job roles
The table below indicates the job roles of various respondents from the Hotels.

<table>
<thead>
<tr>
<th>Job Role</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accountant</td>
<td>12</td>
<td>54.5</td>
<td>54.5</td>
<td>54.5</td>
</tr>
<tr>
<td>Manager</td>
<td>3</td>
<td>13.6</td>
<td>13.6</td>
<td>68.2</td>
</tr>
<tr>
<td>Head of department</td>
<td>4</td>
<td>18.2</td>
<td>18.2</td>
<td>86.4</td>
</tr>
<tr>
<td>Other</td>
<td>3</td>
<td>13.6</td>
<td>13.6</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>22</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Source: Research data
From the table above, a mean of 54.5% of respondents from Hotels were Accountants and thus indicating they well understood their role as regards to the VAT and its filling, 13.6% were Managers, while 18.2% were Head of departments and 13.6 % rest represented people from other disciplines i.e. IT.

4.2.2 Experience with the ETR Machines

The table below indicates the level of experience with ETR Machines. The Researcher wanted to find out if the respondents were exposed to the technology so as to see their level of understanding of the ETRs, also to find out how long they have been using the ET Machines.

Table 2: Experience with ETR Machines

<table>
<thead>
<tr>
<th>Experience Level</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-5yrs</td>
<td>14</td>
<td>63.6</td>
<td>63.6</td>
<td>63.6</td>
</tr>
<tr>
<td>6-10yrs</td>
<td>6</td>
<td>27.3</td>
<td>27.3</td>
<td>90.9</td>
</tr>
<tr>
<td>11-15yrs</td>
<td>2</td>
<td>9.1</td>
<td>9.1</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>22</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Source: Research data
With 63.64% of respondents with an experience of between 0-5 years, this indicates majority of respondents have a high level of exposure with technology as well as they are newly graduated from university or colleges. Those in categories of 6-10 years indicate that they were there while ETRs were introduced and may or may not have experience with the manual system and hence they are more versed with both systems. Only 9% of the respondents have an experience range of 11-15 years. This form the basis of deriving who benefited most from the introduction of ETRs as they fulfill the cannon of simplicity and certainty in taxation.
4.2.3 Time taken before ETRs Introduction

Here the researcher wanted to find out how much time the Respondents used to take before ETR Machines were introduced and the costs they used to incur as a result of the long period of time taken to file their VAT returns.

Table 3: Before the introduction of the ETRs, how much time were the respondents taking to prepare VAT returns.

<table>
<thead>
<tr>
<th>Time Taken</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>One week</td>
<td>1</td>
<td>4.5</td>
<td>4.5</td>
<td>4.5</td>
</tr>
<tr>
<td>Two weeks</td>
<td>5</td>
<td>22.7</td>
<td>22.7</td>
<td>27.3</td>
</tr>
<tr>
<td>One month</td>
<td>16</td>
<td>72.7</td>
<td>72.7</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>22</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Source: Research data

In the table above various hotels regarded the filling of VAT returns before the introduction of ETR Machines. It indicates that 72.7% would take up to one month, while only 4.5% would be able to file the returns by one week 22.7% would take at least two weeks to file their returns. As all this time was taken the VAT regulations state that tax ought to be paid on or before 20th of the following month. Hence so much time was wasted since Accountants would start preparing VAT Returns early.
Table 4: Descriptive statistics

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Before the introduction of ETRs how much time were you taking to prepare VAT returns.</td>
<td>2.68</td>
<td>0.568</td>
<td>22</td>
</tr>
<tr>
<td>After the introduction ETR Machines how much time are you taking to prepare VAT returns.</td>
<td>1.32</td>
<td>0.477</td>
<td>22</td>
</tr>
</tbody>
</table>

**Source: Research Data**

From the above table, time taken before the introduction of ETR Machines was 2.68 weeks with a standard deviation of 0.588, while after the introduction of ETRs the mean of time taken reduced to 1.32 weeks with a standard deviation of 0.477 meaning, ETR Machines helped in reducing the time taken to file returns and hence they are beneficial to Hotel owners.
Table 5: Correlations

<table>
<thead>
<tr>
<th>Correlations</th>
<th>Before the introduction of ETRs how much time were you taking to prepare VAT returns</th>
<th>After introduction of ETR Machine show much time are you taking</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pearson Correlation</td>
<td>1</td>
</tr>
<tr>
<td>Before the introduction of ETRs how much time were you taking to prepare VAT returns</td>
<td>Sig. (2-tailed)</td>
<td>0.158</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>22</td>
</tr>
<tr>
<td>After introduction of ETR Machines show much time are you taking</td>
<td>Pearson Correlation</td>
<td>-.312</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>0.158</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>22</td>
</tr>
</tbody>
</table>

Source: Research data
Figure 2: The pie chart below indicates how much time the hotels used to take to prepare their VAT returns before the introduction of ETR Machines.

Source: Research data.

From the pie chart above, 72.73% of respondents would take a period of one month to prepare their VAT returns, 22.73% would take two weeks, while the rest 4.55% would take a period of one week. Meaning a lot of time was taken to prepare VAT returns before ETR Machines were introduced.
4.3 Descriptive Statistics

The objective of this section was to find out if there has been cost reduction after the introduction of the ETR Machines. The table below therefore will explain if indeed after the introduction of ETR Machines there is cost reduction or not.

Table 6: Descriptive Statistics

<table>
<thead>
<tr>
<th>Descriptive Statistics</th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Has introduction of ETRs have reduced VAT filling costs</td>
<td>22</td>
<td>0</td>
<td>1</td>
<td>0.77</td>
<td>0.429</td>
</tr>
<tr>
<td>Valid N (list wise)</td>
<td>22</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Research data.

From the table above a mean of 0.77 Hotels believe introduction of ETR Machines has reduced VAT filling costs. This shows how ETR Machines have helped in saving Hotels and other firms money which is then used for other expenses.
Table 7: After the introduction of ETR Machines how much time are you taking to prepare VAT returns

<table>
<thead>
<tr>
<th>Time Taken</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>One week</td>
<td>15</td>
<td>68.2</td>
<td>68.2</td>
<td>68.2</td>
</tr>
<tr>
<td>Two weeks</td>
<td>7</td>
<td>31.8</td>
<td>31.8</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>22</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Source: Research data.

From the table above, out of a sample of 22 Hotels, 15 of them are able to file the returns within one week, this an indication of the efficiency created by the use of ETRs as the officers in charge of filling only need to print the VAT summary and compute the difference.

4.4 Effect of Using ETRs in VAT processing in Hotels

The table below identifies whether ETR Machines have helped Hotels in fast VAT Processing or not through the use of mean and standard deviation.
Table 8: Effect of Using ETRs in VAT processing in Hotels

<table>
<thead>
<tr>
<th>Factors</th>
<th>Mean</th>
<th>Std. dev</th>
</tr>
</thead>
<tbody>
<tr>
<td>ETRs have increased efficiency in sales audit</td>
<td>4.27</td>
<td>0.883</td>
</tr>
<tr>
<td>ETRs have resulted to Easy and fast VAT Processing leading to less risk of prosecution</td>
<td>4.23</td>
<td>0.922</td>
</tr>
<tr>
<td>ETRs have led to timely preparation of reports</td>
<td>4.00</td>
<td>1.069</td>
</tr>
<tr>
<td>ETRs have led to reduced cost in tax filing and submitting reports</td>
<td>4.00</td>
<td>1.024</td>
</tr>
<tr>
<td>Preparation of returns using ETRs is fast and efficient</td>
<td>4.27</td>
<td>0.883</td>
</tr>
<tr>
<td>The introduction of ETRs has assisted in ease of work of processing VAT returns hence lower costs of preparation.</td>
<td>3.86</td>
<td>1.037</td>
</tr>
<tr>
<td>ETRs are a waste of funds and have not assisted the business in any way.</td>
<td>1.41</td>
<td>0.796</td>
</tr>
<tr>
<td>The introduction of ETRs has assisted in cutting costs that the business used to incur in processing VAT.</td>
<td>3.41</td>
<td>1.054</td>
</tr>
<tr>
<td>ETRs have reduced subjection to regular government tax audit</td>
<td>3.45</td>
<td>1.011</td>
</tr>
</tbody>
</table>

Source: Research data.

From the results in table 10 most respondents agreed (mean = 4 and the standard deviation is significant) that ETRs have increased efficiency in sales audit and have resulted to easy and fast VAT processing leading to less risk of prosecution, timely preparation of reports, reduced cost in tax filling, fast and efficient preparation of returns using ETR Machines.
A number of respondents, in our Likert scale Neither Agree nor Disagree (Mean = 3, and a standard deviation of 1) indicating that they are indifferent in regard to ETRs having assisted to ease tax audit and VAT returns hence reducing cost of audit, having assisted in cutting costs that Hotels used to incur in processing VAT and subjection to regular government tax audit. Most respondents Strongly Disagreed (Mean = 1, and a standard deviation of 0.796 is significant) that ETR is a waste of funds and has not assisted the business in any way.

4.5 The level of education of the respondents
This was to identify if the respondents were well versed with the concept of VAT, and of Electronic Tax Registers.

Table 9: The level of education of the respondents

<table>
<thead>
<tr>
<th>Level of Education</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>College</td>
<td>3</td>
<td>25.0</td>
<td>25.0</td>
<td>25.0</td>
</tr>
<tr>
<td>Undergraduate</td>
<td>5</td>
<td>41.7</td>
<td>41.7</td>
<td>66.7</td>
</tr>
<tr>
<td>Graduate</td>
<td>4</td>
<td>33.3</td>
<td>33.3</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>12</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Source: Research data.

From the table above, 25% of respondents are college graduates, 41% being undergraduates and 33% being graduate level of education. This illustrates the level of knowledge this staff are well versed with concept of VAT, and the concept of electronic tax register and VAT Administration.
Figure 3: Before the introduction of ETRs how much time were you taking to prepare VAT Returns.

Source: Research data

Table 10: Before the introduction of ETRs how much time were you taking to prepare VAT returns

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>One Week</td>
<td>2</td>
<td>16.7</td>
<td>16.7</td>
<td>16.7</td>
</tr>
<tr>
<td>Two Weeks</td>
<td>8</td>
<td>66.7</td>
<td>66.7</td>
<td>83.3</td>
</tr>
<tr>
<td>One Month</td>
<td>2</td>
<td>16.7</td>
<td>16.7</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>12</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Source: Research data.
From the table above, 83.3% of respondents used two weeks and more to prepare VAT returns as opposed to only 16.7% who took less than one week. This could be associated with the level of turnover as well as the volume of workload and the level of experience.

4.6 Time taken after introduction of ETRs

The researcher here wanted to find out the time taken after the introduction of ETR Machines so as to ascertain if the ETRs were of paramount importance or not.

**Figure 4: After introduction of ETRs how much time are you taking to prepare VAT returns.**

![Chart showing time taken to prepare VAT returns after ETR introduction]

**Source: Research data.**

The table above indicates that 75.0% of the respondents take an average of one week to file their returns on the 20th day of the following month and 25.0% take around 2 weeks.
4.7 Discussions and Interpretation of Findings

Electronic Tax Register Machines were introduced with the main aim of increasing the amount of Value Added Tax collected by the government. From the research data the researcher found out that the introduction of ETR Machines was of great help to the firms and specifically to the hotels since they have been able to reduce time taken to file VAT returns.

The Researcher also found out that respondents were exposed to the technology and hence they fully understood the use of the ETR Machines with 63.64% of respondents having experience of between 0-5 years. This indicates majority of respondents have a high level of exposure to technology as well as they are newly graduated from universities or colleges. While only 9% of the respondents have an experience range of 11-15 years meaning they have experience of the manual and the ETR system. This forms the basis of deriving who benefited most from the introduction of ETRs as they fulfill the cannon of simplicity and certainty in taxation.

The aim of the study was basically to find out how much time the Respondents used to take before ETR Machines were introduced and the costs they used to incur to file their VAT returns as compared to how much time and cost they incur now after the introduction of ETR Machines. The results were that 72.7% of the respondents would take up to one month, 4.5% would be able to file the returns by one week and 22.7% would take at least two weeks to file their returns. As all this time was taken the VAT regulations state that tax ought to be paid on or before 20\textsuperscript{th} of the following month. Hence so much time was wasted since Accountants would start preparing VAT Returns early.
From the research findings most respondents agreed with a (mean = 4 and the standard deviation is significant) that ETRs have increased efficiency in sales audit and timely preparation of reports hence reducing the amount of time incurred to audit a company.

From the findings ETRs have also helped to reduced costs incurred in tax filling, this is because the ETRs lead fast and efficient preparation of returns and hence great reduction in the costs incurred and these money can be channeled to other use.

Most respondents Strongly Disagreed with a (Mean = 1, and a standard deviation of 0.796 is significant) that ETR is a waste of funds and has not assisted the business in any way meaning that ETR Machines are of great help to firms today.

KRA has been able to increase the amount of VAT collected from businesses as a result of ETR introduction, and since ETR introduction they have been able to compact vices which were associated with tax like tax avoidance and late filling of VAT Returns.
CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the summary and description of the findings derived from this study. The chapter also provides findings, conclusions and recommendations as well as recommendations for further research.

5.2 Summary of the findings

The study intended to find out the use and the effect of using ETR Machines in the Administration of tax in hotels in Nairobi County. From the analysis and data collected the following discussions and recommendations were made. The analysis was based on the objective of the study which was “To determine the effect of using Electronic Tax Registers (ETRs) in improving VAT administration in Kenya.”

The study revealed that majority of the respondents have greatly benefited from the introduction of ETR Machines as they have enabled quick filling of VAT returns. It was clear that there is a significant time reduction in filling VAT returns as majority of the respondents (67%) would take two weeks before the introduction and the time has reduced to one week with most of the respondents now i.e. 75% taking only one week to file the returns.
There is certainty of tax payable and availability of information required, this is another change which has come as a result of ETR Machines introduction. Accountants are able to file their returns with accuracy since all financial information is available. Nowadays companies are not accepting invoices which are not accompanied by ETR receipts and this has helped in compacting vices associated with taxes like tax avoidance.

The use of ETR Machines has also led to improved sales audit for the Hotels since everything that is vatable is captured to record hence easing the work of the auditors and reducing time taken to do audits in a company. KRA officials are able to go through the ETRs and get information concerning the sales of a company and also the taxes incurred.

Majority of the respondents with the experience of 0-5 years (80%) agreed from their experience that the introduction of ETRs has improved timely reporting of VAT audits. Respondents with experience of 6-10 years agree introduction of ETRs has improved timely reporting of VAT returns; those with experience of more than 16 years disagree. This is an indication that indeed the use of ETRs has improved sales audit and timely filling of monthly VAT returns since majority of the respondents agreed to this fact and also the others of more than 16 years have experience of processing of the VAT Returns and therefore only a slight change has been experienced as a result of ETRs introduction.

ETR Machines have also helped to reduce costs incurred in the VAT Processing, according to the research findings respondents with a mean of 0.77 believe introduction of ETR Machines has helped in reducing VAT filling costs. This shows how ETR Machines have helped in saving Hotels and other Firms money which is then used for other expenses.
5.3 Conclusions

Based on the results from the data analysis the study came up with the following conclusions:

First Kenya has witnessed significant changes in many aspects of its economy for the last two decades and was pressured to introduce VAT in 2005 to bridge the gap occasioned by over reliance of donor funds for her budget. But like many other developing countries it has had to contend with the common problems that plague Tax systems for the developing countries (Karingi et. al 2005). ETRs have been introduced to get the country out of problems that plague tax systems in Kenya. From the research data, all respondents who operate Hotels have acquired ETR Machines an indication that most Hotels in Kenya have complied with VAT requirements.

Secondly ETRs are one of the many factors attributing to the timely filling of VAT returns. The respondents were asked to indicate whether it attributed to the timely filing of monthly returns and 91% of the respondents indicated that timely filling of VAT returns can be attributed to the adoption of the ETR Machines with only 9% of respondents with contrary opinion out of a sample of 22 Hotels. Most Hotels indicated that timely filling of VAT returns was attributed to the adoption of ETR Machines. From the research there is also a conclusion that ETRs have reduced time taken in preparing VAT returns. Many respondents agree that they had delays in preparing VAT returns before the introduction of ETRs and the delays have been reduced with the introduction of ETRs.
Thirdly on the effect of ETRs in VAT administration, ETRs have reduced the tax reporting burden on the Hotels while improving the efficiency and effectiveness of Government operations, since it provides timely and accurate tax information. VAT processing is fast leading to less risk of prosecution.

Fourthly, ETRs are one of the many factors attributing to timely filling of VAT returns. The use of ETR Machines has lead to improved sales audit for the business, since everything that is vatable is captured to record. Many respondents strongly disagree (Mean = 1, and a standard deviation of 0.796) that ETRs are a waste of funds and have not assisted Hotels in any way. On the other hand majority agree that auditing from ETRs has made VAT returns fast and efficient and has led to timely filling of VAT returns. According to many respondents the use of ETRs has resulted in easy and fast VAT processing leading to less risk of prosecution.
5.4 Limitations of the study

Owing to time and resource limits the researcher drew the sample from taxpayers using ETR Machines in Nairobi County only.

The study did not include other service and manufacturing firms who use ETR Machines because of limitation of time and hence the conclusions were drawn from the Hotel Industry only.

There was complexity of accessing information from some Hotels since they thought that the researcher was a KRA official doing investigations.

Data used was only from those Hotels whose respondents were willing to participate in the study that is, from a sample of 30 Hotels only 22 were able to fill and return their questionnaires.

Another limitation in this study was that of collecting secondary data this is because not many researchers have been able to research in the area of ETR Machines hence the researcher only relied on the few researches done on ETRs.
5.5 Recommendations

5.5.1 Policy Recommendations

According to majority of the respondents there is need for more training on using ETRs so as to ensure that they are more efficient and effective. The government should ensure that all companies use ETRs in their sales because some small and medium enterprises evade tax and yet they sell taxable goods.

Kenya Revenue Authority as an institution responsible for tax collection should device a networked system whereby all the users are networked e.g. from source to the auditor and finally to the exchequer. This would help reduce time spent in manually filling of returns and tax remittances.

The government should also provide the ETR Machines to taxpayers free of charge. Since taxation is for the government revenue collection therefore the government should be responsible for the initial cost of the ETR Machines.

In order to achieve maximum benefits and the fiscal policies, KRA should also strive to implement and enforce the requirements of CAP 486 in regard to operations of business and penalties for late filling of returns.

Some respondents also recommended that the government should carry out regular checks on the ETRs so as to avoid manipulation by fraudulent taxpayers to cultivate a culture of patriotism to taxation.
5.5.2. Recommendations for further research

The study focused on the effect of ETR Machines in Administration of VAT. Although ETRs have aided in the improvement of government revenue as its fiscal policy, this study was limited to the single aspect of the effect of ETRs in VAT Administration. There is need to do a research on whether the legislation governing the electronic tax systems, breakdowns, installation, training, discontinuation of operations and well as the VAT unpaid are effective

Further research is also recommended in the this area in order to find out how much the tax authorities should pay more attention to tax payer education with regard to VAT, compliance and tax audits. The burden of interpretation of tax laws and processing of returns should be done by the government. This will give tax payers incentives as regard to tax laws, and therefore assessing individual tax liabilities and paying the correct amount of tax in time.

Therefore, further research is proposed to determine the effectiveness of other strategic measures such as training, tax clinics, snap checks by KRA officials as well as the government institutions which act as tax agents.

This research was limited to one area of study that was finding out the Effect of ETR Machines on VAT Administration. That means that there are other areas which remains to be studied in about the use of ETR Machines in Kenya for instance one can study about the effect of ETR Machines on the job market since they have reduced time it means that less staff are able to file the returns hence job reduction.
REFERENCES


Davis F D, 1989, “Perceived usefulness, perceived ease of use and user acceptance of information technology” MIS Quart. 13319-13339.


Fjeldstad, O. and Rakner, L. (2003). Taxation and Tax Reforms in Developing Countries: Illustrations from sub-Saharan Africa. CMI Reports No 6, Norway.


Ramsey, Frank (1928)”a mathematical theory of saving, “economic journal, 38, (December), 543-559


APPENDICES

APPENDIX I: QUESTIONNAIRE

This Questionnaire is aimed at seeking views and opinions on the effect of ETR Machines on VAT Administration. Your organization has been selected and you are requested to answer the questions herein. Kindly answer the questions by ticking or filling on the space provided and as objectively as possible.

SECTION A. GENERAL INFORMATION

1. What is your Job Role or Title?
   Accountant [ ]
   Manager [ ]
   Head of Department [ ]
   Other; specify……………………………………………………………………

2. What is your level of experience with ETR?
   0-5 Years [ ]
   6-10 years [ ]
   11-15 years [ ]
   16-20 years [ ]
   20 & above [ ]

3. What is your highest educational level?
   Secondary level [ ]
   College [ ]
   Undergraduate [ ]
   Postgraduate [ ]
4. Are you totally conversant with the ETR system of tax administration?

Yes [ ] No [ ]

SECTION B: ETR TAX RETURNS TIME BEFORE AND AFTER INTRODUCTION OF VAT RETURNS

1. Before the introduction of ETR Machines, how much time were you taking to prepare VAT returns?

One week [ ]
Two weeks [ ]
One month [ ]
More than one month [ ]

2. Has the introduction the of ETR Machines reduced VAT filing costs?

Yes [ ]
No [ ]

3. Have you ever had a delay in filing VAT returns before the introduction of ETRs?

Yes [ ]
No [ ]

4. After introduction of ETRs, how much time are you taking to prepare VAT returns?

One week [ ]
Two weeks [ ]
One month [ ]
More than one month [ ]
5. From your experience, has the introduction of ETRs improved timely filling of VAT returns?  
Yes [ ]  No [ ]

6. Have you enjoyed any benefits in the faculty of sales audit through the adoption of your ETR Machine, e.g., frequency of sales audit?  
Yes [ ]  No [ ]

7. How important do you consider the ETRs contribution to achieving effectives in tax administration? Please rate your level of agreement to the statements listed below on how ETR has affected your business. Rate your answers using the following 5-point Likert scale.

1 - Strongly Disagree  2 - Disagree  3 - Neither agree nor disagree  4 - Agree  5 - Strongly Agree

<table>
<thead>
<tr>
<th>Statement</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>ETR has increased efficiency in sales audit</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ETR has resulted to Easy and fast VAT Processing leading to less risk of prosecution</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ETRs have led to timely preparation of reports</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ETRs have led to reduced cost in tax filing and submitting returns</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Preparation of returns using ETR is fast and efficient</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The introduction of ETR has assisted ease the work of processing VAT returns hence lower costs of preparation.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ETR is a waste of funds and has not assisted the business in any way.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The introduction of ETR has assisted in cutting costs that the business used to incur in processing VAT.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
8. Generally, can you say that ETRs have enabled effectiveness in tax administration in terms of audit time and cost?

Yes [  ] No [  ]

9. Please explain your answer in (8) above

........................................................................................................................................
........................................................................................................................................

10. How have ETR Machines affected your business in terms of audit time and cost?

........................................................................................................................................
........................................................................................................................................

11. In your view, what do you recommend on the ETR issue to make tax administration efficient and effective?

........................................................................................................................................
........................................................................................................................................

Thank you for taking the time to complete this questionnaire.
APPENDIX II: LIST OF HOTELS IN NAIROBI COUNTY

1. Arkland Palace Hotel
2. Best Western Premier Nairobi
3. Blue Hut Hotel
4. Blue Posts Hotel
5. Clarence House Nairobi
6. Country Lodge
7. CPA Centre
8. Crowne Plaza Hotel Nairobi
9. Dafam Hotel
10. Eastland Hotel
11. Eka Hotel Nairobi
12. Fairmont The Norfolk
13. Fairview Hotel
14. Grand Royal Hotel
15. Hemingways Nairobi
16. Hennessis Hotel
17. Hilton Hotel
18. Holiday Inn
19. Home Care Home Stays
20. Hotel Ambassadeur
21. Hotel Boulevard
22. Hotel Central Park Nairobi
23. Hotel Embassy
24. Hotel Greton
25. Hotel Inter-Continental
26. Hotel Kipepeo
27. Hotel La Mada
28. House Of Waine
29. Intercontinental Nairobi
30. Jacaranda Hotel
31. Jamiat Hotel
32. Jupiter Guest Resort
33. Kahama Hotel
34. Karibu Hotel
35. Kenya Comfort Hotel
36. Kikuyu Lodge Hotel & Safaris
37. Kivi Milimani Hotel
38. Laico Regency Hotel
39. Lenana Mount Hotel
40. Maasai Ostrich Resort
41. Marble Arch Hotel
42. Meltonia Luxury Suites
43. Meridian Court Hotel
44. Nairobi Safari Club
45. Nairobi Serena Hotel
46. Nairobi Transit Hotel
47. Nairobi Upper Hill Hotel
48. Nanchang Hotel
49. New Hillcrest Hotel
50. Oakwood Hotel
51. Ole - Sereni Hotel, Nairobi
52. Olive Gardens Hotel
53. Oryx Hotel
54. Palacina Residence & Suites
55. Panafric Hotel
56. Park Place Hotel
57. Parklands Shade Hotel
58. Parkside Hotel
59. Prideinn Raphta Suites Hotel & Conferencing
60. Progressive Park Hotel
61. Radisson Blu Hotel, Nairobi
62. Reata Serviced Apartments
63. Red Court Hotel
64. Rock Motel
65. Safari Park Hotel
66. Sagret Hotel
67. Sankara Nairobi
68. Sarova Hotels The Stanley
69. Sarova Panafric
70. Sentrim 680 Hotel
71. Sentrim Nairobi Boulevard Hotel
72. Silver Springs Hotel
73. Southern Sun Mayfair Nairobi
74. Sportsview Hotel
75. The Boma Nairobi
76. The Clarion Hotel
77. The Crown Place Hotel
78. The Headquarters Inn
79. The Heron Portico
80. The Hotel Emerald
81. The Ndemi Place
82. The Norfolk Hotel
83. The Panari Hotel
84. The Strand Hotel
85. Tribe The Village Market
86. Utalii Hotel
87. Villa Rosa Kempinski Nairobi
88. West Breeze Hotel
89. Wida Highway Motel
90. Windsor Golf Hotel And Country Club